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Microfinance and the dynamics of financial vulnerability. Lessons from rural India*

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Abstract

Drawing on data collected in rural South India, and using mainly a comprehensive approach, the purpose of this paper is to analyse the effects of microfinance on the financial vulnerability of its clients. First, we observe that microfinance is a double-edged sword: it can either reduce the financial vulnerability of households or push them further into debt. Second, we argue that an understanding of the uses and processes of microfinance is inseparable from one of the broader local dynamics pertaining to employment, financing and consumption. We also argue that the effects of microfinance depend upon how clients articulate and coordinate microfinance with the other financial tools to which they have access and the whole range of strategies deployed to cope with vulnerability and to build assets, both tangible and intangible.

Key words: microfinance, Self-Help-Group, vulnerability, assets, India, informal finance

JEL-classification codes: G21, O17, O53, Z13

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1. Introduction

The microfinance industry is becoming increasingly concerned by the nature of its social impact. Even though microfinance is still considered as an important instrument for anti-poverty policies, there is growing consensus among microfinance practitioners and donors that financial performances do not automatically correspond with positive impacts. More generally, the issue of household financial vulnerability (which is a specific form of social impact) is a matter of concern. The worry is that microfinance (and microcredit in particular) might leave some people worse off by pushing them into debt beyond their repayment capacities (Hulme 2007).

Impact studies focused on financial vulnerability provides mixed picture. On the one hand, various studies provide significant evidence of how microfinance services help their clients to protect themselves against risk, to develop income-generating activities and, more broadly, to exploit opportunities and to cope with economic losses (Armendariz & Morduch 2005; Bouquet et al. 2009; Collins et al. 2009; Sebstad & Cohen 2000). On the other hand, some studies argue that microfinance might lead to contrary effects, especially for the most vulnerable (Dichter & Harper 2007; Mosley & Hulme 1998; Mosley 2001). Because of their greater needs for consumption loans, their greater vulnerability to asset sales forced by adverse income shocks and their limited range of investments, the most vulnerable households may not be able to use microfinance efficiently (Mosley 2001).

Similar controversies can be found in India. The Indian microfinance sector has developed considerably over the past decade, both in scale and institutional diversity (Ghate 2007; Srinivasan 2009). The number of microfinance clients in 2008 is estimated to have been around 55 million, with an annual growth rate (in terms of number of customers) of approximately 10% (Srinivasan 2009). Indian microfinance can be distinguished from other countries in various respects: the importance of the Self-Help Group model, still dominant

today, a focus on rural areas and a concentration in the south of the country. These three aspects are presently diminishing in importance, but nevertheless represent an important feature of the microfinance landscape. It is also worthwhile noting that the provision of services to the rural poor is not new: India has a long history of credit schemes and credit institutions entirely devoted to rural areas, also for the poor. However, the inefficiency of rural credit institutions and government schemes (very poor recovery rates, poor targeting) has been documented at length. Since the 1990s, liberalization measures have broadened the extent of credit rationing, rural areas and poor segments of the population being the most severely affected (Copestake, 1988; Ramachandran and Swaminathan, 2005; Shetty 2004). With a focus on sustainability and discipline, microfinance raises new promises (Garikapati 2008; Rao 2008): incentives and collaterals better adapted to the poor (mainly the joint-liability system and the focus on women) are expected to ensure repayment performance, while strategic partnerships (mainly between banks and NGOs) are considered to be an efficient means of lowering transaction costs and ensuring financial sustainability (Ghate 2007; Seibel & Khadka 2002).

Indian microfinance has also brought about an increased interest among scholars. Here, too, empirical evidence regarding the impact on the financial vulnerability of households is mixed. A number of surveys give positive results, measured according to various indicators: employment and livelihood diversification (EDA 2005; Labh 2005; Patole & Sinha 2005; Puhazhendi & Satyassi 2000), assets (EDA 2005; Puhazhendi & Satyassi 2000; Swain & Varghese, forthcoming), consumption (Labh 2005) and composite indicators of vulnerability (Garikapati 2008). Other studies report negligible effects in terms of livelihood diversification (Kalpana 2008; Oommen & Meenakshisundararajan 2005; Thampi 2005). In Kerala, Sunil finds that the main effect of microfinance is to shift the debt burden from men to women (Sunil 2005). It is also observed that microfinance may be used for risky investments that lead

to financial fragility. Using data collected in Andhra Pradesh, Wendy Olsen (2008) finds that some borrowers use microcredit for high-status objects. The author considers microcredit to be an “easy credit” that “may be making it possible for these people to incur debts beyond their capacity to repay” (Olsen 2008: 7).

From this literature it is clear that the role and the impact of microfinance on the financial vulnerability and indebtedness of its clients remains a highly controversial issue. Drawing mainly on a qualitative and comprehensive approach, the intention of this paper is to contribute to this literature through a contextualized analysis of microfinance processes and microfinance dynamics. Our purpose is not to provide an answer as to whether microfinance per se brings positive or negative results, but to analyse the processes underlying microfinance uses and the diversity of patterns in existence. Our research results indicate that microfinance is a double-edged sword: it can either reduce the financial vulnerability of households or push them further into debt. First, we suggest that comprehension of the uses and processes of microfinance can come only via knowledge of the broader local dynamics pertaining to employment, financing and consumption. We also argue that the effects of microfinance are not only a matter of *access* (being a microfinance client or not), but also depend on how clients *make use* of microfinance services in a given context. What counts is how these services are set up and coordinated alongside the other financial tools to which people have access, as well as the whole range of strategies deployed to cope with vulnerability and build assets, both tangible and intangible.

The rest of this paper proceeds as follows. The second section provides an analytical framework, followed in the third section by a description of methodology and data (a mix of qualitative and quantitative data collected between 2004 and 2009 from two microfinance NGOs located in rural south-India, Tiruvallur district). The fourth section describes the main trends: contrasting paths for debt and assets and paths that differ between households. The

fifth section examines the dynamics of financial vulnerability and the role of microfinance in greater detail**.** The final section presents the conclusion and main implications of this study.

2. Analytical framework

Debt in itself is not necessarily bad. Whether viewed socially or economically, debt is two-sided. Socially, it may stifle or protect, create and reinforce hierarchies but also maintain, update and build solidarities and identities (Malamoud 1980; Servet 2006; Villarreal 2004, 2009a; Zelizer 1994). Economically, debt can lead to accumulation or impoverishment: the process is mechanical and depends on the difference between the cost of debt and the profitability of investments financed through debt.

