

Kinship-ties and entrepreneurship in Western African*

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Abstract – Previous research has shown that in many low and middle income countries micro and small entrepreneurs achieve relative high marginal returns to capital but show only very low re-investment rates. Existing research is rather inconclusive about the possible causes. We explore whether forced solidarity, i.e. abusive demands by the family and kin hinder entrepreneurs to save and to invest. We start from a relatively simple theoretical model in which households consume and pursue different income generating activities, mainly the production of goods and services and the engagement in dependent wage work outside the household. Value added of the household business is subject to a solidarity tax imposed by the household's wider family and kin-group. In this model a higher solidarity tax leads to a reallocation of productive resources away from household production to other income generating activities and leisure. We use an original data set of West-African migrant entrepreneurs to see whether the empirical observation is consistent with the predictions of the model. We find some evidence that family and kinship structures within the city enhance labour effort and the use of capital. However, closeness to the area of origin seem to have adverse effects on both.

JEL-Codes: D13, D61, O12.

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*Ici en Afrique, quand tu n'as pas ta famille à côté, il faut savoir que tu vas souffrir.
(Rasmané, 45 ans, tailleur, Ouagadougou, 2009)¹*

*En Afrique, tu ne dis même pas à ta femme, quand tu as de l'argent.
(Thérèse, 42 ans, comptable, Ouagadougou, 2010)²*

1. Introduction

The economic stagnation in the informal sector which can be observed in many poor countries is often explained by the existence of 'poverty traps', i.e. the co-existence of non-convex production technologies in conjunction with capital market constraints (see e.g. Banerjee and Newman, 1993). Returns in the informal sector would be very low at low levels of capital, but much higher once a certain threshold of capital is exceeded. From there returns may fall again, but slowly. Hence, if entrepreneurs are constrained on the capital market and cannot overcome this threshold they are caught in a 'poverty-trap', i.e. face persistently low returns or simply exit the market.

A few studies have rigorously analyzed this hypothesis; however none of them has found strong support for it. The evidence is rather in favor of very high rates of return to capital at low levels of invested capital. Very convincing evidence comes from a recent randomized controlled trial with Sri Lankan micro and small enterprises by de Mel *et al.* (2008). De Mel *et al.* (2008) allocated randomly in-kind and cash transfers to micro and small enterprises. They found returns to capital of about 80 percent per year. In a similar experiment in Mexico they find even higher returns (McKenzie and Woodruff, 2008). Using a policy change in a directed lending program as a natural experiment, Banerjee and Duflo (2004) estimate a very similar rate of return for small- and medium-scale industrial firms in India. McKenzie and Woodruff (2006) examine entry costs and capital returns using detailed cross-sectional microenterprise data for Mexico. With this data, they also find only little evidence for the existence of high entry costs. To the contrary, start-up costs tend to be fairly low for some industries and returns to capital very high at lower levels of invested capital. For Ghana, Udry and Anagol (2006) find extremely high returns to investment into pineapple cultivation that often exceed 100 percent. In contrast to McKenzie and Woodruff (2006), they detect considerable entry barriers to investing into this new technology.³ However, even marginal investment into more traditional crops using existing technology yields very high returns of around 30 percent. Udry and Anagol (2006) then also estimate (a lower bound for) marginal returns to capital in informal *non-agricultural* activities, as revealed by the relative prices of capital goods with varying durability (used car parts). Their estimate suggests a rate of return to capital of approximately 60 percent, which again is relatively high. Lastly, Kremer, Lee and Robinson (2010) analyze returns to inventories in a longitudinal sample of retail firms in rural Kenya. The authors find an average (median) marginal annualized rate of return of 113 (36) percent. Returns differ largely across shops suggesting again large potential gains from improving the allocation of capital. Kremer *et al.* (2010) do not explicitly analyze the causes

¹ Quote taken from Pasquier-Doumer (2010).

² Own interview, conducted in Ouagadougou in March 2010.

³ The literature on income diversification of rural households also suggests the existence of considerable entry barriers into non-farm activities that yield considerably higher returns than agriculture (Reardon and Taylor, 1996; Haggblade *et al.*, 2005; Lay *et al.*, 2008)

of that heterogeneity but evoke credit market imperfections and behavioral factors that limit the ability of entrepreneurs to make optimal allocation decisions as potential reasons.

Even if credit constraints are binding for many entrepreneurs in these settings, there is no systematic evidence for poverty traps. In contrast, what is surprising and puzzling is that in more or less all these studies it has been shown that re-investment rates are fairly low. Hence an obvious question is why is this case despite the high returns? Even if capital markets do not function smoothly, if entry barriers are largely absent, a ‘rational’ entrepreneur would simply accumulate profits and re-invest. A straightforward answer could be that entrepreneurs are risk averse or simply have time-inconsistent preferences. It might also be that they are recurrently hit by shocks that require liquidity to cope. Another possibility could be the lack of savings institutions or at least the lack of knowledge about how these institutions function. Finally, it might be that entrepreneurs have problems to save because of high consumption demands by their family and kin or at least that incentives to invest are low, because the entrepreneur anticipates that a large part of the benefits will have to be shared with others. This is in the sociological literature often denoted as ‘forced solidarity’ or the ‘dark side of social capital’ (Portes and Sensenbrenner, 1993).

In this paper, we explore this latter aspect. Do the family and kin have negative incentive effects on potentially successful entrepreneurs? We analyze this question first theoretically and then test the implied hypotheses using a large sample of informal entrepreneurs covering seven economic capitals in West-Africa. Grimm *et al.* (2010) found similar evidence as the studies cited above; very high marginal returns for low levels of capital, absence of substantial entry barriers and low re-investment rates, which, again, raises the question what prevents entrepreneurs from investing? Focusing on internal migrants, i.e. entrepreneurs that migrated from rural areas or secondary cities to the economic capital and started an informal business, we find evidence that is consistent with the predictions of our theoretical model. The more intense the ties to the family and the kin in the area of origin the less resources an entrepreneur allocates to the production activity. However, we also find that family and kinship ties within the economic capital are associated with a more efficient factor allocation. Hence, in contrast to family networks tied to the village, local networks seem to have positive incentive effects. A possible interpretation is that local networks in the city are characterized by modern values and mutual support, whereas ties to the village are characterized by traditional sharing rules and norms. Although our data set is unique in many respects it is not experimental and does not have a panel dimension, hence the results have to be interpreted with the necessary caution. Further research is needed to work out the underlying causalities.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and lays out the key-concepts. Section 3 develops a simple theoretical household model illustrating how sharing obligations may adversely affect the allocation of resources to the household business. Section 4 presents the context of this study and the used data sources. Section 5 analyzes empirically how redistributive pressure affects the allocation of physical capital and labour to the firm. Section 8 concludes.

2. A brief review of the related literature

At the outset it is important to distinguish between ‘family and kinship ties’ on the one hand and ‘social network capital’ on the other. In line with La Ferrara (2007), we use family and kin-ship ties to refer to any form of blood relationship. At one end we situate family ties as the most proximate type of relationship. At the other end we situate kin-ship ties as a rather distant type that is characterized by socially recognized relationships based on supposed as well as actual genealogical ties. The main difference of family and kinship ties on the one hand and a generic set of individuals who interact on the other hand is that family and kin-ship ties can be seen as largely exogenous and cannot be freely changed or only at a high psychological cost (La Ferrara, 2007). However, in the literature that distinction is often not made and family and kinship ties are mixed with any type of social network capital. There is large consensus in the literature that social network capital provides a wide range of benefits by reducing transaction costs, facilitating the access to information, helping to overcome the dilemmas of collective action, generating learning spin-offs and providing informal insurance (see e.g. Coleman 1990; Fafchamps, 1996, 2001, 2002; Kranton, 1996; Woolcock, 1998, 2001; Minten and Fafchamps, 1999; Platteau, 2000; Knorringa and van Staveren, 2006).

Our distinction between family and kinship ties on the one hand and social network capital on the other largely overlaps with the distinction made in the field of economic sociology and social network analysis between ‘weak ties’ and ‘strong ties’ (Granovetter, 1973, 1983). Strong ties describe those links to the immediate family and kin and refer to rather closed networks. Weak ties, in contrast, go beyond the own social circles. Weak ties play for instance a central role in the circulation of and access to information, such as information on factor and product markets. However, strong ties may be important for risk sharing or social insurance and to access the capital required to start a business.

The idea that family and kin-ship ties may also imply adverse incentive effects is relatively old. It is quite often mentioned in the anthropological literature (see e.g. Barth, 1967) and was later emphasized by modernization theorists but with very different nuances and clearly distinguished conclusions (see e.g. Lewis, 1955; Meier and Baldwin, 1957; Bauer and Yamey, 1957; Hirschman, 1958; Rostow, 1960). It is also discussed in the field of economic sociology and social network analysis as the downside of strong ties, which are also often referred to as ‘bonding ties’ (Granovetter, 1973, 1983, 1985; Barr, 2002). More recently the aspect has been taken up again by a few economists (see e.g. Platteau, 2000; Hoff and Sen, 2006; Luke and Munshi, 2006). Although these authors admit that family and kin-ship ties can be a vehicle for social contracts of mutual insurance in a context where market for these goods and services do not exist, they argue that family and kinship ties may become an important obstacle in the process of transition. Members of the kin system that achieve economic success in the modern sector may be confronted with sharing obligations by less successful fellows. This may imply to remit money, to find urban jobs or to host them in the city home (see e.g. Hoff and Sen, 2006). The hypothesis is then, that the need to meet such demands can adversely affect the incentives of kin members to pursue and develop their economic activity in the modern sector. Gargiulo and Benassi (1997) argue that strong family and kinship ties may also limit the entrepreneur’s ability to keep control on the composition of his business network and jeopardize his adaptability to changing task environments. Opting out of such kin systems and refusing to comply with these obligations may be possible but may result in strong sanctions and high psychological costs and the kin group may want to prevent this ex ante by manipulate (as in Hoff and Sen’s (2006) model) the relevant exit-barriers.

