

From Informal to Formal: the Role of Capital Accumulation in Senegal

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1 Introduction

This paper considers aspects of the development of informal firms, and their relationship to formal firms, that are generally neglected in the literature. Its motivation comes from observation of West African countries, particularly Senegal, though it may also have some relevance to other developing countries. Our future work will expand further the theoretical analysis and will test the model econometrically.

The background to the paper is a set of empirical observations that we attempt to reconcile in our theoretical analysis. For West Africa, sluggish investment and insufficient technology adoption are widely documented at the country level (Bigsten and Söderbom, 2006, Bigsten et al. 2003, Devarajan et al., 2001; Eifert and Nasir, 2004; Mazumdar and Mazaheri, 2003). Nonetheless, we have found in a

previous empirical study on Senegal (Levy, 2006) that net (and gross) entry rates into the formal sector are high. At the industry level, the population of formal firms in West African economies is typically characterized by a significant number of small size units with a heterogeneous age structure, and in many cases by an extensive informal sector (OECD 2005). Moreover, in many developing economies, including those in West Africa, it is common for firms to start operating in the informal sector before moving on to the formal sector (see, for example, Levenson and Maloney 1999).

Recent empirical work on investment climate has focused on the role of institutions, especially the credit market and regulations relating to entry, as limiting entry and ‘distorting’ the dynamics of the population of firms (World Bank, 2005, Dollar et al. 2005, Eifert et al. 2005). However, our study, by focusing on the role of the entrepreneur’s extended family and of vulnerability, proposes a different approach that we suggest is more consistent with both the country-level and industry-level evidence on investment behaviour and size choice. The importance of the extended family for entrepreneurial behaviour in Nigeria was emphasized by Nafziger (1969), but, apart from occasional general comments, little attention seems to have been paid to this issue in the development-economics literature since then. The work of Terrell and Svejnar (1989) is an important exception, but their focus is on the behaviour of workers, not entrepreneurs.

Because of the chronic insecurity facing the entrepreneur's family, as well as through social convention, surplus funds may be absorbed by dependants. Regardless of whether the dependants have contributed to investment funds for the firm, their vulnerability can make coverage of their needs, and those of the entire extended family, the priority. The greater the vulnerability of the family, the lower is the probability that any surplus from production will be invested. This argument is strengthened by the inefficiency of institutions, such as the lack of health insurance. And even if the extended family is not near the poverty line, cultural habits may result in them systematically absorbing any profits. A relative will claim some use for a firm's profit, and so investment may hardly occur. Indeed, according to De Sardan (1999), in many African countries families have become much more widely extended in recent years, and this has increased significantly the amount of solicitations for money that are difficult to refuse. Also, there has been a significant inflation of payments associated with family ceremonies (e.g., marriages, baptisms, funerals) and other social activities. For example, a recent development among some groups is that presents received by a woman at the time of baptism or in some cases for a wedding must be returned double when a similar occasions occurs for the donors.

We place the entrepreneur, operating within the framework of the extended family, at the centre of the analysis. The entrepreneur's investment behaviour is

formulated as depending not only on the usual determinants relating to market opportunities and financing capacity but also on his or her family circumstances (such as number of dependants and vulnerability). We shall analyze how the decision to invest profits, to start a new firm, or to move from the informal to the formal sector are all affected by these determinants. We shall look at the processes of human and physical accumulation through the birth and growth of a firm, moving from an informal status to a formal one. We model informality not as a means of avoiding taxes (many informal firms in West Africa do pay some taxes), but as a transition phase used by the entrepreneur to accumulate both physical and human capital in the context of the inefficiency of the institutions that are supposed to perform this role. (In particular, according to the World Bank's *Doing Business* survey, shortages of credit and training are the most reported problems).

In our analysis, a formal-sector entrepreneur's objective function is formulated in terms of the extent to which he or she values the consumption of the extended family and of the extended family's vulnerability to finance shocks. When the formal-sector firm generates surplus funds, if the demands of the extended family are likely to be great in the near future, the entrepreneur may, depending on the options available, prefer to spend these funds rather than leaving them to disappear into consumption by the extended family. In this context, one option may be for the formal entrepreneur to invest further in his or her own firm. However,

depending on parameter values, it may be preferable instead to use the money to set up a new informal firm.¹ In principle, this entrepreneur might also own and manage the informal firm. However, in practice, it is common for the entrepreneur to lend money either to a worker in his or her own firm, or to a member of the extended family (or both), who is then the owner of the informal firm.² Given that conventional credit markets function poorly for small and micro firms, this linkage with formal-sector entrepreneurs can play an important role in the development of the informal sector. And given the observation that the informal sector provides a training ground for entrepreneurs and workers who may later join the formal sector, it can contribute to the long-term growth of the formal sector.