In practice it is impossible to dissociate the social and economical implications of debt as accumulation and impoverishment have a lot to do with social relations. One might think that financial vulnerability is primarily due to "unproductive" expenditures. This has been recently challenged by Collins et al. (2009). The distinction between "productive" and "unproductive" expenses is seen to have little meaning. First, there is now a consensus that poverty is multidimensional. Being poor means not only being unable to fulfil physiological and material needs but also *social* needs (Sen 1984). A social need, Amartya Sen suggests, means being able to participate in social life "without shame": in some contexts a television might be the minimum standard, while elsewhere it will be a herd of cows (or both). When people do not have the monetary means to access these needs (physiological or social), there are two options: privation or debt (when credit is available).

Second, spending in order to maintain or enhance one's productive capacity has now been recognized as a very productive expenditure (Strauss & Thomas 1995). Social needs have an intrinsic as well as an instrumental value (Sen 1984): renovating one’s house helps to cope with environmental hazards, but it may also attract a better groom for the daughter; participation in religious festivals might be a source of pleasure and may strengthen self-

esteem, but it is also a way to improve one's reputation and therefore the social support of the community, etc.

More generally, the consequences and significance of debt should be viewed in a more holistic perspective that takes into account all the strategies for managing vulnerability and assets. The "asset vulnerability framework" designed by Caroline Moser (1998) is well adapted to our purpose. The asset vulnerability framework is based on the following arguments. First, vulnerability is a dynamic concept: in contrast to poverty (which is usually a measure fixed in time), vulnerability captures processes of change. Second, vulnerability is closely linked to asset ownership. Of course the amount of assets matter (the more assets people have, the less vulnerable they are, and conversely). However more than the amount of assets as such, it is the combination and the ways in which they are used which determine vulnerability: how people combine these assets and find the right "mix" (Moser 1998: 16; see also Villarreal 2004). Third, the definition of assets is a broad one, including a vast range of tangible as well as intangible assets. Tangible assets include labour (how people are able to mobilize additional labour force or to work more in order to cope with crisis and to fulfil needs), human capital (especially related to health and education) and productive assets. Intangible assets include intra-household relations and social capital. Household relations may help to pool income and share consumption. Conversely, intra-household conflicts, domestic violence and male desertion are likely to increase vulnerability. How social capital can help to reduce vulnerability depends on the range of social networks in which people are involved, as well as their capability to activate and sustain these networks. Social networks facilitate access to reciprocal support, patronage and protection as well as to formal and public facilities (NGO support, government schemes and public services).

The "asset vulnerability framework" can usefully be used to understand how microfinance help households to better cope with vulnerability (Sebstad & Cohen 2000). We suggest that it

can also highlight our understanding of the processes through which microfinance can exacerbate households' financial vulnerability.

3. Data and methodology

This paper draws on findings from a specific research done in partnership with two local microfinance NGOs in rural Tamil Nadu. They have been providing microfinance services in partnership with banks for some 10 years. With the support of an international donor, both of them have been involved since the end of 2002 in a specific microfinance programme targeting clients who are poorer than their usual clientele. The beneficiaries of the programme are women, but the programme explicitly targets households.[1] Officially the main purpose of the programme was to reduce household vulnerability through asset building, livelihood diversification and debt reduction from informal finance, considered to be risky and costly. In spring 2004, a survey was conducted among 400 households. The survey investigated the socio-economic characteristics of the households and details about their asset holdings, outstanding debt[2] and sources of the debt. A second survey was carried out among the same 400 households in spring 2006 to ascertain changes. Being a research team located in the same region and working on labour and financial markets, we were asked to monitor the survey and analyse the results. Globally, we observed that the clients were highly and increasingly indebted (combining microfinance and other loans, mainly informal), while assets were not increasing at the same pace for all households and direct effects on livelihood were negligible. Intrigued by this preliminary result, we decided to investigate further the question of financial vulnerability. A third survey was conducted in spring 2009: out of the initial sample, 395 households were surveyed again. The survey included the same questions

[1] As is the case elsewhere, loans are also often partly managed by men, or by women's in-laws. It is, however, beyond the scope of this article to consider this point in detail. See for instance Garikipati (2008).
[2] The survey was limited to amounts exceeding 500 INR. In April 2009 (date of the last survey), 1 INR = 0,015 euro.

as in 2004 and 2006, with additional details concerning livelihood portfolios, income and expenses.

Parallel to these three surveys, intensive qualitative field work was conducted in successive stages from April 2006 until June 2009. Not only did the design of the survey not allow for a standardized "impact study" (no control group[3], insufficient control variables), but our involvement in this research was clearly motivated by the analysis of processes and mechanisms. The three surveys were used to determine broad trends, although the focus of the analysis was mainly on qualitative field work, with the goal of understanding the diverse effects of microfinance and offering cogent, reasonable and plausible interpretations. A list of questions emerged from the surveys that oriented the field work: Why were people increasingly indebted and what was the role of microfinance in that process (main results of the 2006 survey)? How can we explain that many households have bought livestock but subsequently lost part of their acquisition? How can we explain the poor results in terms of self-employment (in the non farm sector**)**? How can we explain the diversity of evolutions in terms of debt and asset holdings? How can we explain the increasing financial vulnerability of some households (main results of the 2009 survey)?

In order to reply to these questions, in-depth case studies were made with around 50 households. Some cases studies focused on very precise questions; for instance the profitability of economic activities financed through microcredit, mainly livestock and small businesses. Questions aimed at reconstructing the whole set of expenses, sales and then net income. Individual cases studies have been complemented by the analysis of local markets

[3] Control groups are commonly used to assess the effects of microfinance: households with microfinance are compared to households without microfinance in order to isolate its specific role. However, the implementation of reliable control groups raises many methodological questions, especially selection bias (Mosley 1998). In our case, for instance with the increase of microfinance supply and market saturation, the existence of "pure" control groups (without any access to microfinance) is rather doubtful. Moreover, the use of control groups is particularly well-suited to the analysis of linear chains of impact (input-output-impact) (Mosley 1998). When causal mechanisms are complex and when their effects are partially unexpected and indirect – which is very much the case here -, qualitative methods are much more appropriate for dissecting their processes and dynamics (Wright & Copestake 2004).