Platteau, for instance, writes – very drastically – that in tribal societies, in particular, in those which are characterized by strong traditions “the economic success of an individual [may] breed[s] parasitic behaviour, which [...] does not stop until the rich individual is ruined and brought back to the fold” (Platteau, 2000, p. 208). He continues by emphasizing that “the negative effects of traditional norms of generosity and redistribution in terms of incentives to savings and innovations are not confined to the countryside but may also affect modern cities where many proprietors are unable to resist kinship demands to any great extent, especially so in Sub-Saharan Africa” (Platteau, 2000, p. 209). If forced redistribution of this type is widespread it may partly explain the failure of many African micro and small enterprises to grow. As pointed out by Platteau (2000), it might also explain why minority entrepreneurs like the Indians in East Africa and the Lebanese and Syrians in West Africa are often so successful and contribute so crucially to the development of the private sector of that region. In fact, so the argument, these minorities are not directly exposed to requests of relatives and stand outside the complex web of social obligations.

To date, there is very little empirical backup for the existence of negative effects of social networks on entrepreneurial activities. Some related evidence however indicates that the composition and structure of the households matter for capital accumulation, e.g. that larger polygamous households find it more difficult to save and accumulate (Morrison, 2006). Duflo *et al.* (2009) put forward a similar argument, when showing that impatient Kenyan farmers forgo highly profitable investments in fertilizer. The authors argue that the impatience is partly rooted in the difficulty of protecting savings from consumption demands. Di Falco and Bulte (2009) find some evidence that kinship size is associated with higher budget shares for non-sharable goods. They also find evidence that compulsory sharing leads to free riding and attenuates incentives for self-protection against shocks (Di Falco and Bulte, 2010). Lastly, Baland, Guirkinger and Mali (2007) analyze borrowing behaviour and find that some people take up credits even without liquidity constraint – just to signal to their kin that they are unable to provide financial assistance.

In the empirical part of our paper, we focus on internal migrants, i.e. people that moved from the country side (or secondary cities) to the economic capital and started there some form of informal business. We then explore to what extent ties with the family and kin within the city and with those that stayed behind in the villages affect the allocation of resources in the production activity. The ‘new economics of migration’ (e.g. Lucas and Stark, 1985; Stark, 1999) views migration as a part of a general livelihood strategy of families, i.e. family members maximize a joint utility function and decide together to send one or several members to the city either to make use of income earning opportunities and thus to increase household income or as a way to diversify income sources and thus to share risk. Although our empirical framework does not allow looking at the dynamic aspects of migration decisions, our model is such that we do not consider transfers to other family and kin members as per se detrimental to entrepreneurship. We analyze the allocation of resources, such as labour and capital, of entrepreneurs to their production activity. If transfers are made within self-enforcing intertemporal contractual arrangements, we should not observe adverse incentive effects. Migrants would just optimally allocate their available resources and then redistribute out of maximized profits. If however, we find that the intensity of family and kinship ties is associated with a sub-optimal allocation of resources, we take this as evidence that the family may indeed holding back its members from benefiting from market development.

Moreover, recent research suggests that the degree of sharing between migrants and the villagers that stayed behind may be less important than often thought. Beegle *et al.* (2008) for instance use a tracking survey covering households and migrants originated from Tanzania’s

Kagera region. Although they find significant higher consumption growth among migrants compared to those who stayed in the village, they do not find any evidence that migrants and non-migrants smooth their consumption. Households in the village that have one of their former members elsewhere have not more ease to cope with shocks. This even holds for parent-child networks. Moreover, they find that migrants transfer even less than non-migrant split-off households (i.e. children that move out of the parental home but stay close by). Hence, they conclude that migration, at least in this context, does not emerge as a livelihood strategy to cope with risk in the extended family (Beegle *et al.*, 2008).

3. Theoretical framework

3.1 Basic Set up

The following model incorporates the idea that family and kin-ship ties may lead to adverse incentive effects, i.e. we focus only on the potential negative effects and ignore for the moment possible positive effects. The model is a simple static model of an urban household who engages in a non-agricultural production activity.⁴ This model, which draws on a more general version described in detail in Grimm, Lay, Thiele and Wiebelt (2010), takes into account the interdependence of household production and consumption. Hence, inspired by the literature on agricultural households (see e.g. Singh, Squire and Strauss, 1986; Sadoulet and De Janvry, 1995), we assume that urban households can be represented by a model that combines the household and the firm.

For any production cycle, the household is assumed to maximize an increasing and quasi-concave utility function:

$$\text{Max } U = U(X, l), \quad (1)$$

where X denotes consumption of market goods and l stands for leisure, a non-market good. Utility is maximized subject to the following cash income constraint:

$$p(X - Q) + R + wL^h + rK^h + p_v V \leq pF(L, K, V) + wL^m + S \quad (2)$$

$$\text{with } K^h \geq 0$$

where p is the price and $(X - Q)$ the quantity of the market-purchased good. If $(X - Q)$ is positive the household is a net buyer of the good. R stands for transfers paid to other households. R is assumed to be endogenous and is specified below. The household has to pay for hired labour L^h at the wage rate w , for rented capital goods K^h at the rental rate r and for intermediate inputs V (such as raw materials, energy or water) at the unit price p_v . On the right hand side of (2), we have income that is generated through production F and sold at the market price p_i , labour offered on the market at the wage rate w and an exogenous cash endowment S . The cash endowment can result from past savings, transfers received ahead of production from other households or from loans (from formal or informal money lenders). We assume that it is not possible to rent out capital goods.

We assume that expenditures on rented capital and intermediate inputs have to be incurred before production and this requires financial liquidity (or working capital):

⁴ In reality, the household may be engaged in a variety of such activities, run by different individual household members. In our theoretical model, we nonetheless assume that the household only operates a single activity. We return to this issue in our empirical analyses below.

$$S \geq rK^h + p_v V. \quad (3)$$

The cash endowment of the household may suffice to cover these costs or not. Hence, this credit constraint may or may not be binding.

The household also faces a time-constraint, i.e. it cannot allocate more time to work outside the household, production and leisure than is available in the household:

$$E^l = L^o + L^m + l, \quad (4)$$

where L^o stands for informal labour supplied to the own business and E^l is the total stock of household time.

Moreover, the following resource constraints must be satisfied:

$$L = L^f + L^h \quad \text{and} \quad (5)$$

$$K = K^f + K^h. \quad (6)$$

At this stage it is assumed that own informal labour L^f and hired informal labour L^h are perfect substitutes. The same applies to own, K^f , and hired capital, K^h .

We further assume that the household operates with the following increasing and concave production technology:

$$Q = F(L, K, V, Z^h), \quad (7)$$

where Z^h are exogenous household characteristics including those of the owner, such as education and experience. Z^h is assumed to affect the total factor productivity. We make standard assumptions on the marginal products of capital and labour, i.e.

$$\frac{\partial F}{\partial L} > 0, \quad \frac{\partial^2 F}{(\partial L)^2} < 0, \quad \frac{\partial F}{\partial K} > 0, \quad \text{and} \quad \frac{\partial^2 F}{(\partial K)^2} < 0.$$

In this basic set-up we ignore any risk related to production.

Transfers R to be paid to other households are assumed to be a share of the firm's value added, VA (turnover minus the costs for intermediate inputs), i.e. transfers are treated like a tax:

$$R = s VA, \quad \text{with} \quad 0 \leq s \leq 1 \quad (8)$$

with

$$VA = p F(L, K, V, Z^h) - p_v V. \quad (9)$$

We assume that failing to pay R , implies prohibitive social sanctions. In the most general case, the share s that has to be paid (the “tax rate” or “solidarity tax”) depends on egalitarian norms prevailing in the entrepreneur's kin, N , on the size of the kin, T , and on the costs to observe the entrepreneur's profits, C , thus

$$s = f(N, T, C) \tag{10}$$

with

$$\frac{\partial s}{\partial N} > 0, \frac{\partial s}{\partial T} > 0, \text{ and } \frac{\partial s}{\partial C} < 0.^5$$

Our idea is that the kin can easier observe the firm's value added than labour income from the market. This should in particular be true if firms exceed a certain size and thus operate from of a fixed location, exceed a certain level of capital stock and employ non-family labour. Earnings from jobs outside the household are hence assumed to be more difficult to observe for the kin. A civil servant in Ouagadougou told us, for instance, that he prefers to have a motorbike instead of a car, as a car would immediately give a signal to the family that he earns a good salary. Although, the assumption of non-observability might be strong in case of a high-ranking employee in the public sector (even if he foregoes a car to use a normal motorbike), but in the economies we study here less than seven percent are employed in the public sector and of those less than 30 percent are classified as '*cadre supérieur*'. By far, the largest share of employment is in informal firms, often without any written labour contract, any payment statements and any agreement regarding the term of the employment (77.4 percent) (Brilleau, Roubaud, Torelli, 2005).⁶

Again, our theoretical model focuses on the potential negative effects of family and kinship ties. However, positive effects could easily be included by reducing the prices of production factors or by increasing the total factor productivity in the production function.