As a preliminary illustration of some of the issues involved, we formulate a simple competitive model in which output price is given, and we use it to examine the conditions under which lending to a nascent informal sector entrepreneur will obtain. Significant roles are played by the set-up costs for informal firms, the weights in the formal entrepreneur's objective function, a parameterization of vulnerability, the bargaining power of the informal entrepreneur, the extent of

¹The net advantage of setting up the informal firm is increased if the minimum investment necessary to expand the formal firm is greater than the set-up cost of the informal firm. If the formal entrepreneur slowly accumulates funds with the intention of investing further in the formal firm when the funds are large enough, he or she may find that 'urgent' needs of the extended family pre-empt the funds.

²The former option could be interpreted as an extension of the formal firm that avoids illegally the costs of formality, and so it would involve risk of detection and punishment. Also, it may be disadvantageous for the entrepreneur to spread his or responsibilities more thinly over two activities that, because of differences in size and formality/informality status, may require some quite different skills.

learning-by-doing, and the social benefits that must be paid to employees in formal firms. Thus, the model forms the basis for future empirical work that will test the underlying hypothesis about the role of the extended family.

Nafziger (1969) examines some related issues. He begins by noting that development economists ‘generally contend’ that the extended family is a ‘major barrier to entrepreneurial activity’ (p. 25). It is ‘thought to dampen incentives to achieve, deter risk taking, and impede the mobilization of capital’ (p. 26). However, in his sample of 28 small manufacturing firms in Nigeria, he finds that the initial source of funds for 13 firms was the savings of the extended family, and in 4 more it was the combination of personal and extended family savings. (Similarly, Akoten et al. (2006), for garment production in Kenya, find that borrowing from family and friends is particularly important for new firms, with young managers. Such people are excluded from borrowing from banks by their high expected default rate, and they generally do not qualify for loans from sources such as microfinance institutions because they do not have business experience). Nafziger finds, however, that, once in existence, a firm hardly ever receives funds from the extended family. He also reports a strong positive relationship between the number of dependents an entrepreneur is required to support and the profit of the firm. Our interpretation of this result is that a more successful firm endows greater status on the entrepreneur. Consistent with this status, the entrepreneur will be expected to spread the

rewards, and more distant relatives will take advantage of this opportunity.

In the Section 2 we give more background on Senegal and we list some stylized facts that will be the basis of the illustrative model we then develop. Section 3 is devoted to the model. Section 4 gives some concluding comments.

2 The Case of Senegal

The definition used by the Senegalese government is that a production unit is informal if it does not keep written accounts and/or is not registered with a national accounts number.³ A recent survey (Enquete 1-2-3) of the informal sector in Dakar and its peri-urban area by the National Statistical Institute of Senegal estimated there to be almost 300,000 production units, with 434,200 employees.⁴ The average life expectancy for an informal firm in Senegal is 10.4 years, but here is great variation in age, with 10% created before 1980. The greatest life expectancy is for fishing; the next greatest is for building and construction, and repair, and then apparel manufacture. UN (2001) estimates that private sector production accounts for 85% of GDP, with 25% from the formal sector and 60% from the informal sector.

Many informal firms pay lump-sum taxes,⁵ but formality imposes the extra

³Only 2% of firms that are informal under this definition have an accounts number but do not keep accounts.

⁴Except where stated otherwise, the figures given below all come from this survey.

⁵Evidence is scarce on this, but World Bank (1996) noted that in nearby Cape Verde many

burden of paying social benefits and a minimum wage. The social benefits are of three types. First, payment into the Caisse de Securite Sociale covers leave for sickness, maternity, and workplace accidents. The cost is, on average, 10% of the wage bill. Second, there is payment to the Institution de Prevoyance Maladie for medical insurance; this amounts to about 6% of the wage bill. Third, there is payment into a pension fund, the Institution Prevoyance Retraite du Senegal, of between 6% and 14% of the wage. The employee contributes 40% of this payment and the employer 60%.

For the purposes of this paper, we specify the following stylized facts.