(discussions with providers, clients, key informants), in order to better understand the difficulties met by our interviewees. For other case studies, open and repeated discussions were used to obtain a comprehensive understanding of household trajectories. Two lines of questioning were pursued. The first pertained to the long term, focusing in particular on the main stages of the life cycle and the social relations of the household. The second pertained to the short term, focusing on the unpredictability of daily life. We alternated individual and collective discussions (with various members of the households) according to circumstances and opportunities. Throughout this period, around 20 semi-directive interviews were also conducted with local credit providers. Respondents were asked about the loan terms, cost, duration, collateral requirements and sanctions for non-repayment, as well as how they evaluate the creditworthiness of customers and manage risks. The history and recent development of their activity were then considered.

The villages studied here belong to Tiruvallur district, located in north-eastern Tamil Nadu, at the border to Andhra Pradesh (north) and the district of Chennai (south-west). The region is characterized by an important and increasing proximity to the urban area of Chennai. Until the 1990s, rural households depended principally on agriculture (mainly rice, groundnut, kambu, ragi, green gram and black gram). The exponential growth of Chennai city[4] and of the transport infrastructure (construction of a highway between Chennai and Bangalore and between Chennai and Andhra Pradesh) offers new employment opportunities, while exerting a growing influence of "urbanized" standards on local social norms. More and more men, especially the youth, go back and forth between the village and the city. In terms of social composition, as elsewhere in Tamil Nadu, the hold of caste remains powerful, both economically (with a strong segmentation of labour markets according to caste) and socially (with caste-based identities and social hierarchy) (Harriss-White 2003). Here the dominant

[4] Chennai is the capital city of the Indian state of Tamil Nadu and the fifth most populous Indian city with an estimated population over 5 million people.

castes (numerically, socially and economically) are *Naidus* and *Mudaliars*, while the marginalized groups include mainly *Paraiyars* and some *Irulars*. Most villages are segmented according to this division: the "village" consisting of the higher castes and the "colony" composed of the lower castes and scheduled tribes. The microfinance programme studied here focuses exclusively on *Paraiyars* and *Irulars*.[5]

According to the data collected in 2009, the profile of the population was as follows. On average, households consisted of 4 members. Most of the households were landless (95%). For those who had land, the size was on average 1.05 acres. 41.2 cent of the households lived in mud houses, 22.4 per cent in semi-concrete houses, 36.4 per cent in concrete houses, but almost half of the latter (16%) were of very poor quality and came from a public scheme. The average income per household was 24,000 INR per year (median 20,000).[6] More than half of the households (57.6%) live below the official poverty line per capita as defined for rural Tamil Nadu. Somewhat one third (29.5%) are above the poverty line but very close to this line and can still be considered as vulnerable. As far as livelihood is concerned, half of the households (49.6%) depend only on agriculture, mainly as agricultural *coolies* (daily labourers). A small part of the households (14.5%) depends only on non-farm labour. The remaining part of the sample, roughly one third (35%), combines agriculture and non-agriculture. In many cases non-farm labour implies migration to nearby urban areas (Chennai and its surroundings), or rather commutation (short-term migration, a few days or a few weeks). The National Rural Employment Guarantee Scheme (NREGS), considered as the flagship programme of the Central Government (Raghbendra et *al.* 2008), had no noticable effects. In 2009, 16 households (4% of the total households) have one member (sometimes two) who considers the NRGEA to be a regular source of income.

[5] For an overview of the discrimination faced by *Paraiyars* in Tamil Nadu, see for instance (Deliège 1997, Kapadia 1996). For Irulars, see for example Thurston & Rangachari (1975).
[6] At the time of the survey, 24,000 INR worth 360 euros.

All households belong to Self-Help-Groups (SHG). SHGs are like micro banks of fifteen to twenty people who manage two types of loans. Internal loans are based on the savings of members, while external loans are provided by banks.[7] External loans are collective and the group decides on the allocations (selecting the recipients and amounts to be loaned). Savings services are mostly regarded as a constraint of eligibility and the amounts collected remain rather low. According to the data provided by both NGOs, SHG loans are similar to what is observed at the national level: loan amounts vary from 500 – 20,000 INR, with an average amount of approximately 5,000 INR loaned over relatively short durations (seldom more than one year).[8] The supply remains highly standardized and inflexible, with repayment based on monthly instalments.[9] Households were clients from only one microfinance NGO. However most of them were borrowing from various other sources, which can be broadly qualified as informal finance. This includes mainly pawnbrokers, door-to-door moneylenders, employers, sales on credit and "well-known people" (*terinjavanga*), a term used by the people themselves. These are well-off people (usually landowners, civil servants, certain categories of migrants) who are looking to invest their surplus income. Informal loans amounts display strong variations, ranging from 500 INR (minimum amount chosen for the survey) to 300,000 INR, with an average outstanding amount of 18,250 INR. We do not know the total period, since most transactions have no definite deadline. The length of time since the loans were contracted range from a few days up to 9 years, with an average duration of 18 months.

4. Assets and debt: main trends

We have compared outstanding debt and assets for the three years of the survey (2004, 2006 and 2009). The amount of outstanding debt increases significantly throughout the period

[7] In other cases, external loans can be provided by the NGO itself, or a federation of SGHs.
[8] In practice interest rate as well as amounts may differ from official rules.
[9] This is similar to the average supply at the national level (M-CRIL and MIX 2007).

(table 1)[10]. The average outstanding debt per household was 13,475 INR in 2004 (median 9,300), as against 19,077 INR in 2006 (median 12,900) and 33,194 INR in 2009 (median 20,000). It is also interesting to note that the *structure* of debt evolves. During the first period, on average, households borrowed massively from microfinance at the expense of informal finance (with a diminution of informal finance in both percentage and volume). During the next period there was a converse scenario: outstanding debt still increased significantly, mainly due to informal finance (with a significant increase of informal finance in percentage and in volume).