We assume that all prices in the model (p, p_v, w, r) are exogenously given and not affected by the actions of the household. Thus, the household behaves like a price taker in the four markets.

3.2 Solution under perfect markets

Although the model described above implies one market imperfection – physical capital cannot be rented out – a household can still behave like a profit maximizer. If the credit constraint is not binding, the model is recursive and separability holds. The household hence uses capital and labour such that marginal returns are equal to marginal costs. Note that the marginal returns to capital and labour are net of the remittances that have to be paid to other households. Additional labour and capital is hired at the respective market rates. If family labour endowments exceed the optimal level of labour necessary for production, informal labour is rented out (or additional labour is hired in if more labour is optimal).

Hence, under complete markets, we get the following first-order conditions:

$$(1-s) \frac{\partial Q}{\partial L} = \frac{w}{p} \tag{11}$$

$$(1-s) \frac{\partial Q}{\partial K} = \frac{r}{p} \tag{12}$$

⁵ The model could be extended to allow s also to depend on the level of value added itself (e.g. increasing in value added, i.e. a progressive tax).

⁶ For a detailed analysis of employment vulnerability in the seven West African countries we study, see Bocquier, Nordman and Vescovo (2010).

$$\frac{\partial Q^n}{\partial V} = \frac{p_v}{p} \quad (13)$$

$$\frac{\partial U}{\partial l} \Big/ \frac{\partial U}{\partial X} = \frac{w}{p} \quad (14)$$

It is straightforward to see that the choice variables X and l do not affect the demand for the production factors L and K (provided second order conditions are also met). The maximisation problem is recursive and the maximised value of profits can be substituted in Equation (2), which yields:

$$Y^* = \Pi + \bar{S} + w(L^m + X^l), \quad (15)$$

where Y^* is the value of full income associated with profit-maximising behaviour and Π are profits from the informal business, i.e. value added minus all costs for labour, capital, inputs and made transfers, R . Conditional on full income, households maximize utility, hence the problem is separable. From Equation (14) one can derive the demand equations for X and l as functions of prices (p , w) and full income (Y^*).

In Grimm *et al.* (2010) we discuss solutions under various assumptions on market imperfections. In this paper, we skip this discussion and focus only on the role of family and kinship ties represented by the solidarity tax.

3.3 The role of transfers and the solidarity tax

From Equations (11) and (12) we see that the solidarity tax on value added drives a wedge between the marginal factor products and real factor prices. *Ceteris paribus*, households allocate less labour and capital to production the higher the tax rate s . In the case of labour, this implies that with higher s less labour is hired or more family labour is offered to dependent wage work outside the household.

Value added will hence be lower at higher solidarity taxes and under the assumed neoclassical production technology with decreasing marginal returns this implies that marginal factor products will be higher. Subsequently, we will thus test the following hypotheses: For two otherwise similar households 1 and 2, facing different tax rates s_1 and s_2 , where $s_1 > s_2$, we expect $L_1 < L_2$, $K_1 < K_2$ and $VA_1 < VA_2$.

4. Context and Data

4.1 Context

In this study, we focus on households and entrepreneurs in seven agglomerations in West-Africa: Cotonou (Benin), Ouagadougou (Burkina Faso), Abidjan (Côte d'Ivoire), Bamako (Mali), Niamey (Niger), Dakar (Senegal) and Lomé (Togo). In West-Africa, as in other parts of Africa, the extended family and kinship networks are pronounced and important. For Burkina Faso, Pasquier-Doumer (2010) reports, based on a primary data collection, that social networks are widely used at various occasions in life, for instance to find employment or to fill a position, to find accommodation or to get financial assistance when necessary, in

particular for schooling expenditure, occasional ceremonies or to cope with health problems.⁷ More specific evidence on the role of kinship ties with regard to entrepreneurial activities is provided by Chukwuezi (2001) for the Nigerian case. He shows that urban businessmen from the Igbo in Nigeria remain strongly linked to their rural kin. These ties included a commitment to make transfers to and invest in their rural home communities. These efforts – not their business success – were determining how they were regarded at home. Chukwuezi (2001) also claims that these links have been weakened recently. Younger generations would put less importance on kinship ties and financial demands based on cultural obligations would be seen as a burden rather than an arrangement for mutual benefit. There are numerous examples of how villagers ensure that traditional customs prevail, for example by punishing defecting community members through the denial of a burial in the rural home or exclusion from the community (Chukwuezi, 2001). The sharing obligations of migrants are also illustrated by the following quote from Hessling (2006) of a professor from Benin “It is not formal, but when there is something happening in the village, one of the elders will send me a message and I will help out. So I have to go help. I have to pay my participation. *Obligatoirement, voilà, les formes de solidarité*”. These highly selective pieces of anecdotal evidence illustrate that solidarity and sharing obligations within the family and kinship constitute an important aspect of social and economic life in Western Africa. While designed for the mutual benefit of community members, solidarity norms and rules seem to be (increasingly) perceived as a burden by some. Berrou (2010) indeed finds based on a dataset collected among informal entrepreneurs in Bobo-Dioulasso (Burkina Faso) that family and kinship ties represent only a quarter of all ties entrepreneurs rely on. 74.7 percent of all reported ties refer to business and sociability ties. However, he finds positive effects for both types of ties on value added and earnings. He also emphasizes the role of kinship ties for start-up resources. Interestingly, he states that more educated entrepreneurs appear to rely on weaker ties. This may suggest their capacity to extract themselves from existing community constraints and to develop more flexible ties.

4.2 Data

For our empirical analysis we use a set of surveys called 1-2-3 surveys or in its French synonym ‘Enquêtes 1-2-3’. A 1-2-3 survey is a multi-layer survey organized in three phases and specially designed to study the informal sector (see Brilleau, Ouedraogo and Roubaud, 2005). Phase 1 is a representative labor force survey collecting detailed information about individual socio-demographic characteristics and employment. Phase 2 is a survey which interviews a sub-sample of informal production units identified in Phase 1. The focus of this phase is on the characteristics of the entrepreneurs and their production unit, including the characteristics of employed workers. It also contains detailed information on costs, input use, investment, sales and the unit’s forward and backward linkages. Phase 3 is a household expenditure survey interviewing (again) a representative sub-sample of Phase 1 and hence part of the Phase 2 households. The data of all three phases is organized such that it can be linked. Hence, for a (representative) sub-sample of informal entrepreneurs we have information from Phase 1 and Phase 2 (n=6,580) and, again for a subsample, information from all three phases (n=1,511). Phase 3 is not available for Abidjan, given the onset of violent actions in the country in 2001/02, the third part of the survey could not be undertaken there.

Besides the detail of information, a major advantage of the 1-2-3 survey is that Phase 1 ensures that Phase 2 delivers a representative picture of the informal sector, because being

⁷ These findings are based on interviews conducted in Ouagadougou with financial support by the Institut de recherche pour le développement (IRD).

sampled does for instance not depend on whether the entrepreneur has a fixed location or simply operates a business at home or in a fully mobile way. Thus this survey also includes entrepreneurs who are likely to be overseen in one-stage surveys where the sample population is produced from enterprise sampling frames. The 1-2-3 surveys define informal enterprises as small production units that (a) do not have written formal accounts and/or (b) are not registered with the tax administration. Part (b) of this definition varies slightly between countries, as registration may not always refer to registration with tax authorities. The 1-2-3 surveys do not apply a size criterion.⁸

Focusing on informal enterprises means of course ignoring all formal enterprises and in particular ignoring firms that are larger in terms of their labor force and their capital stock and that probably show, on average, a better growth performance. However, as shown in previous work using the same data (see Grimm *et al.*, 2010), heterogeneity among informal firms in terms of capital stock and performance (for example, capital returns) is likely to be sizeable enough to shed light on the effects of family and kinship ties.

We focus on internal migrants, i.e. entrepreneurs that migrated from rural areas or secondary cities to the economic capital and started an informal business. Analyzing urban migrants has the advantage of looking at entrepreneurs that usually have two different types of family and kinship ties; one located at their destination and one located at their point of departure. The latter is often heavily marked by traditional norms and values. Comparing the role of both will provide interesting insights. In some steps of our analysis we will even limit the sample to recent migrants and exclude those that are already for a long time in the city. The latter may resemble more the non-migrants and may thus bias the results for migrants. The number of years a migrant is already located in the capital will also be one of the features characterizing firms that we will look at.