Stylized Fact 1: Two-part informal sector. The informal sector can be divided into two parts, a free-entry part, with large numbers of units, and an upper part that is to a great extent run by former employees of the formal sector. 76.9% of production units involve only one person, while 7.7% involve more than 3 people. Similarly, while approximately 60% have an annual value added averaging 40m FCFA, 15% have an annual value added averaging 180m FCFA. Our focus in this paper is on the upper part, which involves firms that are more likely to be profitable and pay taxes, and which are closer to formality. Given the large numbers involved, informality is not, for most units, a transitory phase on the way to formality.

informal firms pay taxes amounting up to 20% of annual declared turnover. For Senegal figures are available for commerce, where 6% of annual reported value added goes on taxes; and for the informal sector as a whole 47.2% of firms declared themselves as willing to pay taxes (Enquete 1-2-3).

However, for the upper part of the informal sector it is more appropriate to view informality as a potential transitory stage than as a means of avoiding taxes.

Stylized Fact 2: Informal firms get initial capital from the formal sector. According to USAid Senegal, Senegalese businessmen identify access to finance as the single most problematic factor for doing business. We may assume that access to finance is more limited for the informal sector. World Bank (1996) considers a sample of West African countries, and finds that in each one finance is the main obstacle to business start-up, and that family and friends are a major source of finance for start-up capital. Also, Van Dijk (1986) found that 18.6% of all informal firms received their initial capital from family and from their former boss. For the upper part of the informal sector the percentage would be considerably higher.

Stylized Fact 3: Many new formal firms come from the informal sector. Levy (2006) reports a high entry rate to the formal sector, averaging 7% per annum. Typically, an industry's productivity declines annually, but entrants make a positive contribution to productivity change. A significant component of this entry is from informal firms.⁶

Stylized Fact 4: The social position of the formal entrepreneur leads the extended family to increase its demands; formal profits are not often used for expansion. Terrell and Svejnar (1989) show that the higher the income of the member

⁶For Stylized Facts 3 and 4 we have yet to obtain significant evidence, so they are more hypotheses than stylized facts. An aim of our project is to obtain the evidence.

of the family who works, the greater is the number of dependents who rely partly or entirely on his or her income to survive, and they emphasize the disincentive effect on worker behaviour (see also Pfefferman, 1968). We hypothesize that what is documented here for workers is even more true for businessmen.

3 The Model

3.1 The Set-Up

Consider an activity for which price p can be regarded as fixed for relatively small firms. We may expect the net advantage from lending to an informal entrepreneur to be smaller the more the informal and the formal firms compete with one another in the product market, so that our assumption of price fixity limits, in principle, the validity of our results. However, according to Enquete 1-2-3 only 7% of informal firms in Senegal report that they are in competition with formal firms. So our assumption may not be particularly restrictive.

A formal sector entrepreneur owns a firm for which output in the coming period is

$$y = A(k + i); \quad A > 1. \quad (1)$$

The constant A is included to represent learning-by-doing, which, for the formal sector firm, has already been achieved. k is the existing capital stock and i is new

investment.

A new informal firm, if it is set up, produces output q in the coming period, according to the following production function.

$$q = I, \tag{2}$$

Because the informal firm is new, it does not inherit a capital stock from the previous period. I is the investment in the current period. Since there has been no learning-by-doing in the past for this firm the parameter A does not appear in (2).

We assume that each firm has a fixed-proportions production function. Given that the wage rate is fixed at w , this means that the wage bill for the formal firm is $(k + i)w$, while, if the informal firm is set up its wage bill is Iw . Also, a formal firm has to bear social costs, which are assumed to amount to $s(k + i)$. So its total labour costs are $(w + s)(k + i)$. The informal firm does not pay social costs.⁷

Because of the lack of availability of credit, assume that the only source for the investment I is the formal entrepreneur. For tractability, we make two simplifications. First, we assume that I is an initial capital requirement that is fixed in size: the informal firm cannot be set up with a smaller investment. Second, we assume that the amount m that the formal entrepreneur has available to spend in

⁷The social cost s may be assumed to include an adjustment to allow for the minimum wage.

the period equals I , the amount that set-up of the informal firm would require:

$$m = I \tag{3}$$

The formal entrepreneur has three options for use of fund m : spending on consumption (family needs), spending on investment in the formal firm, or having it spent on investment by the informal firm. If the funds are used on informal firm investment, there is nothing left for formal investment, and so $i = 0$. If the funds are not used for informal investment, then, because of the linearity in the model, the formal entrepreneur will choose either to spend all or none on formal investment: $i = m$ or $i = 0$.