Table 1. **Oustanding debt***

N = 395	**2004**	**2006**	**2009**
% HH indebted	81 %	93 %	87 %
Average amount per HH (INR, €)	13475 (*202*)	19077 (*286*)	33194 (*498*)
Median (INR, €)	9300 (*140*)	12900 (*194*)	20000 (*300*)
Average amount microfinance per HH (INR, €) *(% total)*	2033 (*30*) *15%*	8377 (*126*) *44%*	8199 (*123*) *25%*
Average amount informal finance per HH (INR, €) *(% total)*	11442 (*172*) *85%*	10700 (*161*) *56%*	24995 (*375*) *75%*

* All monetary values are in index price 2009

The monetary value of assets increased significantly between 2004 and 2006 and then (2006-2009) decreased significantly (but the evolution during the whole period is still significantly positive). Assets include land, livestock, gold, durable consumer items such as televisions, tape recorders and fans, cycles and motorbikes, "productive" items such as sewing machines, bullock carts, auto-rickshaws and, for those who have a small business, working capital. Between 2004 and 2006 the evolution is significantly positive for livestock (cows and goats), gold, televisions and motorbikes. Such figures are in line with what has been observed in rural

[10] The evolution is positive and significant at 1% level (Wilcoxon test). Details of statistical tests are given in appendix.

Tamil Nadu over the last decades: a certain form consumerism (televisions and motorbikes) and an increasing ownership of high status objects (gold and cows are traditionally a high caste preserve) among the poor and the lower castes (Kapadia 2002; Olsen 2008). In the second period (2006-2009), the evolution is significantly negative for gold and livestock. These assets represent either a source of security (gold can be pledged), a source of income (livestock), or a source of social status (gold, cows). The loss of assets indicates both material impoverishment and loss of social status.

It is also worth noting that the rise in monetary value is partly due to the increase in the gold rate. The gold rate multiplied by 2.8 between 2004 and 2009, while gold represents an important part of asset portfolios (51% of the monetary value of assets in 2004, 56% in 2006 and 70% in 2009). For around one fifth of the households, the house value increased throughout the period as people renovate their houses. However the housing value is mainly symbolic and social in nature: there is no market for houses located in a *colony* (the section of the village reserved for low castes). Moreover, pledging one's house to get a loan is rather uncommon.

At the household level, diverse scenarios are observed. For the entire period, and calculated in monetary value, 21.8 per cent of the households lost assets, 71.2 per cent acquired more assets, while for 7 per cent there was no change (more or less 2,000 INR). Since the gold value has sharply increased it is also necessary to look at gains and losses of asset in kind: 65 per cent of the households have increased their asset between 2004 and 2009 but half of them lost part of their asset between 2006 and 2009. For 12 per cent there is no change while 23 per cent lost assets between 2004 and 2009. It seems that the increase in financial supply (microfinance and others) has allowed many households to borrow, partly to buy assets, partly for consumption. But after some time half of them met difficulties to reimburse their loans

and have no other choice than selling assets to pay off their debt or borrowing again (as indicated by the increase of outstanding debt).

Table 2. Assets*

N = 395	2004	2006	2009
Assets (monetary value without housing)			
Average (INR, *€)*	13600 (*204*)	30200 (*453*)	28600 (*429*)
Median (INR, *€)*	5400 (*81*)	23200 (*348*)	20500 (*307,5*)
Gold (weight in sovereign)**			
% gold owners	59 %	78 %	75 %
Average	1,37	1,97	1,77
Cows (number)	82	247	184
% cow owners	12%	30%	24%
Average number of cows per owner	1,8	2,1	1,9
Goats (number)	336	387	348
% goat owners	13 %	25 %	20 %
Average number of goats per owner	6,6	4,0	4,5
Televisions			
% TV owners	30 %	68 %	75 %
Motobikes			
% motorbike owners	6 %	12 %	14%
Net Wealth***			
Average (INR, *€)*	101 (*2*)	11100 (*167*)	4600 (*69*)
Median (INR, *€*)	-101 (*-2*)	6327 (*95*)	3000 (*45*)

* All monetary values are in index price 2009
** 1 sovereign = 8 grams
*** Net wealth = monetary value of assets (without housing) less outstanding debt

We then considered "net wealth" (i.e. monetary value of assets less outstanding debt). There is positive and significant evolution between 2004 and 2006, negative but not significant

evolution between 2006 and 2009, and negative and significant evolution over the whole period (see the appendix for further details). Here too households' patterns are contrasted. Half of the households (50%) increased their net wealth and for almost one quarter (22%) the increase exceeded 20,000 INR (between one half or one full year of household income). Conversely, for somewhat less than half (43%), the net wealth decreased and for one quarter (25%) the decrease exceeded 20,000 INR. This is mainly due to the combination of increasing debt and loss of gold, cows and goats that is to be observed between 2006 and 2009. For the remaining part (7%), the net wealth did not change (more or less 2,000 INR). If we consider net wealth as an indicator of financial vulnerability, we observe that the gap between the most secure (positive net wealth of more than 20,000 INR) and the most vulnerable (negative net wealth of more than 20,000 INR) has increased. The number of households in each category has doubled in five years.

Table 3. Net Wealth. Evolution 2004-2009

N=395	**2004**	**2009**
-20,000 and less	9,9%	20,0%
Between -2.000 and - 20,000	21,3%	23,0%
Between +1,999 and +1,999	35,4%	10,9%
Between +2,000 and + 20,000	22,8%	25,8%
20,000 Rs and more	10,6%	20,3%
	100,0%	100,0%

* All monetary values are in index price 2009, INR

Last, and not least, it is worth noting that as far as self-employment in the non-farm sector is concerned, changes are negligible: 7.7 per cent of the household members were self-employed in 2004, as compared with 8.3 per cent in 2009. Our figures reflect what is observed elsewhere in rural south-India: the percentage of self-employed people hardly exceeds 10 per cent of the population, and the figures are usually lower for the poor and for marginalized groups (Farrington et al. 2006: 25). People are looking for diversification, but mainly through

wage labour and short term migration to urban areas.[11] On the one hand, demand for agricultural labour is declining. Landowners abandon their land to invest in urban- based occupations: transport, moneylending, the sale of ground water, etc.[12] On the other hand, the demand for labour in Chennai and its surroundings has been constantly increasing over the last three decades and it seems that the crisis has not yet resulted in any noticeable slowdown, at least for these workers.[13]

What do these figures tell us? People borrow, reimburse and borrow again. At the same time they purchase goods, pledge them or sell and buy again. Most households are involved in an on-going process of indebtedness and debt reduction, capitalization and decapitalization. But some are more successful than others. What the figures cannot tell us is why some succeed better than others or what role microfinance plays in the diversity of patterns. Because of multiple and reciprocal interactions between various variables, it is very difficult to isolate statistically the role of microfinance. Drawing on qualitative analysis, the following section focuses on the dynamics and processes of financial vulnerability, identifies various households' trajectories and analyse the ambiguous role of microfinance in those trajectories.