In line with our theoretical model, and with standard practice in the literature on agricultural households,⁹ we use the household as the observation unit. Hence, we aggregate all enterprises in a given household into one single enterprise. This aggregation is done as follows: We define the main firm in the household as the firm that generates the highest value added. Then we add within each household total labour, total capital and total value added. Regarding all other characteristics such as the sector of the firm and characteristics of the owner, we keep the values from the main firm. There may be various reasons why a household owns several enterprises. Diversifying entrepreneurial activities may represent an optimal portfolio choice in the presence of activities with different expected returns and associated risks. Enterprises may also belong to different household members that do not necessarily pool their resources. Finally, splitting activities may serve as a strategy to avoid 'taxes' or demands from the extended family, because it is easier to hide several smaller enterprises than one large enterprise. Moreover, Camilleri (1996) provides anecdotic evidence that successful entrepreneurs employ their kin in peripheral firms to keep them away from the main and productive activity. The two latter aspects will make it particularly interesting to test whether the number of enterprises in the household - controlling for value added - has any effect on the amount of transfers given to other households.

⁸ For a detailed presentation of the data, see Brilleau, Ouedraogo and Roubaud (2005).

⁹ The standard practice in the literature dealing with agricultural household models is to assume that plots within household can be aggregated irrespective whether they are cultivated or not by the household head.

4.3 Descriptive Statistics

Table 1 presents descriptive statistics of the migrant entrepreneurs, their enterprises and the households they belong to. Again, several enterprises within the same household are aggregated to one single enterprise. On average, the households in the sample have 1.3 enterprises.

[Table 1 about here]

We see that about half of all entrepreneurs in our sample are men, they are on average 38 years old, about 43 percent of them speak French. 72 percent do not have any diploma, 18 percent have completed primary school and only 10 percent have a diploma from a general or vocational secondary school or higher. We also coded a variable for ethnicity. In ethnic group '1' are those entrepreneurs who belong to the largest ethnic group in their country. Ethnic group '2' are those who belong to the second largest group and so on. One can see that about 80 percent of all entrepreneurs fall into one of the three largest groups in their country.

The next block in Table 1 reports the activity portfolio of the entrepreneur's household. These portfolios consider all primary and secondary activities of all household members. About 79.5 percent of all entrepreneurs live in households that only run one or several informal firms. In some of these households, one or several household members are additionally engaged in some dependent informal wage work. Only 19.8 percent of all entrepreneurs live in households that have in addition to their enterprise at least one wage worker in the public sector (9.7 percent) or in the formal private sector (10 percent). The activity portfolio is a potential important factor of firm performance, as it may influence the capacity to save, to take a loan and to invest. It may also determine the business' network size and shape the relation to the public sector and hence affect access to public services and exposure to corruption.

The mean age of these enterprises is about 8.6 years. Table 1 also shows the distribution across sectors and countries. The largest sector is 'petty trading'. The smallest sectors are 'transport' and 'repair services', which are both rather capital intensive. In terms of countries, the sample is uniformly distributed given that the surveys all had similar sample sizes, except for Niger, which is a little bit smaller. The average annual value added is about 5,600 Intl. 2005 \$ PPP. Entrepreneurs work on average 225 hours per month in their enterprise. In total, they use about 381 hours of labour per month. Mean employment is about 1.9 including the owner and, on average, only one out of four enterprises hires a paid employee. 14 percent of all enterprises do not report any invested physical capital. Hence, it is not surprising to see that the mean capital stock for the lower third in the distribution of capital is just about 10 Intl. 2005 \$ PPP. The capital stock of the middle third is about 125 Intl. 2005 \$ PPP and the capital stock of the top third is about 3,000 Intl. 2005 \$ PPP.

4.4 Measures of the potential intensity of family and kinship ties

From our data set, we have derived the following proxies of the potential intensity of family and kinship ties, which in turn should determine the size of the solidarity tax, s . First, the share of the population from the same ethnic group in the cluster in which a household resides. This share is computed from Phase 1 using population weights such that it exactly reflects the true share in the total population. Clusters correspond to neighbourhoods in each of the agglomerations represented in our sample. There are about 125 per country (city) and they cover a population from about 300 up to 35,000. This measure of ethnic concentration is an obvious measure of the potential intensity of family and kinship ties. The higher the

concentration of the own kin-group in the neighbourhood, the higher the pressure to share earnings might be. However, a higher concentration of the own-kin group may also mean more support for *own* entrepreneurial activities. Hence, it is an empirical question whether these positive effects dominate or whether the above model that claims a negative effect is more in line with observations. Most likely both effects will be at work, probably off-setting each other to some extent. This would imply in turn that we will assess the ‘net effect’ of family and kinship networks in our empirical analysis. We also have to be aware of the fact that this first social network proxy cannot be considered as fully exogenous given that location is a choice. Our second proxy for the potential intensity of family and kinship ties is the share of the population in a cluster that grew up in the same area as the enterprise owner – i.e. in the same region or district of the country. Again we assume that the higher the share the higher the potential pressure for redistribution. But here again, the measure will capture both the potential negative and positive effects of these ties. Third, we use the geographical distance to the entrepreneur’s region or district of origin (regional or district capital). We compute this distance for every entrepreneur using geographical maps. We assume that a longer distance makes it more difficult and costly to observe the entrepreneur’s activities and productivity and hence redistributive pressure is supposed to decline with distance. Moreover, the costs of making transfers may also increase with distance in the absence of any formal banking system. However, this should not affect the amount that is transferred but rather the decision to transfer and the frequency of transfers. Obviously, positive social network effects should also decline with distance. Ideally of course one would like to have the travel time or the travel costs. However this would need to be collected in the field and hence is left for a future version of this paper.¹⁰ Fourth, we use the number of years a migrant is already in the capital. The idea behind is that family and kinship ties may not only erode with distance but also with time – an ‘out of sight, out of mind’ effect.¹¹ Fifth, we also use population density and the total fertility rate in the area of origin to measure the potential size of the kin. Population density is taken from census data and the total fertility rate from Demographic and Health Survey (DHS) data with data sources as close as possible to the 1-2-3 survey year.¹² Whenever relevant, we control for ethnicity in our analysis, i.e. if we focus on the distance measure we compare two individuals from the same ethnic group living in different distance to his or her village of origin. Table 2 shows the descriptive statistics for these variables.

[Table 2 about here]

The average of the shares of the population from the same ethnic group within clusters is 37 percent, however with a large standard deviation of 27 percent. The average of the population share having the same area of origin is with 3.8 percent much smaller. Here as well, the standard deviation is relatively high (4 percent). The distance to the area of origin is on average 189 km. Population density in the area of origin is about 300 inhabitants per km². Here again the variance across observations is high. The total fertility rate is about 5.9 children per women (standard deviation 1.1).

¹⁰ However, we made this exercise for Burkina Faso and found a rank correlation coefficient of more than 75% between distance and travel time and distance and travel costs.

¹¹ Stark (2009) discussed alternative reasons for a gradual erosion of remittances. First, it is possible that on a schedule of declining marginal gains from remittances outflows, migrants reach the point at which the marginal gain from a dollar remitted is equal to the marginal gain from a dollar retained (and invested at destination). Second, a second migrant may follow the first migrant with the help of the first migrant’s remittances. Once, the second migrant is settled and starts to remit as well, the first migrant can reduce remittances. Third, migrants may remit more in the beginning to provide start-up capital for investments in the village; once, these investments generate benefits, the migrant can reduce remittances.

¹² See <http://www.measuredhs.com/>.

Table 3 reports pairwise correlation coefficients between the proxies of the potential intensity of family and kinship ties and different forms of transfers. The 1-2-3 surveys asked households to report what they have transferred to and received from other households in cash or in kind. In-kind transfers are given in self-estimated money values. It is important to remember that the sample used in this section is relatively small, because transfers were recorded in Phase 3 of the 1-2-3 surveys, which covers only a (representative) sub-sample of all entrepreneurs surveyed in phase 1 and 2. Moreover and as already mentioned above, Phase 3 was not conducted in Côte d'Ivoire.

The results in Table 3 show that the share of people in the neighbourhood belonging to the same ethnic group is significantly positively correlated with given transfers. It is also positively correlated with received transfers but this correlation coefficient is statistically insignificant. The share of people in the neighbourhood coming from the same area of origin is positively correlated with given transfers, negatively correlated with received transfers and positively correlated with net transfers, i.e. 'given' minus 'received' transfers. However, only the latter is statistically significant. Distance to the area of origin is statistically negatively correlated with given and received transfers. This is consistent with the hypothesis that distance dilutes family ties and hence the further away the less is transferred. The time a migrant is already in the economic capital is positively correlated with received transfers and negatively with net transfers, i.e. the longer a migrant is already in the city the less is transferred to other households. However, two comments about these correlations are in order. First, transfers are usually difficult to measure, given their irregular nature and the fact that they are often done in-kind. Hence, measurement errors are certainly important and downward bias the correlation coefficients. Second, obviously, these are unconditional correlations, so if the theory above is true, that is that redistributive pressure has adverse incentive effects then we do not expect this correlation to be strong since entrepreneurs that are exposed to high pressure would reduce their effort level, generate less value added and therefore would have to transfer less to other households.