If the informal firm is set up, this is through the formal entrepreneur choosing either the most suitable from among his or her workers or one of his or her extended family to manage the informal firm (or both - the worker may be a member of the extended family). We shall regard the informal manager as an informal ‘entrepreneur’, rather than just an employee who has been delegated a management task so that the formal entrepreneur can expand output without incurring social costs. Thus, we may think of the investment in the informal firm as a loan to a fledgling entrepreneur. However, in the simple form of the model formulated here, the distinction between the two interpretations is not significant.

We also take into account the role of the formal entrepreneur’s extended family,

EF (which may be defined to include friends). To be specific, we assume that if the funds m are not used productively (in either the formal or the informal firm) they will be entirely expropriated for consumption by the EF as described in the introduction.⁸ We assume that for every \$1 of money not invested or lent, suppose the entrepreneur places a value of $u \in [0, 1]$ on its use by EF. But it must also be taken into account that if the money is spent by the entrepreneur on investment or lending, bringing returns in the future, then, depending on the needs of the EF at that time, the returns may still be expropriated. Suppose the formal entrepreneur believes that expropriation will occur with probability θ . The *ex ante* value to the entrepreneur of \$1 in the future is therefore⁹

$$\theta.u + (1 - \theta).1 \equiv v; \quad u, \theta \in [0, 1]. \quad (4)$$

The parameter θ might be regarded as the vulnerability of the EF. Note that if $u = 1$ then $v = 1$; but if $u < 1$, $v > u$.

We do not apply weights such as u and v to the net earnings of the informal entrepreneur because the informal firm is new, and the profits are relatively small.

Hence, the status of the informal entrepreneur will not be high and members of

⁸Our analysis is confined to a particular case here, being meant as an illustration. For some formal entrepreneurs the EF may not be a potentially significant drain on funds in the current period.

⁹We simplify here by suppressing the needs of the inner family. Implicitly, however, investment of amount m is a cost because it results in forgone consumption for the inner family.

his or her extended family will not expect substantial support.

3.2 Investment Choice

Consider first the payoff for the formal entrepreneur from not lending. This has an immediate cost of i (the level of which is determined below), on which the formal entrepreneur places the value u because the funds are not used by the EF. It brings a return later equal to pAi of revenue minus $(w + s)i$ of labour costs; and these later returns are weighted by the coefficient v . Note that net earnings of $pAk - (w + s)k$ are also received through use of the firm's existing capital stock; but since this capital stock will be employed in all cases it is not necessary to represent it in comparisons. Thus, the weighted return to the formal entrepreneur from not lending is

$$R_{NL}^f = -ui + v[pAi - (w + s)i]. \quad (5)$$

Hence, given the amount of funds m , in this case the optimal amount of investment i is

$$\begin{aligned} \text{(i)} \quad i &= m \text{ if } s \leq pA - w - \frac{u}{v}; \\ \text{(ii)} \quad i &= 0 \text{ otherwise} \end{aligned} \quad (6)$$

Given investment according to (6), the weighted return to the formal entrepreneur is therefore

$$\begin{aligned}
\text{(i) } R_{NL}^f &= -um + v[pAm - (w + s)m] \text{ if } s \leq pA - w - \frac{u}{v}; \\
\text{(ii) } R_{NL}^f &= 0 \text{ otherwise.}
\end{aligned} \tag{7}$$

If, alternatively, the funds are lent to the informal entrepreneur ($I = m$), the informal firm earns $(p-w)m$. This gives us two cases to consider. If $s \leq pA - w - \frac{u}{v}$, then the formal entrepreneur will spend m on either investment i in the formal firm or on lending to the informal entrepreneur. If $s > pA - w - \frac{u}{v}$, then the formal entrepreneur will leave the m unspent productively, so that it accrues to the EF or he or she will lend it to the informal entrepreneur.

We may assume here either that the formal entrepreneur holds all the bargaining power, so that the informal entrepreneur receives only his or her alternative net earnings (in this case the formal entrepreneur would in effect be residual claimant) or we may explicitly formulate a Nash bargain between the formal and informal entrepreneurs. Since the latter approach includes the former as a special case, we take the latter approach.