5. The dynamics of financial vulnerability

High debt is not in itself a sign of vulnerability: all depends on how debt is combined with other forms of household assets. And it is here that the asset vulnerability framework is useful. We argue that debt is an indicator of financial fragility when it is not, or is only

[11] This is in line with global trends observed in various parts of rural India (Djurfeldt et al. 2008; Farrington 2006; NCEUS 2008).

[12] Those who have access to ground water sell it to Metrowater (Chennai Metropolitan Water Supply and Sewage Board). Water scarcities in Chennai have developed an extensive black market for water.

[13] As for the food crisis, as elsewhere food prices have significantly increased over the last few years. It seems however that they have been partly compensated both by public support (minimum price for the rice) and a significant increase in local wages.

insufficiently, combined with other forms of assets (assets being understood in the wider sense).

First, the level of debt should be compared to the amount of tangible assets (as we did above with net wealth). Some households are highly indebted but have been able to accumulate gold or cows; others have been able to renovate their house, which is a source of security. Conversely, some households have escaped from debt but have also partly depleted their assets, which is a source of vulnerability.

Second, debt should be compared to income. Loss in net wealth might be compensated (or not) in the mid term by a gain in income. We can reasonably assume that microfinance has negligible direct effects on non farm self-employment. What is observed however is an increasing dependency towards wage labour, with two scenarios: some households decide to go into debt (sometimes for very high levels compared to incomes) once one of the household's members is involved into wage labour; while others decide to work more in order to pay off a debt. Those who already work might work more (instead of going to Chennai two weeks per month, they will stay one month) and those who do not work will begin to do so (elders, women, children). We observe, for instance, that migration is often motivated or accelerated by the need to clear a debt (microfinance or another one). Some women consider that the obligation of repayment is the best way to force their "lazy" husbands to work. However, labour is not an infinite resource. When people are already full-time workers, and this is often the case for women, additional labour can translate into excessive workload, physical and mental fatigue. To bet on urban and wage labour to repay a debt is also very risky. Urban employment remains very precarious (based on daily wage or piece rate), uncertain and poorly paid, especially for low castes. And Chennai is no exception (Kapadia 2009).

Intangible assets also matter. High debt may have different consequences according to the nature and the intensity of the kinship relations in which people are involved. Debt might be repaid with the support of children, parents, brothers and sisters or any other relative. For instance, in the case of marriages and education, children are frequently expected to pay off part of the loan once they themselves are settled. Local patronage relations also represent an important source of support in terms of cash and of access to various services. "Well-known people", for instance, are a common and important source of cash, both cheap and flexible (Roesch and Héliès 2007; Guérin et al. forthcoming) In the long run, however, excessive dependency can be a source of vulnerability, and this is true in both cases.

Assets portfolios evolve over time both because of external events, positive or negative, and because of specific asset building strategies. Management of assets portfolios are very complicated because of simultaneous strategies, interrelationships between assets and strategy sequencing (Moser 1998): a strategy might reduce vulnerability in the short term but increase vulnerability in the long term (for instance selling assets to cope with an emergency) and vice versa (borrowing for investment) In the survey, people were asked to give details about the "big" expenses incurred during the five years before the 2009 survey. By "big", we mean those expenses exceeding 10,000 INR, which is considered by the people themselves as a threshold that makes sense. The results can be used as a reflection of households' priorities, households' constraints and households' asset building strategies. It was found that 290 households (73.9%) experienced at least one "big" expense (see table 4). The most frequent expenses are for social and religious ceremonies (weddings, puberty ceremonies, funerals and religious festivals) (48.35% of the households), followed by housing (17.5%), health (16.2%), productive investment, agricultural or not (10.9%), and education (9.4%). The amounts seem considerably high compared to income. The average amount spent on ceremonies is 66,720 INR: 81,970 INR for weddings (the equivalent of 2 to 4 times the annual income – the total

amount is usually much more, but part of the costs are paid by relatives), 14,600 INR for funerals, 18,440 INR for a puberty ceremony, 10,000 INR for a festival, 52,530 INR for housing renovation, 29,560 INR for medical expenses, 39,350 INR for education costs. The average cost for investments is 31,440 INR.

Table 4. "Big' expenses over the last 5 years

N=395	**% HH***	**Average amount (INR)**
None	26.6%	
Ceremonies	48.35%	66,720
Housing	17.5%	52,530
Health	16.2%	29,560
'Productive' Investment	10.9%	31,440
Education	9.4%	39,350
Other	5%	/

* Total exceeds 100% because of multiple responses

For all these expenses people do not hesitate to go into high debt. Selling assets is more a last resort strategy in case of unforeseen expense or for the repayment of past debts. Cultural and religious reasons might explain the high propensity of indebtedness in rural India (Malamoud 1980), but people also expect some sort of return. This is of the course the case for 'productive investments,' but it is also very much true for ceremonies, housing or education: all these expenses are part of an asset-building strategy. And as any asset building strategy, they are risky: some households are successful while others fail.

Two main trajectories: combination of shocks and risky investments

Following the 2009 survey, case studies were conducted with 16 households considered as financially vulnerable in the sense that they were highly indebted and had lost tangible assets. Two main trajectories emerge from qualitative analysis. In the first category, financial fragility is the result of successive shocks (principally illness, death, unexpected ceremonies, the loss of jobs), and these gradually weaken the households' asset portfolio such that tangible

assets dwindle (gold or land is sold), social networks become exhausted, and loan repayments take up a growing proportion of income. The rapidity and violence of the process depends both on the initial strength of the households' asset portfolio and the intensity of the shocks. What emerges from this example is the "sequence of activities" (Moser 1998). In the second category we find people who take risks, whether through livelihood diversification, or through strategies aimed at building intangible assets such as marriages, housing and education. According to the expenses data summarized in table 4, the second case is probably the more frequent.