[Table 3 about here]

In Table 4 we relate given transfers to value added. We use two specifications, a simple OLS model (col. (1)) and a tobit model (col. (2)), given that some entrepreneurs report no transfers at all. The OLS model yields a highly significant coefficient, suggesting that an increase of value added by one percent leads to an increase in given transfers by 0.18 percent. The tobit model yields a somewhat smaller and insignificant coefficient ($p=0.139$). We control in these regressions for gender and age of the owner of the firm, household size, ethnicity, the activity portfolio of the household and country effects. In columns (3) and (4) we use instead of value added, total household income as reported in phase 3 and add the share of earnings from dependent informal work and dependent formal work to the list of control variables. The propensity to transfer out of household income is again positive, as expected. The coefficient is even a bit higher as the one associated with value added. The coefficient associated with the share of informal earnings, is as our theoretical model predicts negative, i.e. the higher the share of informal earnings in total earnings the less is transferred. This is consistent with the idea that it is easier to hide earnings that comes from an activity outside the household where it is difficult to observe for others how much income has been generated. The results from the OLS model in column (3) suggest that an increase of the share of informal earnings in total earnings by 10 percentage points is associated with a decline of given transfers by 23.8 percent holding constant total earnings.

[Table 4 about here]

5. Redistributive pressure, capital accumulation, labour demand and the owner's effort level

5.1 General results

In this section we examine whether the potential intensity of family and kinship ties has any adverse incentive effects. We focus on three different inputs into (informal) household production of market goods: physical capital, K , total number of employed working hours (including those provided by the owner), L_i^T , and working hours provided by the owner alone, L_i^O . In the appendix we show (Table A1) that these factors are indeed positively related to value added, i.e. they are relevant production inputs in our context. Assuming a simple Cobb-Douglas-production technology, we find a reasonable order of magnitude for the estimated partial production elasticities. An increase in physical capital by one percent leads, depending on the exact specification, to an increase of value added by about 12 percent. The return to total hours of labour supplied is about 58 percent. In these estimations, we control again for gender and age of the owner of the firm, household size, ethnicity, the activity portfolio of the household country effects and now also sector effects. For the reasons given below we run the estimations over two different samples; all entrepreneurs and those that are in the economic capital for 15 years and less (for some case discussed below also five years and less). Again if the marginal returns to capital are computed at different points of the capital distribution, we find very high returns for low levels of capital and rather moderate returns at high levels of capital. This is documented in detail in Grimm *et. al.* (2010) and motivates this paper (see Introduction). Why are these high marginal returns not re-invested and move more small firms to the upper tail of the capital distribution?

To examine the possibility of adverse incentive effects, which, again, we assume to act via reduced input use in the household's production activity, we run the following three regressions:

$$\log K_i = \beta_{K0} + \beta_{K1}P_i + X'_{ji}\beta_{K2} + Z'_i\beta_{K3} + S'_i\beta_{K4} + C'_i\beta_{K5} + \mathcal{G}_{Ki}, \quad (16)$$

$$\log L_i^T = \beta_{LT0} + \beta_{LT1}P_i + \beta_{LT2} \log K_i + X'_{ji}\beta_{LT3} + Z'_i\beta_{LT4} + S'_i\beta_{LT5} + C'_i\beta_{LT6} + \mathcal{G}_{LTi}, \quad (17)$$

$$\log L_i^O = \beta_{LO0} + \beta_{LO1}P_i + \beta_{LO2} \log K_i + X'_{ji}\beta_{LO3} + Z'_i\beta_{LO4} + S'_i\beta_{LO5} + C'_i\beta_{LO6} + \mathcal{G}_{LOi}, \quad (18)$$

where P_i is the vector of variables used to measure the potential intensity of family and kinship ties faced by household i . X_{ji} is a vector of characteristics specific to the entrepreneur j residing in household i , such as age, gender, education and migrant status. Z_i is a vector of household characteristics such as ethnicity and the activity portfolio of the household. The vectors S_i and C_i control for sector and country effects respectively. Controlling for sector effects is important here, since production technologies are likely to differ between sectors. For instance, petty trade is less capital intensive than most transport services. Moreover, sector choice may, in turn, be correlated with (perceived) redistributive pressure. The terms \mathcal{G} are the respective error terms. Another more fundamental question is of course whether the data can be pooled across sectors and countries, despite the relative large homogeneity of these countries that are all members of the WAEMU. These tests will be done in future versions of this paper.

When running the regressions (16) – (18), we always correct standard errors for intra-cluster correlations. In total there are 558 clusters in Phase 2. To reduce a bias due to measurement and reporting errors, we trim the data and drop influential outliers from our sample that we identify by the DFITS-statistic. As suggested by Belsley, Kuh, and Welsch (1980), we use a cutoff-value $|DFITS|_{ihj} > 2\sqrt{k/N}$ with k , the degrees of freedom (plus 1) and N the number of observations. Depending on the estimation, this procedure removes between 25 and 100 observations from our sample.

In what follows, we discuss the results of each regression. We start with the model that tests for the effects of the potential intensity of family and kinship ties on the total stock of physical capital used. Given that entrepreneurs may accumulate physical capital in particular in the beginning of their activity, we estimate the model for those migrants that are for less than five years (col. (1) and (2)) and less than 15 years in the economic capital (col. (3) and (4)). This should reduce the problem of measurement error and increase the homogeneity of the sampled migrants. The results are shown in Table 5. The first specification uses a simple linear regression model (Columns (1) and (2)). The second specification uses a tobit model (Columns (3) and (4)) to account for the fact that 13.6% of all entrepreneurs do not use any physical capital.

[Table 5 about here]

The results show that the total capital stock is higher for enterprises owned by men than for women and it increases with age. Education is not significant in most cases Knowledge of French enters significantly only in the larger sample. There are no significant effects associated with other activities in the household, i.e. the capital stock is not significantly higher in households that also get earnings from dependent wage work in the public or private formal sector. This may surprise, but in these households the informal firm seems in most cases to be a secondary activity and hence investments are kept at a relatively low level. Sector effects are highly significant (coefficients not shown in Table). As one can expect particularly capital intensive is the transport sector. Petty trade, in contrast, uses only very little capital. Country effects were also included but are also not shown here. Overall, the OLS regressions explain about 20 percent of the total variance in observed capital stocks, showing what is well known in the literature that explaining investment and capital stocks for small and medium scale entrepreneurs is not straightforward, because of both the role of unobservables and measurement error and also because of the irregularity with which such investments occur.

The variables used to measure family and kinship ties, our main variables of interest, are only significant in the smaller sample, i.e. when focusing on recent migrants and then only the effects associated with distance (col. (1) and (2)), which, again, we take as a measure of the potential intensity of the ties linked to the village of origin. In contrast, effects potentially associated with local family networks, i.e. kinship density in the neighbourhood, are insignificant. The positive coefficient of the distance variable is consistent with the idea that redistributive pressure and the related adverse incentive effects get diluted with distance. The further away an entrepreneur is from the family, the higher the investment in the production activity. The estimates in columns (1) and (2) suggest for instance that an increase of the distance from 100 km to 200 km implies an increase in the size of the used capital stock by about 30 percent, which economically is an important effect. Here again it is interesting to refer to the paper by Beegle *et al.* (2008). They found for Tanzania a positive effect of distance on consumption growth, i.e. migrants that were further away from their village of origin knew higher long-term consumption growth than those that stayed closer. They

interpreted this effect as the result of a positive correlation between favourable work and business opportunities and distance, i.e. the larger the migration radius the higher the potential returns from migration. However, they also show that migrants share less than their non-migrant counterparts, controlling for household fixed effects, i.e. migrants transfer less than their brothers that stayed at home. This finding is also consistent with a situation in which adverse incentive effects decline with distance and in which distance helps to protect savings for profitable investments. In our case, we consider only migrants that went to the economic capital, so the potential pool of business opportunities is held constant for a given country only distance varies across migrants. What could however drive our results is that distance may be correlated with unobserved characteristics of entrepreneurs, in a sense that high ability entrepreneurs are willing to migrate further. If these (unobserved) abilities also drive investment in physical capital, then the positive effect of distance may just pick up the effect of abilities. Below we undertake some robustness checks in order to rule out this possibility.

Next, we turn to the regressions that explore the effects of redistributive pressure on the total amount of working hours in the enterprise (Table 6). Again, we use two different samples. A sample that is limited to entrepreneurs that are less than 15 years in the capital (cols. (1)) and a sample with all migrant entrepreneurs (cols. (2)). Given that we look now at a flow and not stock measure, recall bias is not a problem anymore and hence there is no need to limit the sample to very recent migrants. We find that firms owned by men employ more labour. The use of labour also increases with the size of the capital stock. Age, knowledge of French, education and the household's activity portfolio are not significant. However, there are interesting effects associated with the three measure of the potential intensity of family and kinship ties. The share of people in the neighbourhood that belong to the same ethnic group than the entrepreneur has a positive effect. Likewise the share of the population in the neighbourhood that grew up in the same area of origin also has a positive effect. However, being closer to the area of origin has a significant negative effect, i.e. the coefficient associated with distance is again positive. The effects differ not much between both samples. An increase of the share of people in the neighbourhood belonging to the same ethnic group by 10 percentage points increases the amount of labour hours used by 2.8 percent. Evaluated at the sample mean this implies approximately 10.7 hours per month. If the proportion of people that share the same origin is increased by 1 percentage point (sample mean is about 3.8 percent) labour hours employed increases by 1.4 percent. An increase of distance by 100 percent is associated with an increase of employed labour hours by about 6 to 9 percent. Hence, the interesting finding here is that family and kinship ties tied to the city are associated with positive effects – the exact channels need to be investigated – whereas family and kinship ties tight to the village are associated with negative effects. These findings hinge of course upon the quality of our measures of the potential intensity of such ties.

