Vulnerability and Investment Behaviour in Senegal: the Role of the Extended Family

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Summary

Introduction

The aim of this paper is to examine in detail the hypothesis that, in the context of lack of both external finance and social protection, family circumstances can have a fundamental effect on the behaviour of small firms in a developing economy. We formulate a model of firm behaviour and test it using data from the manufacturing and service sectors in Senegal. We show that the investment function at the firm level depends, not only on the usual economic and financial factors, but also on parameters related to the poverty and vulnerability of the entrepreneur's family. The effect of family circumstances is magnified by the role of the extended family, which an entrepreneur may feel obliged to support. A preliminary look at the data for Senegal also indicates that entrepreneurs often use their profits to finance informal start-ups by members of the extended family. Since this use of profits may preclude expansion of the entrepreneurs' existing firms, it has potentially important implications for the size distribution of firms.

In the past 14 years Senegal has experienced sustained economic growth, with an annual real growth rate estimated at around 5% p.a. Parts of the manufacturing sector and most of the service sector have grown relatively rapidly and the construction sector has boomed, especially in and around Dakar. However, earlier work by Levy finds that in most industries the formal sector has responded to the surge in demand with an exceptionally high level of firm creation and net entry, whereas existing firms have been less responsive in terms of their investment and expansion. Thus, the population of formal firms contains a 'missing middle', with a few large firms and a significant number of small units. The informal sector has a dual structure. On the one hand it is composed of a large number of small, low value-added units, mostly with no employees and operating in resale or in low capital-intensive activities. On the other, it contains larger, more capital-intensive units, which hire, make profit and invest, and which compete with formal firms in terms of performance and earnings. We are primarily concerned with the latter type of informal firms, and with small formal firms (the informal-formal distinction is far from clear-cut in Senegal). These informal and formal firms rely on the family (nuclear and extended) to finance investment.

Hypothesis

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Given growing demand and favourable investment opportunities, we suggest two reasons why an entrepreneur might nonetheless choose not to invest profits or other family funds in his/her own firm. One reason is that, given the incidence of poverty with no social protection or safety nets and little access to health services, shocks may occur that compromise the survival of the family and for which no other source of funding is available for immediate response. When shocks such as illness, death, or the loss of assets through theft occur, the entrepreneur may have little choice but to help cover the financial costs, even if the shock has occurred to a relatively distant member of the family. Also, regardless of whether an entrepreneur's family is near the poverty line, cultural habits may lead them to absorb any profits. More predictable costs, such as for religious celebrations, will have to be covered, and relatives will always claim some use for a firm's profit. All of these factors cut into the entrepreneur's ability to invest further in his or her own firm. Generally, we expect that 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.

Additionally, there is a variety of reasons why an entrepreneur might choose to lend to a member of the extended family to start a new business, rather than invest further in his or her own. First, provided there is not a strong positive correlation in the returns to the two businesses, this can be seen as risk diversification. Second, lending to the extended family member may make that member, and other members of the extended family, more willing to help the entrepreneur if he or she should run into financial difficulties in the future. Third, lumpiness may be greater for expansion of the entrepreneur's firm than for start-up of the other firm. Indeed, if other members of the extended family are more willing to lend for the start-up than to lend to the entrepreneur for investment (given his or her relative prosperity), an additional small contribution by the entrepreneur may be the critical factor enabling the start-up. The tendency of the extended family to soak up funds for consumption strengthens this argument, for it discourages attempts to build up funds steadily for a large investment in the future. Fourth, it may be conjectured that, at least in some cases, irreversibility/asset specificity is greater for investment in the entrepreneur's business (e.g., it might involve the purchase of a specialized machine) than for setting up a small new business (e.g. buying an asset with more general use such as a bicycle or sewing machine), thus involving less risk.