Not only the major part of microloans are used for "social" purposes (as we shall see later) but for those who use it for business purposes, failures seem to be common. Markets structures are highly hierarchic and monopolistic, regulated and segmented along caste and gender lines (Harriss-White 2003). To start a business, even at a very small scale and within the informal sector, requires specific skills (acquired through experience rather than formal education) and social networks: networks with suppliers (being able to negotiate prices and good quality products, to pay on credit without too much overcharging), networking with public authorities (to avoid paying electricity, licenses and taxes when required), networking with clients (to finding a market but also bargaining skills to avoid too long delays in payment (Harriss White and Prakash forthcoming). The activities which are the most frequently financed through microcredit are tailoring and grocery shops. As far as tailoring is concerned, the poor quality of products (due to a lack of technical skills) can not withstand competition from manufactured goods or high quality hand-made products done by specific communities (especially *Mudaliars*). People want to buy "modern" items, including among the poor. Women want nylon *sarees* purchased in Chennai, not cotton blouses produced locally. As regards grocery shops, two main problems arise. First, selling on credit (which is the rule rather than the exception for daily items) is a permanent source of financial fragility. Second,

market saturation and displacement effects are very common. With more than two or three shops per *colony* (depending on the size of the colony), the market is completely saturated. In fact, local markets are very limited and probably increasingly limited. On the one hand, there is a growing mobility to urban areas. On the other hand, the traders themselves are coming to the villages. An increasing choice of items is now provided at the door-step, often on credit: vessels, clothing, and recently but durable consumption items (for instance televisions). Both activities (tailoring and grocery shops) can be efficiently used as a complementary income: a source of cash which can help for cash flow management on a daily basis (grocery shops) or a seasonal one (tailoring works better during festival seasons). However qualitative analysis indicates that prospects in terms of development are rather limited and failures are common.

Livestock is also a risky investment. A significant number of households bought cows during the first period (2004-2006). But from 2006 we see that the number of cows decreased significantly. 11.5 per cent of households owned a cow in 2004, they are 29.75 per cent in 2006 and 23.7 per cent in 2009 (the size of the herd slightly decreases, from 2.1 to 1.9). Qualitative analysis indicates that households loose cows for two reasons: death of the animal or sale, usually to pay off a debt which has lasted too long. Cow rearing is a risky and only negligibly profitable activity, especially for lower castes that lack both experience and market facilities. And when cows are bought on credit, the loss may have severe consequences because people are obliged to borrow again to get out of the initial debt. But rearing cows is also a matter of status. The social and symbolic value of cow is not any more an upper caste privilege. Lower castes also consider cows as a sign of wealth and use them for social and religious rituals. A woman who can afford staying at home to care for her livestock is also a sign of social distinction. The social and symbolic value of cows greatly exceed the financial benefits, but with a risk of suffering and financial vulnerability (Olsen 2008).

Marriages can also be considered as a form of "social investment"[14]. Prestigious festivities are a source of honour and esteem: marriages are used as indicators for the "quality" (*tharamana*) and "status" (*anthasthu*) of the family. People also say that marriages are instrumental for the "enlargement of social relationships" (*bandham valara*). Marriages also represent a certain form of self-insurance, both for the couple and for the parents who will be supported in their old age by their children and their spouses. But this is a long-term and risky investment: returns come sometimes too late, or are too small to offset the initial costs. The time frame of the research (5 years) was too short to capture long-term effects, but we met households that were already in great trouble. One was having difficulties because of false promises: a groom was supposed to pay back the loan contracted for the ceremony, but in the end refused to do so. In another case, the parents and the bride discovered that the groom was working temporarily in a school, but was not a permanent teacher (while this had been promised before the marriage and was supposed to help in the repayment of the loan contracted for the ceremony). In yet another case, the scale of the ceremony gave rise to conflicts and jealousy with the household's circle of relative, who then refused to help for the repayment ("if you are able to organize such big ceremonies, then manage on your own").

Housing renovation is a further asset building strategy: mud houses are transformed into concrete houses, after which people build veranda, additional floors, etc. People speak of housing as security against environmental hazards (flood, fire) and as an asset (*sothu*), even though the market value for *colony* houses is still inexistent. People also consider housing as a source of status (*anthasthu*) and a means to get a better deal for the marriage of their children: they clearly explain that the perceived "standing" of the house may allow them to look for a better-off family (*nalla vasathi aana kudumbam*). Here again we met people in trouble because of housing investment exceeding their repayment capacities. Some follow a cautious

[14] Kapadia (1996) and Heyer (2002) have documented the increasing cost of marriages for low castes in other parts of Tamil Nadu.

strategy by improving the house gradually. But others invest massively and are sometimes obliged to stop before completion and sell their entire asset in order to pay back the loans contracted for housing purposes.

Last but not least comes education. Many people want their children to get out of agriculture and manual work andconsider education as a way to obtain a “meaningful life” (*arthamulla vazkkai*) for their children and as a source of “status” (*anthasthu*), both for the child and the entire family. Education is also thought of as a source of “profit” (*labam*), with respect both to future income and improved creditworthiness. The job market for graduates and for holders of diplomas involving public jobs (e.g. teacher, nurse) is already saturated and obtaining a job is often conditioned by the payment of a bribe. The amounts are such that families are sometimes unable to pay (and many of them were not expecting to pay such amounts). We met one household indebted for 4 years of annual income for the education of their three daughters. They had borrowed from different local informal sources. Pawnbroking and microfinance were used simultaneously to pay the interest, but most of the jewels were already gone. They were expecting the elder daughter to pay back the capital once she had obtained a job as a nurse. The main source of uncertainty was the price she would have to pay to get the job.

Let’s turn now to microfinance.

The double side of microfinance

Microfinance does not operate in a no man’s land. Many households already have access to various sources of credit, mainly informal, which they patch together according to their needs or preferences, but also according to access facilities. The financial market is also very active. Notwithstanding microfinance, an increasing number of credit providers is emerging. Some landowners shift from agriculture to moneylending. Most of them lent money in the past, especially to their own labourers, but some have left agriculture to focus intensively and

solely on moneylending. Vendors of various items (vessels, clothing) have begun to provide doorstep sales with credit facilities. Door-to-door moneylenders are not new, but the number and the frequency of their visits are clearly increasing: in many villages moneylending at the doorstep is provided on a daily basis. Commuting to urban areas also opens new opportunities: workers can obtain loans from their place of work, especially from their colleagues, their boss or the contractor.