[Table 6 about here]

Finally, we explore the effects of family and kinship ties on working hours provided by the owner alone. Again we find that social networks within the city are positively correlated with working hours. For instance, an increase by ten percentage points of the share of people in the neighbourhood belonging to the same ethnic group increases the owner's labour hours by about 1 to 2 percent, which corresponds at the sample mean to about 3 to 5.5 hours per month. Or, if the share of the population from the same area of origin increases by 1 percentage point, working hours increase by about 0.7 percent or about 2 hours at the sample mean. Again, we also find positive effects associated with distance to the area of origin. Owners further away from their area of origin use more of their time for their production activity, which again is consistent with the idea that redistributive pressure from the family reduces incentives. For

instance, a decrease in the distance by 100 percent, decreases labour hours provided by the owner by about 4 percent or 11.5 hours at the sample mean. Hence, an entrepreneur who is exposed to strong sharing obligations may deny an additional order towards the end of the month, if he or she feels that the return would anyway need to be shared with the extended family. The estimations using total labour on the one hand and total labour by the owner on the other hand are also consistent, in a sense that the estimated coefficients are higher when total labour is used; adverse incentives affect both, own and hired labour. If only own labour would be affected the coefficient associated with total labour should be smaller.

5.2 The effects of splitting up enterprises

As explained above, in our analysis we aggregated all enterprises in a given household into one single enterprise. We briefly discussed the various reasons why a household may own several enterprises, such as diversification to reduce risk and the absence of income pooling among household members. However, we also evoked the possibility that splitting up enterprises may be a strategy to avoid or reduce ‘taxes’ and demands from the extended family, because it is easier to hide several smaller enterprises than one large enterprise. Camilleri (1996), for instance, reported anecdotic evidence that successful entrepreneurs employ their kin in peripheral firms to keep them away from the main and productive activity. In this subsection we look at the correlation between the number of firms and transfers given to other households. We estimate a simple regression of the following form:

$$\log T_i = \beta_{T0} + \beta_{T1}VA_i + F_i\beta_{T2} + X_{ji}'\beta_{T3} + Z_i'\beta_{T4} + \beta_{T5}C_i + \mathcal{G}_{Ti}, \quad (19)$$

where T_i stands for given transfers in household i , VA_i for value added, F_i for the number of firms in household i , X_{ji} is a vector of characteristics specific to the entrepreneur j residing in household i , such as age, gender, education and migrant status, Z_i is a vector of household characteristics such as ethnicity and the activity portfolio of the household (e.g. whether one or several members of the household work in the public or private formal sector) and C_i stands for country-specific effects.

[Table 7 about here]

Table 7 shows the results. It can be seen that having two firms compared to having only one firm is clearly associated with lower transfers controlling for value added of the firm. The effect associated with having three firms is not statistically different from having only one firm, but this may be due to the fact that many households have two firms (17.2 percent) but only few have more than two firms (3.5 percent). The results are thus consistent with the idea that splitting up enterprises is an effective way to reduce transfers to other households. It would also explain why we find in the given context so many small firms, many of them highly productive. It would imply that benefits are rather invested in new firms than in existing ones.

5.3 Robustness checks

We mentioned above that one of the caveats in our analysis related to the distance variable is that distance may be correlated with unobserved characteristics of entrepreneurs, in a sense that high ability entrepreneurs are willing to migrate further. If these (unobserved) abilities also drive investment in physical capital and the use of labour input, then the positive effect of distance may just pick up the effect of abilities. To rule out this possibility, we re-estimate equations (16) to (18) for various sub-samples that are limited to entrepreneurs that migrated

at least a certain distance away from their area of origin. The idea is that a migrant who is, say 5km away from his original home may indeed largely differ in observables and unobservables characteristics from a migrant who is 100 km away, but that a migrant who is 100 km away is not very different from a migrant who is 200 km away. In other words the relationship between distance and these unobserved characteristics is likely to be non-linear. We show the results of this exercise graphically (Figure 1). With respect to the capital stock (Figure 1a), we see that the effect associated with distance is robust, it even increases if we limit the estimation to entrepreneurs that are at least 75 km or more away from their area of origin. Only if we chose a very high threshold (150km and more) the effect is reduced again and in fact becomes insignificant. But this is mainly due to the fact that the sample size then becomes of course very small and hence coefficient cannot be estimated very precisely. The results for total hours of labour used and hours provided by the owner are very similar (Figures 1b and 1c). The estimated effects are very robust and stay positive over a wide range of distances. Hence, we are quite confident that distance does not just capture a difference in effort-related unobservables between those internal migrants that stay close to their original home and those that migrate far.

[Insert Figure 1]

Another aspect should be kept in mind. We only look at migrants that decided to migrate to the economic capital of their country. We may assume that this decision is often taken whatever the distance to the capital is. In other words migrants do not so much choose between places of different distance to their home, but rather whether they migrate to one of the secondary cities or to the economic capital. In particular in our sample of West-African countries which more or less all have one major large urban centre and otherwise only smaller secondary cities and towns the differences between both types of destinations are quite pronounced. Hence, we may argue that all those that opted for the economic capital share some common unobservable characteristics, and hence the potential bias associated with our distance measure may be relatively small.

7. Conclusion

Previous research has shown that in many low and middle income countries micro and small entrepreneurs achieve relative high marginal returns to capital but show only very low re-investment rates. We evoked a couple of possible explanation for this observation, one of which is the role of forced redistribution that prevents entrepreneurs from saving and investing. ‘Forced redistribution’ is in the anthropological and sociological literature prominently discussed and often presented as a typical feature of Sub-Saharan African societies. However, there is only little empirical analysis that would allow judging whether forced redistribution is really an obstacle to economic activities in that region. In this paper we focus on family and kinship ties and how such ties help or not micro and small entrepreneurs in Western Africa to develop their business. We start from a relatively simple theoretical model in which households consume and pursue different income generating activities, mainly the production of goods and services and the engagement in dependent wage work outside the household. Value added of the household business is subject to a solidarity tax imposed by the household’s kin-group. We assume that the size of this tax depends on the distributional norms prevailing in the relevant kin group, the size of the kin and the costs for the kin to observe the enterprise’s profit. The model implies that with an increasing ‘tax’, fewer resources will be allocated to the household business.

We then proceed exploring whether this hypothesis is consistent with empirical evidence. Using a sample of migrant entrepreneurs, i.e. migrants from the country side or secondary cities that joined the economic capital and work as an (informal) entrepreneur, we test whether the intensity of family and kinship ties is negatively correlated with the labour and capital inputs used for the entrepreneurial activity. We use four variables to measure the intensity of family and kinship networks: first, the share of the population from the same ethnic group in the cluster in which the entrepreneur resides; second, the share of the population in the respective cluster that grew up in the same area as the entrepreneur – i.e. in the same region or district of the country; third, the geographical distance to the entrepreneur's region or district of origin; and, fourth, the number of years a migrant is already in the capital. To avoid endogeneity problems, it is important to focus on potential pressure and not on actual pressure, which would for example be reflected in actually paid transfers or the number of non-relatives in the household.

Regarding the use of labour inputs, i.e. total labour and labour supplied by the owner, we find that local family and kinship-ties enhance the use of that resource. We do not find any correlation with the use of physical capital. However, distance to the area of origin of the migrant, which we interpret as a proxy for the intensity of the links with the family and the kin in the village of origin suggests throughout that looser ties are correlated with a more intense use of both physical capital and labour. Although, we are not in a position to make any causal claims, this finding is at least consistent with the hypothesis that redistributive pressure tight to the village leads to adverse incentive effects. These adverse incentive effects seem to be diluted with distance. Greater distance from home seems to make it easier to protect savings from abusive demands and to invest. We can at least rule out that this result is driven by unobservables that would determine both the willingness and ability to migrate far and the ability to run an enterprise. We find also weak evidence that the duration a migrant left the village controlling for the enterprise's age, is positively correlated with the use of capital and labour. Beegle *et al.* (2008) showed for the case of Tanzania that distance is positively related to the benefits of migration and that migrants transfer less than their siblings that stayed in the village. Although their focus is not on forced solidarity, but on the benefits of migration and risk sharing, these results are consistent with the findings here.

We also show that, controlling for total income, migrants that draw their income from several enterprises transfer less to their families than those that manage only one firm. This is consistent with the hypothesis that some entrepreneurs rather invest in several activities that can easily be hidden, than in one single large firm that would then send a clear signal of entrepreneurial success to the entrepreneur's kin. It would also partly explain why we see so many small firms with less than two or three employees and only few larger firms. We also provide evidence, in line with our theoretical model, that the propensity to remit out of profits is larger than out of wages. Suggesting that the latter can more easily be hidden and that potential entrepreneurs feeling themselves exposed to intense redistributive pressure rather use a larger share of their labour for an activity as a wage worker.

One may of course argue that remittances from urban migrants to the village are part of the migration contract and serve to pay back the costs of migration. Although we definitely do not deny the existence of such payments, they do not invalidate our conclusions. If such a contract is concluded in a form that it implies adverse incentive effects the contract is inefficient and the inefficiency would need to be addressed. If such adverse incentive effects are not inherent in such contracts, we would expect that migrants just maximize their profits, i.e. use their resources optimally, and then redistribute part of their profits to the family. Coleman (1990) noted that reciprocity is more than repayment, it is a norm that prescribes a certain type of

behaviour towards relevant others. The fact that we find that family and kinship ties within the city enhance the amounts of labour and capital used for production suggest that these ties are rather build on mutual support. The exact nature of these ties need to be studied in future work, but it is likely that they share similar features with the broader concept of social capital and hence may provide for instance credit, insurance and access to clients and markets.