3.2.1 Case (i): $s \leq pA - w - \frac{u}{v}$

In this case, suppose that the formal entrepreneur lends the money to the informal entrepreneur. In return, the formal entrepreneur will be paid a transfer t . This is defined to include the repayment of capital m . To be specific, we assume now that the informal entrepreneur is taken from the formal entrepreneur's workforce. Thus, if the loan is not made the informal entrepreneur would continue working for the formal entrepreneur, earning a wage w . We assume that a worker is always replaceable at wage w . Let the formal entrepreneur's Nash bargaining weight be α . The size of α will be positively affected by the formal entrepreneur's monopoly of investment funds, but negatively affected if there is only one worker with the ability to be a successful informal entrepreneur.

The Nash bargain to determine the size of t yields the solution to

$$\arg \max_t \{-um + vt - [-um + v[pAm - (w + s)m]]\}^\alpha \{(p - w)m - t - w\}^{1-\alpha} \quad (8)$$

Here, the first pair of parentheses $\{.\}$ gives the net payoff to the formal entrepreneur from lending rather than investing. Lending has a cost um and yields the amount t , which, since it accrues at the end of the period, must be weighted by v . From this must be subtracted the return R_{NL}^f as specified in (7)(i). The second pair of parentheses $\{.\}$ gives the equivalent net payoff for the informal entrepreneur.

$(p - w)m$ is the informal firm's net earnings (disregarding the investment m and the cost t). From this, t must be subtracted because it is paid back to the formal entrepreneur. Also, the amount w is subtracted because this is the earnings of the informal entrepreneur if he or she does not receive the loan and start the informal firm. (If, instead, the informal entrepreneur were an unemployed member of the extended family, this term would be set equal to zero, making lending more likely.) (8) reduces to

$$\arg \max_t \{t + [pAm - (w + s)m]\}^\alpha \{(p - w)m - t - w\}^{1-\alpha},$$

from which we obtain

$$t = \alpha[(p - w)m - w] + (1 - \alpha)(pA - w - s)m. \quad (9)$$

Note that $dt/ds < 0$: higher social costs make formal investment less attractive, so that the formal entrepreneur does not need such a big return from lending.

The net payoffs from the bargain (after t is paid) are

$$\begin{aligned} \text{formal entrepreneur gets } & v\alpha\Sigma; \\ \text{informal entrepreneur gets } & (1 - \alpha)\Sigma, \end{aligned} \quad (10)$$

$$\text{where } \Sigma \equiv sm - w - (A - 1)pm.$$

Here, the two net payoffs do not sum to Σ because of the existence of a third ‘player,’ the EF. Any \$1 accruing to the formal entrepreneur only has a value of $\$v$, and so the net payoff to the formal entrepreneur is only $v\alpha\Sigma$. Because of the reduced value of money to the formal entrepreneur he or she does not bargain for such a high payoff.

For the bargain, and lending, to take place, it is necessary that $\Sigma > 0$; that is, we need

$$s > \frac{w}{m} + (A - 1)p. \quad (11)$$

It is only if social costs are high enough that the formal entrepreneur will be willing to divert funds from the formal to the informal sector. The informal entrepreneur is given the alternative earnings w in the Nash bargain plus $(1 - \alpha)\Sigma$, his or her share of the surplus from the bargain. Thus, his or her income is $w + (1 - \alpha)[sm - w - (A - 1)pm] = (1 - \alpha)[sm - (A - 1)pm] + \alpha w$. Given (11), this is sure to be positive.

Putting (11) together with the inequality $s \leq pA - w - \frac{u}{v}$ that defines case (i), we have

$$w + \frac{u}{v} \leq pA - s < p - \frac{w}{m}. \quad (12)$$

If the informal entrepreneur was a member of the EF who was not employed previously, the term w in the surplus Σ must be deleted, as must the term $\frac{w}{m}$ in both (11) and (12).

3.2.2 Case (ii): $s > pA - w - \frac{u}{v}$

Now suppose that if the formal entrepreneur does not lend the money to the informal entrepreneur, he or she finds it advantageous simply to leave it for use by the EF. Again we consider the Nash bargain for lending, which is here the solution to

$$\arg \max_t \{-um + vt\}^\alpha \{(p - w)m - t - w\}^{1-\alpha}. \quad (13)$$

This is the same as (8) except that if the money is not lent, the informal entrepreneur receives 0. We therefore obtain

$$t = \frac{1}{v} [\alpha(p - w)m - \alpha w + (1 - \alpha)um]. \quad (14)$$

Social benefits do not figure in this transfer since lending does not affect the amount of social benefits paid.