We mentioned above the strong and increasing demand for consumption. As argued by Polzin when analysing the institutional changes of the credit market in the small town of Arni in Tamil Nadu (Polzin, 2009), the demand for consumption is made easier by increasing credit facilities, and *vice versa*: both factors interact and feed each other. The emergence of new credit providers is associated with changes in consumption habits. Polzin also observes that microfinance is fully involved in this process, and this is also probably the case here. It is useful, however, to further explore the specificities of microfinance within the local financial landscape. According to a study conducted in 2006 by one of the NGOs studied here (3 years after the start of the microfinance program, among 1000 clients), 80% of the microcredits are used for "social" purposes (*ie* not generating direct income). The most common uses are repayment of old debts (25%), health expenditures (19%), daily consumption (14%) and education (10%). These results are instructive insofar as they highlight that microfinance is mainly devoted (at least in its initial use) to financial security, emergencies and education. However it is simplistic to focus only on how microcredits are used because of the fungibility of cash flows: we should also look at how microcredit influences households' financial management. Qualitative analysis indicates that SHG loans are a double-edged sword, two aspects making them stand out in comparison to other sources of credit. These are the rigidity and discipline of repayment modalities and the collective nature of SHG membership.

First, SHG loans can be used to improve household's financial security by helping people to extricate themselves from lengthy and sometimes (but not necessarily) costly debts.[15] Not only a significant part of microloans are used to pay off past debts (one quarter according to the survey quoted above) but the repayment structure (regular and rigid instalments) also acts as an incentive for faster repayments. What has been observed by Collins et al. (2009) is very much true here: regular repayments act as a form of "self-discipline" that many people appreciate. By contrast, most other sources (informal moneylending, pawnbroking, sale on credit, advances, etc.) rely on 'negotiability'. Repayment modalities and duration can be discussed, bargained and revised throughout the duration of the loan (Johnson 2004a; Rutherford 2001). Negotiability is well-adapted to the irregularity of cash flows and is instrumental in sustaining social networks (Guérin et al. 2009). Conversely negotiability is likely to maintain people in lengthy and sometimes costly debts (financially but also socially). However, and even when households have a preference for regular repayments (which is not always the case), the self-discipline principle may not be compatible with households' financial constraints. Borrowing from informal sources in order to pay back SHG instalments is very common. Some households juggle easily and unproblematically with multiple sources, but for others such juggling practices lead to a spiral of increasing debt that is sometimes difficult to stop. "It's like a web spider", some of them say: "once you are in, you cannot get out of it".

Using SHG loans to get additional sources of cash is not only the result of a constraint: it can be a deliberate choice. This is another fundamental aspect of microcredit in the area studied here: we observe that SHG loans and SHG memberships have a genuine leverage effect (at

[15] In terms of cost, SHG loans are cheaper than some sources but more expensive than others. Interest rates vary between 2% and 5% per month. Official rates are 2% for internal loans and 3% for external loans, but some groups decide to charge more to compensate for certain costs (travelling to the NGO or to the bank) and also in case of competing demands. The cost of pledging gold varies between 3% and 4% per month. As for the other sources, a systematic comparison is difficult because the price is subject to bargaining and varies according to personal relations between lenders and borrowers. The range varies between nil and 5%, although the cost is sometimes more for very small amounts lent by door-to-door moneylenders and for short periods (usually 100 days).

least for some households) insofar as they help SHG members to access other sources of cash. This leverage effect takes place through various channels. First, the repayment of past debts serves to preserve the borrower's reputation and/or to recover jewels and land that have been pledged, allowing the person to borrow again later from the same creditor. Being a SHG member is also a source of creditworthiness. Within local financial markets, creditworthiness includes many aspects: assets, income sources (amount and regularity), but also and above all questions of trust, reputation, notoriety, credit history and personal references. Also coming into the picture is the borrower's capacity to *access other sources of finance*, which are drawn upon in order to make repayments. By contrast with many other forms of credit, SHG loans (or at least SHG membership) are parts of local collective knowledge and therefore they can easily used as a guarantee. As summarized by one woman: "SHG make us trustable" (*nambikai*). Door-to-door moneylenders explicitly state that members of SHGs are privileged clients. Among lenders qualified as "well-known" people, some ask SHG leaders to act as guarantors for their peers. The women themselves use their status as SHG members to convince private lenders.[16] Finally, internal arrangements within the group allow some members to borrow amounts that are much higher than the maximum amount to which they are officially eligible. In the 2009 survey, 6 per cent of the households had an outstanding SHG loan of more than 20,000 INR (which is officially the maximum). We see that through various channels households manage to borrow substantial amounts of money that may exceed their capability to repay and increase their financial vulnerability.

6. Conclusion and policy implications

The main purpose of this paper has been to examine how microfinance impacts the financial vulnerability of households. 395 rural Indian households using microfinance were surveyed in 2004, 2006 and 2009. At a global level, a decrease in financial vulnerability was observed in

[16] David Mosse (2005) has observed exactly the same phenomenon in Orissa.

the first stage (2004-2006): households were increasingly indebted, mainly through microfinance, but they also bought assets such as gold, livestock and motorcycles. This was followed in the second stage (2006-2009) by an increase in financial vulnerability: debt was still increasing, mainly via informal finance, while households were losing assets (gold, livestock). Strong disparities and contrasting patterns between households were also reported. We have thereafter made use of qualitative methods to understand the diversity of patterns and analyse the role of microfinance.

In demonstrating these complex causal chains and their multiple effects, which are not only direct and indirect but also circular and retroactive, our study contributes to a growing body of evidence that points to the need for contextualized and holistic studies aiming at analysing the social impacts of microfinance. The implications of microfinance should be understood in the larger context of neoliberal economies (Fernando et al. 2006; Rao 2008; Servet 2006). However at the household level, it is our argument that the understanding of microfinance uses and processes is inseparable from the local dynamics pertaining to employment, financing and consumption. The context under study has three characteristic elements (and our results should be interpreted accordingly): a growing dependence on urban wage labour (which is highly irregular, precarious and poorly paid), the pursuit of social status mainly through consumption and 'social investments', and an increasingly large credit supply (to which microfinance contributes without being the only factor).