Empirical Analysis

Our empirical analysis uses data from 'Enquete 123', a survey carried out by the Direction de la Prevision et de la Statistique in 2002 in Dakar and its suburbs. The dataset is composed of three surveys, each done on the same sample of households or subset of the total sample, but with different focuses:

> *Phase 1* focuses on household composition and the characteristics of all the members of the family, together with details about their livelihoods.
>
> *Phase 2* explores, for a subset of families, the informal activities by each member of the household who owns a firm. This phase reports the accounting and financial status of informal firms together with more subjective related issues such as difficulties encountered during recent years, competition from formal and informal firms in the

sector, access to input markets, and perception of the economic and regulatory environment.

Phase 3, which relates to household expenditures, reflects consumption and spending on religious festivals and family-related events (weddings, funerals and birth ceremonies). It also accounts for gifts and transfers to and from the NF and EF, relatives or social network.

Phases 2 and 3 were completed on subsets of the households in Phase 1. Because these subsets are different, and because we need the information from both to make the link between the behaviour of the entrepreneur and his or her household circumstances, we have developed a methodology in two stages. In the first, by logit estimation, we use the information on spending from Phase 3 to assess how the probability of a (life-related) financial shock (which we define as 'vulnerability') is related to household characteristics. From Phase 1 of the survey, we know the characteristics of each entrepreneur's family, and so we can attribute each entrepreneur in Phase 2 a vulnerability indicator. Thus we are able to test, for the entrepreneurs in Phase 2, whether investment behaviour is affected significantly by its vulnerability, as well as by other family-related parameters and the usual profitability parameters.

Since expenditure on religious ceremonies is predictable, we do not count it as a shock, instead regarding it as a deduction from current income. However, we treat expenditures on family-related events such as weddings, funerals and birth ceremonies as shocks. Our empirical analysis of the factors associated with these events therefore feeds into the determination of our vulnerability indicators. The data on gifts and transfers will enable us to test hypotheses on lending by entrepreneurs within the extended family, but we have not undertaken this analysis yet.

We find that the probability of a wedding occurring within the next 10 months of the survey depends significantly on household composition, income, and the marital status of the head of the household. Similarly, the occurrence of funerals within a household depends significantly on the age and medical condition of its members, and livelihood conditions, which we proxy using the type of housing, the number of household members per room and domestic access to electricity. The probability of a birth occurring within the household depends significantly on household composition, the number of women who are not working, and the socio-professional category of the head of the household.

To analyze the entrepreneur's investment behaviour, we proceed in two steps. First we examine what explains the decision to invest using logit estimation. The fact that only 30% of firms invest (net) more than 2.000Fcfa in the 12-month period preceding the survey reinforces the rationale for this methodology. We find that the decision to invest depends on both the normal profitability parameters and on the entrepreneur's family circumstances. The latter include the vulnerability indicator, income from other sources, the ratio of dependents in the family, and the fact of having dependents.

We then use OLS regressions to test the determinants of the value of investment among the firms that invest. We find that vulnerability has a significant negative effect on the amount of investment. However, the effect is smaller (not so negative) for firms that are more profitable and larger. The only subset of firms for which vulnerability has a positive effect is for those entrepreneurs in families with no financially-dependent members.

Implications

In every model that we tested, parameters that relate to the entrepreneur's family, such as our vulnerability proxy, the other income of the family, and the number of dependants, are significant in explaining investment decisions. We therefore suggest that consideration of poverty and vulnerability should be brought to the fore in analyzing firm behaviour. It is not possible to understand firm behaviour with respect to physical capital accumulation and patterns of growth without placing poverty and vulnerability at the centre of the analysis. There is a large literature focusing on the impact of family networks on village economies, but very little examination of how family circumstances affect investment behaviour in an urban context in the context of inefficient (particularly financial) institutions. It enables us to provide a comprehensive approach to understanding the process of entry and growth for a domestic African firm

With poverty, vulnerability and a paucity of external finance limiting the amounts of investment and productive lending, firms achieve in low returns, and so a vicious circle obtains, with a continuing inability to break away from poverty and vulnerability. Policies such as social protection, that are aimed at reducing vulnerability, should therefore be seen as complementary to policies such as the support of microfinance, that are aimed at supporting investment. Social protection can be seen as additional catalyst for investment, a factor that should possibly be included in cost benefit analyses of social protection measures.