Obviously, one should be careful to draw direct policy implications from these findings. They raise the issue of the compatibility of traditional norms with modern economic development and thus lead to a debate that has marked quite significantly modernisation theory fifty years ago. However, the newer literature suggests that such norms should be considered as largely endogenous and hence as more and more people see the benefits of stepping out of traditional kin-based support networks and as more formalized insurance mechanisms become more widespread the negative forces of family and kinship ties may loose their importance. The effects related to family and kinship ties in the city suggest that such ties have the potential to enhance entrepreneurial activity. If future research investigates further the underlying mechanisms, policy can try to mimic such support networks for those entrepreneurs that are outside such networks.

We end with word of caution. This paper should be seen as an attempt to conceptualize the positive and negative effects of family and kinship ties in the context of African entrepreneurs. The empirical evidence, although fully consistent with our theoretical considerations, is based on cross-sectional data, which obviously makes it difficult to deal adequately with unobserved heterogeneity; a problem that may be particularly important in our context.

Appendix A

Regression of value added on factor use

[Table A1 about here]

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Tables and Figures

Table 1: Descriptive statistics

	Mean	S.D.
<i>Owner characteristics</i>		
Male (=1)	0.509	0.500
Age owner	38.4	11.4
Speaks French (=1)	0.434	0.496
No diploma	0.718	0.450
Primary completed	0.179	0.383
Some secondary	0.048	0.214
Other post primary	0.055	0.228
Ethnic group 1	0.420	0.494
Ethnic group 2	0.184	0.388
Ethnic group 3	0.195	0.397
<i>Household characteristics</i>		
Household size	6.3	4.2
Only informal firm	0.795	0.404
Public wage earner	0.097	0.296
Private formal wage earner	0.100	0.300
Other combination	0.008	0.092
<i>Firm characteristics</i>		
Age of firm	8.6	8.6
Clothing and apparel	0.096	0.294
Other manufact. and food	0.143	0.351
Construction	0.087	0.282
Wholesale/retail shops	0.114	0.318
Petty trading	0.272	0.445
Hotels and restaurants	0.073	0.261
Repair services	0.053	0.225
Transport	0.052	0.221
Other services	0.110	0.314
Ann. VA in intl.\$ PPP	5556	28459
Monthly hours owner	225	127
Total monthly hours	381	379
Total staff incl. owner	1.891	1.566
Hired paid staff	0.241	0.864
No physical capital (=1)	0.126	0.332
Physical. cap. in intl. \$ PPP	1029	3647
Physical cap. (lowest 33%)	11	12
Physical cap. (middle 33%)	127	75
Physical cap. (highest 33%)	2953	5865
No. of firms	1.3	0.6
<i>Country</i>		
Benin	0.159	0.366
Burkina Faso	0.141	0.349
Cote d'Ivoire	0.162	0.368
Mali	0.178	0.383
Niger	0.062	0.241
Senegal	0.128	0.335
Togo	0.169	0.375
<i>N</i>	2369	

Source: 1-2-3 surveys, WAEMU, 2001/02.

Table 2: Proxies of the potential intensity of family and kinship ties

	Mean	S.D.
Share same ethnic group	0.373	0.266
Share same origin	0.038	0.043
Distance to origin	188.5	169.4
Time since migration	17.7	11.7
Pop. density at origin	308.3	558.9
Total fertility rate at origin	5.9	1.1
<i>N</i>		2369

Source: 1-2-3 surveys, WAEMU, 2001/02.

Table 3: Transfers, family and kinship ties

	Ln transfers given	Ln transfers received	Net transfer
Share same ethnic group	0.158* (0.000)	0.048 (0.247)	-0.037 (0.370)
Share same origin	0.065 (0.116)	-0.031 (0.456)	0.072* (0.086)
Ln distance to origin	-0.126* (0.002)	-0.082* (0.049)	0.039 (0.352)
Years since migration	0.062 (0.139)	0.1311* (0.002)	-0.103* (0.014)

Note: * significant at 10%. Significance level in parentheses.

Source: 1-2-3 surveys, WAEMU, 2001/02.

Table 4: Firm's performance, sources of household income and transfers given

	(1)	(2)	(3)	(4)
	OLS	Tobit	OLS	Tobit
Ln value added	0.175*** (0.065)	0.139 (0.097)		
Ln total household income			0.334** (0.146)	0.499* (0.261)
Share of income from dep. inf. work			-2.378*** (0.831)	-3.771** (1.483)
Share of income from dep formal work			0.579 (0.754)	0.866 (1.108)
Male (=1)	-0.037 (0.262)	0.025 (0.418)	-0.117 (0.296)	-0.250 (0.458)
Age owner	-0.001 (0.012)	-0.000 (0.018)	0.003 (0.015)	0.009 (0.021)
Household size	0.064* (0.036)	0.091* (0.055)	0.018 (0.038)	0.012 (0.062)
Ethnic group 1	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Ethnic group 2	-0.122 (0.418)	0.229 (0.648)	0.537 (0.525)	0.884 (0.757)
Ethnic group 3	-0.314 (0.329)	-0.027 (0.571)	0.122 (0.445)	0.239 (0.635)
Only informal firm	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Public wage earner	0.798** (0.359)	0.905 (0.624)		
Private formal wage earner	0.770* (0.463)	0.689 (0.757)		
Other combination	3.798*** (0.527)	4.002* (2.234)		
Country effects	Yes	Yes	Yes	Yes
Intercept	2.600*** (0.701)	1.684 (1.134)	2.292** (1.106)	0.599 (1.788)
R-squared	0.123		0.078	
N	562	580	393	393

Notes: Robust standard errors in parentheses (clustered at the segment level). * p<0.10, ** p<0.05, *** p<0.01
Source: 1-2-3 surveys, WAEMU, 2001/02.

Table 5: Family and kinship ties and entrepreneur's use of physical capital

	(1)		(2)		(3)		(4)	
	Migrants, 5 years and less in the capital		Migrants, 15 years and less in the capital		Migrants, 15 years and less in the capital		Migrants, 15 years and less in the capital	
	OLS	Tobit	OLS	Tobit	OLS	Tobit	OLS	Tobit
Share same ethnic group	0.310 (0.549)	0.291 (0.581)	0.158 (0.347)	0.170 (0.359)				
Share same origin	0.464 (3.105)	0.370 (3.085)	0.271 (1.972)	0.062 (1.803)				
Ln distance to origin	0.263* (0.152)	0.316* (0.161)	0.002 (0.089)	0.009 (0.098)				
Years since migration	0.032 (0.067)	0.042 (0.083)	0.033** (0.016)	0.036** (0.017)				
Male (=1)	1.061*** (0.316)	1.118*** (0.337)	0.878*** (0.178)	0.917*** (0.197)				
Age owner	0.041*** (0.014)	0.047*** (0.015)	0.032*** (0.008)	0.036*** (0.010)				
Speaks French (=1)	0.297 (0.345)	0.384 (0.388)	0.341* (0.182)	0.364* (0.219)				
No diploma		(Ref.)		(Ref.)				(Ref.)
Primary completed	-0.529 (0.391)	-0.753* (0.443)	-0.212 (0.220)	-0.300 (0.241)				
Some secondary	-0.218 (0.743)	-0.355 (0.770)	-0.282 (0.347)	-0.357 (0.383)				
Other post primary	-0.718 (0.710)	-1.051 (0.678)	-0.328 (0.369)	-0.485 (0.377)				
Ethnic group 1		(Ref.)		(Ref.)				(Ref.)
Ethnic group 2	-0.700* (0.399)	-0.868* (0.503)	-0.524** (0.215)	-0.586** (0.249)				
Ethnic group 3	0.030 (0.311)	0.068 (0.353)	-0.084 (0.180)	-0.086 (0.211)				
Age of firm	-0.011 (0.023)	-0.019 (0.027)	0.001 (0.013)	0.001 (0.016)				
Only informal firm								
Public wage earner	0.416 (0.438)	0.489 (0.489)	0.345 (0.235)	0.397 (0.268)				
Private formal wage earner	0.550 (0.400)	0.556 (0.439)	0.222 (0.235)	0.252 (0.264)				
Other combination	-0.849 (1.515)	-1.093 (1.353)	-0.972 (0.891)	-1.158 (0.788)				
Sector effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.972* (1.034)	1.592 (1.140)	3.714*** (0.589)	3.512*** (0.664)				
R-squared	0.215		0.185					
N	370		370		1117		1117	

Notes: Robust standard errors in parentheses (clustered at the segment level). * p<0.10, ** p<0.05, *** p<0.01

Source: 1-2-3 surveys, WAEMU, 2001/02.