The net payoffs from the bargain (after t is paid) are

formal entrepreneur gets $v\alpha\Gamma$;

informal entrepreneur gets $(1 - \alpha)\Gamma$, (15)

$$\text{where } \Gamma \equiv \frac{1}{v} \left[(p - w)m - w - \frac{u}{v}m \right].$$

For the bargain, and lending, to take place, it is necessary that $\Gamma > 0$; that is, we need

$$(p - w) - \frac{w}{m} > \frac{u}{v}. \quad (16)$$

The informal entrepreneur receives alternative earnings w in the Nash bargain plus $(1 - \alpha)\Gamma$. Putting (16) together with the inequality $s > pA - w - \frac{u}{v}$ that defines case (ii), we have

$$pA - s < w + \frac{u}{v} < p - \frac{w}{m}. \quad (17)$$

If the informal entrepreneur was a member of the EF who was not employed previously, the term w in the surplus Γ must be deleted, as must the term $\frac{w}{m}$ in both (16) and (17).

3.2.3 The Condition for Lending

Putting (12) and (17) together, we obtain the following condition that is necessary and sufficient for lending to take place:

$$p - \frac{w}{m} > \max\left(pA - s, w + \frac{u}{v}\right). \quad (18)$$

If the informal entrepreneur was not employed previously, the term $\frac{w}{m}$ must be deleted here. Note that it is feasible that if $u = 1$ (either the EF does not undertake any expropriation or the formal entrepreneur is completely altruistic toward the

EF) lending does not take place, but that for $u < 1$ lending occurs.¹⁰

It can also be seen what happens if, beginning with (18) being satisfied, we raise u by small amounts until we come to a point at which (18) is violated. If u rises in case (i) it first causes (12) to be violated by making $w + \frac{u}{v}$ exceed $pA - s$. Then there is still lending, but we are in case (ii). It is only when u rises further, to violate the right-hand side of (17) that lending does not occur; and in this case $i = 0$.¹¹ The argument of the previous paragraph can therefore be made more precisely: it is feasible that if $u = 1$ the formal entrepreneur will not use the money m productively, whereas for $u < 1$ he or she lends. (The same argument does not hold with formal investment for $u = 1$ but lending for $u < 1$.)

Conversely, for constant u , if θ is increased, v falls, and so u/v rises. Therefore, an increase in the vulnerability of the EF can reduce lending to the informal sector and thus its capital accumulation.

3.2.4 Learning

We now modify the model to incorporate in a stylized way the learning by the informal sector entrepreneur. Suppose that half-way through the period we consider, the informal entrepreneur has accumulated enough experience to operate with a

¹⁰If we assume that the formal entrepreneur has all the bargaining power and that the informal entrepreneur has his or her income squeezed down to the alternative wage earnings w , (18) still holds.

¹¹The argument here is unaffected by the fact that when u changes so does v . For $d(u/v)/du > 0$, and so when u falls u/v does too.

production function parallel to (1), that is, with parameter A on the right-hand side:

$$q = AI. \tag{19}$$

The derivations are then similar to those above and so we do not reproduce them here. The important point is that, instead of (18), we now obtain

$$\frac{1}{2}(1 + A)p - \frac{w}{m} > \max\left(pA - s, w + \frac{u}{v}\right). \tag{20}$$

The difference between (20) and (18), is that the term $\frac{1}{2}(1 + A)p$ replaces p on the left-hand side (if $A = 1$ the difference disappears). As we would expect, learning makes lending more likely.

4 Concluding Comments

The approach that we have suggested in this paper is consistent with observations of lack of investment in formal firms, and it generates the subsidiary hypothesis that when growth occurs it will tend to occur by the establishment of new units, rather than expansion of existing small firms. It is also consistent with the observation of high entry rates and of a ‘missing middle’ in the size distribution of firms - large firms are not subject to the same processes, as they have better access to formal credit markets (Bigsten et al., 2003; Reinikka and Svensson, 2001).

Our illustrative model shows simple conditions under which the formal entrepreneur will choose to lend to set up an informal entrepreneur in business. Depending on parameter values, this outcome may obtain even if the vulnerability and general consumption needs of the extended family play no role (that is, if $u = v = 1$). However, once these factors related to the EF come into play, the net advantage from lending to the informal entrepreneur is increased. As we have pointed out, it may be that in the absence of vulnerability such lending would not occur, but that with vulnerability it becomes the preferred option of the formal entrepreneur.

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