Our main result consisted in saying that microfinance in itself is neither good nor bad: it all depends on how it is articulated with the entire range of management strategies of household assets (assets being defined in a very broad sense, including social assets). Here microfinance is used but very little to directly change the livelihood of families, which are more in search of wage labour. Microfinance is more likely used in the case of emergencies or to improve the financial security of the household, either through the repayment of past debts or the

acquisition of assets. The specificity of SHG loans (regular repayments) fulfils the demand for self-discipline expressed by many households (Collins et al. 2009). However, the desire for self-discipline may exceed repayment capabilities; in those cases, instead of replacing informal finance, SHG loans increase the demand for it. SHG loans are also used (directly or indirectly) to invest in "high-status" objects – and here our observations are in line with those reported by Wendy Olsen (2008) in Andhra Pradesh. The investment in status objects involves a real accumulation strategy in the long term, but it is a strategy entailing risk. In demonstrating that microfinance effects also depends on the manner in which it is used and articulated with other financial tools, the study also contributes to a large body of evidence that highlights the overlapping and reciprocal interactions between microfinance and informal practices (Bouman and Hospes 1995; Johnson 2004; Lont and Hospes 2004; Morvant-Roux 2006, 2009; Servet 2006; Sinha and Matin, 1998; Villarreal 2009a; Zeller et al. 2001). An interesting aspect of our research results is to look at the indirect effects of microfinance. We have seen that microfinance may improve the borrowers' reputation and allow them to access other sources of cash. The improvement of the borrower's solvency is merely artificial. It is based on the capacity of the borrowers to solicit other sources of cash (microfinance) and not on their real capacity to pay: whence, here again, the risks of financial vulnerability. These risks can nevertheless be compensated for by alternative strategies (in particular, working more or relying on family support).

Turning to policy, our case study raises a number of questions related to redistribution issues. How long this headlong flight into debt can last? In the light of our data, and even if they cover a specific area and a specific population, one can wonder if India is not about to follow the North American model where credit for lower classes maintains an illusion of growth (or no recession), while redistribution mechanisms have come to a halt. In our case study, urban migration is also part of the strategies used by households to offset the contraction of local

employment opportunities, while consumption needs are increasing. During our last visit in the summer of 2009, villagers continued to be attracted by the lights of the city. The present crisis does not seem (yet) to have any impact on the job supply for these migrants. But here too, one can wonder how long this headlong flight into urban employment can continue, and what are the consequences on the global dynamics of the job market? Migrant labourers, cheaper and more disciplined, have always been and continue to be a variable of adjustment and a way to compress costs for the Indian economy (Breman 2007; Breman et al. 2009; Srivastava 2005). It is therefore quite possible that the present crisis fuels the demand for migrant labour: the steady stream of migrant workers would not reflect the dynamism of Chennai economy: it could rather be a response to the growing need for productivity gains and costs reductions for employers.

Our results also contribute to current debates as to whether microcredit should be used (or not) for consumption. Drawing on intensive research conducted in various parts of the world, Collins et al. (2009) argue that microcredit not only be reserved for a "productive" use, but also be considered as a tool serving consumption. Two lines of argument are put forward, the first being that it is already a reality, given that in many cases the poor already "divert" microfinance and use it for expenditures related to health, education, the repayment of past debts, etc. But the authors also believe that there is an extraordinary opportunity, to "open up the biggest single market it is likely to find among the poor" (Collins et al. 2009: 180). In the light of the case study presented here, this argument is perfectly legitimate – the poor also need to borrow for social needs. But should we not also consider the risks of consumer credit (Villarreal 2009b)? And should we not rethink the conditions, particularly in terms of cost? If there is no increase in income and no redistribution mechanism, debt necessarily causes impoverishment. This is a very simple mechanical effect, unless it is free of cost, but this is not the case in microfinance. The risks are even greater, given that the desire to consume is

most probably increasing among the poor, as we have seen here - and our case study is probably no exception. In the Indian context, the Indian government has always played an active role and is still very active in the matter of financial inclusion. In the course of the last decade, the development of the SHG movement has been strongly supported by the Indian public authorities (in particular, the National Bank for Agriculture and Rural Development, NABARD). In 2005, the Reserve Bank of India announced an active policy of financial inclusion, the objective being to enable every Indian household to open a bank account and then to access credit facilities. It makes not doubt that a better financial inclusion. Such measure is only meaningful under two conditions. The first is that of consumer protection. Financial inclusion should not be only a matter of access: policy makers should also look at how people make use of credit facilities. To enable the poor to borrow is certainly laudable, but to permit and encourage people to borrow considerable sums, as we have seen here, is problematical. The second condition is that of employment. In the context under study here, microfinance neither resolves the problem of employment, nor that of the diversification of Indian rural economies (Farrington et al. 2006). It probably obliges people to work more during the period of the loan, but there is no direct effect on the livelihood of the households. The crisis has not translated yet into tangible effects Given the very limited impact of microfinance in terms of job creation, such actions must be combined with broader action to promote labour standards and jobs through a “high-road” development strategy (based on enhancing productivity, wages and demand), together with employment generation in rural areas through such measures as land reform, infrastructure development and industrial decentralization (Mahajan 2005).

Appendix

Table 5. Wilcoxon signed Ranks Test

Variables	*Wilcoxon z*	Asymp. Significance (%)
Outstanding debt (INR)		
Debt_2006-2004	-6.143 (a)	0.000***
Debt_2009-2006	-6.228 (a)	0.000***
Debt_2009-2004	-8.535 (a)	0.000***
Monetary Value of Assets (INR)		
MonVal_Assets_2006-2004	-13.044(a)	0.000***
MonVal_Assets_2009-2006	-2.468(b)	0.014**
MonVal_Assets_2009-2004	-9,831(a)	0.000***
Net wealth (INR)		
NetWealth_2006-2004	- 5.842 (a)	0.000***
NetWealth_2009-2006	- 1.551 (b)	0.121
NetWealth_2009-2004	- 5.035 (b)	0.000***
Gold weight per household		
GoldWeight_2006-2004	-6.723 (a)	0.000***
GoldWeight _2009-2006	-2.643 (b)	0.008***
GoldWeight_2009-2004	-3.093 (a)	0.002***
Number of Cows		
NbCow 2006-2004	-7.081 (a)	0.000***
NbCow 2009-2006	-3.97 (b)	0.000***
NbCow 2009-2004	-5.173 (a)	0.000***
Number of goats		
NbGoat 2006-2004	-4.487 (a)	0.000***
NbGoat 2009-2006	-1.219 (b)	0.223
NbGoat 2009-2004	-3.230 (a)	0.001***
Number of motorcycles		
Motor_2006-2004	-4.522 (a)	0.000***
Motor_2009-2006	-1.169 (b)	0.866
Motor_2009-2004	-4.082 (a)	0.000***

a. Based on negatives ranks (if significant, the test then confirms the increase between the two years).
b. Based on positive ranks (if significant, the test then confirms the diminution between the two years).
* Significant at 10%
** Significant at 5%
*** Significant at 1%

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