Table 6: Family and kinship ties and entrepreneur's use of labour

	(1)	(2)	(3)	(4)
	Ln total labour hours		Ln total labour hours owner	
	Migrants, 15 years and less in the capital	All migrants	Migrants, 15 years and less in the capital	All migrants
Share same ethnic group	0.281** (0.132)	0.248*** (0.096)	0.217** (0.097)	0.117 (0.072)
Share same origin	1.340** (0.532)	1.356*** (0.444)	0.781* (0.428)	0.643* (0.361)
Ln distance to origin	0.087*** (0.033)	0.057** (0.024)	0.048* (0.026)	0.032* (0.019)
Years since migration	0.012* (0.006)	0.005** (0.002)	0.005 (0.005)	0.000 (0.002)
Ln physical capital	0.176*** (0.019)	0.169*** (0.013)	0.069*** (0.014)	0.059*** (0.010)
No capital	0.402*** (0.124)	0.367*** (0.092)	0.118 (0.097)	0.058 (0.069)
Male (=1)	0.334*** (0.073)	0.298*** (0.054)	0.359*** (0.054)	0.284*** (0.039)
Age owner	-0.002 (0.005)	-0.000 (0.003)	-0.003 (0.003)	-0.000 (0.002)
Speaks French (=1)	-0.003 (0.078)	0.044 (0.056)	-0.018 (0.058)	-0.010 (0.042)
No diploma	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Primary completed	-0.062 (0.091)	-0.024 (0.066)	-0.058 (0.065)	-0.008 (0.047)
Some secondary	0.119 (0.144)	0.147 (0.097)	-0.056 (0.105)	0.005 (0.070)
Other post primary	-0.194 (0.150)	-0.147 (0.119)	-0.418*** (0.121)	-0.280*** (0.094)
Ethnic group 1	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Ethnic group 2	-0.208 (0.130)	-0.162** (0.079)	-0.139 (0.092)	-0.104* (0.058)
Ethnic group 3	0.076 (0.073)	0.120** (0.051)	0.028 (0.057)	0.052 (0.038)
Age of firm	0.005 (0.006)	0.004 (0.003)	0.003 (0.004)	-0.000 (0.002)
Only informal firm	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Public wage earner	-0.101 (0.114)	-0.094 (0.071)	0.074 (0.082)	-0.088 (0.060)
Private formal wage earner	-0.105 (0.100)	-0.047 (0.064)	-0.033 (0.080)	-0.015 (0.054)
Other combination	-0.321 (0.244)	-0.567* (0.307)	-0.347** (0.175)	-0.403** (0.184)
Sector effects	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes
Constant	3.865*** (0.289)	3.934*** (0.200)	4.309*** (0.218)	4.428*** (0.147)

Table 6 continues next page.

Table 6 (... continued)

	(1)	(2)	(3)	(4)
	Ln total labour hours Migrants, 15 years and less in the capital		Ln total labour hours owner Migrants, 15 years and less in the capital	
		All migrants		All migrants
R-squared	0.208	0.206	0.136	0.116
N	1116	2288	1116	2288

Notes: Robust standard errors in parentheses (clustered at the segment level).

* p<0.10, ** p<0.05, *** p<0.01

Source: 1-2-3 surveys, WAEMU, 2001/02.

Table 7: The effect of splitting enterprises on given transfers

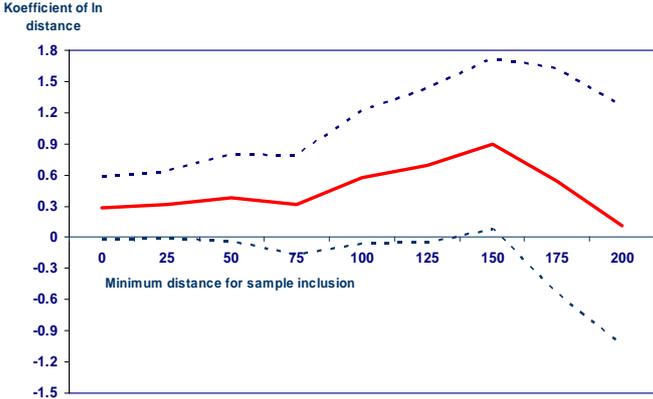
	Transfers given
Ln value added	0.110*** (0.041)
Single firm	(Ref.)
Two firms	-0.373* (0.217)
More than two firms	-0.054 (0.493)
Control variables	See notes
R-squared	0.130
N	1194

Notes: Robust standard errors in parentheses (clustered at the segment level).

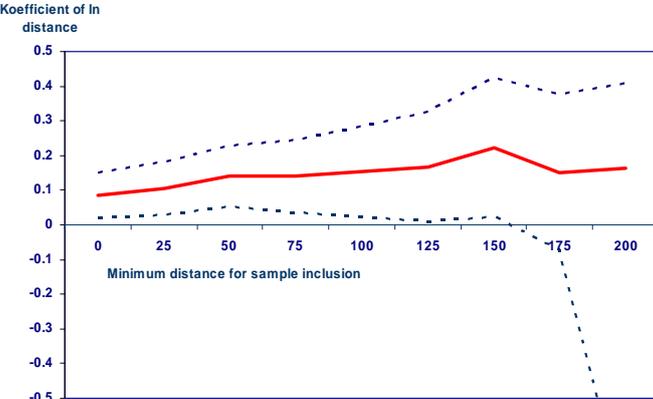
* p<0.10, ** p<0.05, *** p<0.01. The regression controls for gender and age of owner, household size, ethnicity, the activity portfolio of the household and country effects.

Source: 1-2-3 surveys, WAEMU, 2001/02.

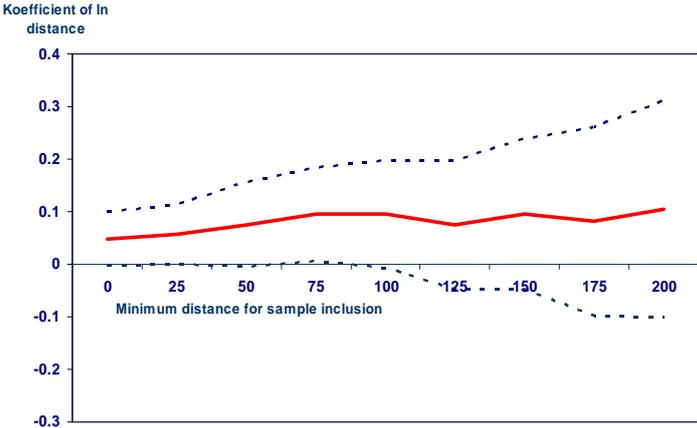
Figure 1: The effect of distance on input use for alternative distance thresholds for sample inclusion



(a) The effect of distance on the use of physical capital



(b) The effect of distance on the use of total hours of labour



(c) The effect of distance on the use of total hours of labour

Note: The figures show the coefficient of distance in a regression of input use on distance, controlling for all other variables that are noted in Tables 5 (physical capital) and 6 (labour) respectively. The horizontal axis shows the required minimum distance to the area of origin required that an observation is included in the sample (sample size declines this distance becomes larger). The vertical axis shows the corresponding regression coefficients along with the 95 percent confidence intervals.
Source: 1-2-3 surveys, WAEMU, 2001/02.

Table A1: Value added and factor use

	(1)	(2)	(3)	(4)
	Migrants, 15 years and less in the capital	All migrants	Migrants, 15 years and less in the capital	All migrants
Ln total labour hours	0.582*** (0.050)	0.572*** (0.043)		
Ln total labour hours			0.349*** (0.058)	0.376*** (0.046)
Ln physical capital	0.110*** (0.025)	0.116*** (0.018)	0.161*** (0.025)	0.188*** (0.017)
No capital	0.338** (0.157)	0.287** (0.119)	0.402** (0.157)	0.430*** (0.121)
Male (=1)	0.575*** (0.100)	0.405*** (0.070)	0.589*** (0.105)	0.485*** (0.071)
Age owner	0.007 (0.005)	-0.003 (0.003)	0.008* (0.005)	-0.000 (0.003)
Speaks French (=1)	0.196* (0.107)	0.187** (0.074)	0.160 (0.111)	0.185** (0.075)
No diploma	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Primary completed	-0.003 (0.114)	-0.032 (0.082)	0.059 (0.115)	-0.015 (0.084)
Some secondary	0.346** (0.174)	0.123 (0.134)	0.313 (0.197)	0.227 (0.140)
Other post primary	0.170 (0.199)	0.299** (0.143)	0.343* (0.193)	0.393*** (0.139)
Ethnic group 1	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Ethnic group 2	0.230** (0.112)	0.042 (0.081)	0.137 (0.115)	0.015 (0.080)
Ethnic group 3	0.001 (0.102)	0.024 (0.071)	0.009 (0.106)	0.035 (0.074)
Age of firm	0.017** (0.007)	0.019*** (0.004)	0.014* (0.007)	0.019*** (0.004)
Only informal firm	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Public wage earner	-0.087 (0.124)	-0.103 (0.091)	-0.065 (0.122)	-0.076 (0.093)
Private formal wage earner	0.144 (0.130)	0.086 (0.087)	0.095 (0.139)	0.063 (0.087)
Other combination	-1.668*** (0.366)	-1.747*** (0.300)	-1.679*** (0.384)	-1.821*** (0.299)
Sector effects	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes
Constant	2.534*** (0.342)	2.374*** (0.254)	3.027*** (0.376)	3.110*** (0.288)
R-squared	0.386	0.415	0.342	0.359
N	1065	2178	1061	2174

Notes: Robust standard errors in parentheses (clustered at the segment level). * p<0.10, ** p<0.05, *** p<0.01.

Source: 1-2-3 surveys, WAEMU, 2001/02.