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Bolivia during the global crisis 1998-2004:
towards a 'macroeconomics of microfinance.

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Abstract. The macroeconomic role of microfinance appears to have varied enormously between country cases, as notably exposed by the recent wave of macro-economic crises. For example, in Indonesia in the late 1990s microfinance appears to have played a notably counter-cyclical role, whereas in Bolivia, the main focus of this paper, its role was in most cases to intensify rather than restrain the crisis. We find part of the explanation for this in the behaviour of government towards microfinance (much more conciliatory towards defaulting debtors in the Bolivian case) and in the structure of demand (unfavourable, in Bolivia, to the distribution and service sector which is the main market for microenterprise). However, closer examination of the Bolivian case suggests that institutional design also played an important role. In particular, those organisations which provided savings, training and quasi-insurance services bucked the trend of rising default rates and falling lending through the crisis and did particularly well, whereas the new breed of consumer-credit microfinance organisations did particularly badly and in several cases went out of business. This experience suggests,in particular, that it may be appropriate to call into question the fashionable' minimalist' (credit-only) model of microfinance, as certainly in Bolivia it was principally the credit-plus institutions which proved more financially disciplined and more resilient to crisis.

1. Points of departure

In many countries of the South, including Indonesia, Bolivia, Bangladesh and Kenya, microfinance has achieved a significant role within the macroeconomy, but this role has never been investigated on a comparative basis. Particularly in times of macro-economic crisis, it is important to know whether microfinance is likely to act as a shock-absorber , tending to restrain the magnitude of fluctuations, or as an accelerator, tending to amplify them. In relation to the recent global crisis, Patten and Rosengard (2001), have argued that in the midst of a severe macro-economic collapse in Indonesia between 1998 and 2000, lending and savings deposits within the Indonesian microfinancial system and in particular the BRI (Bank Rakyat Indonesia) unit desa system experienced continuous increase, as a consequence of which investment by small businesses was able to increase as well: microfinance was acting as a shock-absorber. But these tendencies are not seen everywhere: for example, in Bolivia, which is the focus for this study, several institutions which provided much of the motive force for the Bolivian economy during the boom of the 1990s (Rhyne, 2001) declined even more severely than the national economy, and microfinance, *prima facie,* has exercised scarcely any countercyclical influence

in the aggregate. The function of this paper is to understand, not only why the macroeconomic influence of microfinance seems to have differed between these two cases, but also what policy instruments and institutional design features might be able to enhance the 'positive' role of microfinance during a crisis. In this way we hope to contribute to an emerging broader debate (see Hardy et al, 2002) on how the role of microfinance institutions in the national economy can be optimised.

2. Management of the Bolivian crisis: 1998-2004

It is useful to remember that in Bolivia microfinance derived its initial impulse from a much more serious crisis than the one which currently afflicts the country. It was the hyperinflation of 1985, and the consequent loss of confidence in the formal financial sector, which created an opportunity for microfinance NGOs to offer, over the following ten years, a financial product which had previously been inaccessible for small Bolivian enterprises (Fischer et al 1992; Glosser 1993; Hulme and Mosley 1996, ch 9). The other factors favouring a spectacular growth of microfinance in this period derived from the consequences of a structural adjustment process of proportions almost rivalling those of eastern Europe, which pushed many thousands of people out of mining and other state employment into self-employment, in which function they found themselves strongly supported by several donors (especially USAID and IDB) and by a centre-right government which saw microfinance as a particularly appropriate technique (Newman et al. 1991) for 'mitigating the social cost of adjustment'.

Under the stress of these changes, the Bolivian macroeconomy experienced a pronounced structural change away from the primary (agriculture and mining), and in favour of the tertiary sector[1] – the principal market for most microfinance institutions. This was favourable for the nascent microfinance sector: at the end of 2002, it accounted for less than 6% of all savings deposits, only 9% of the portfolio, but 57% of bank customers (*Microfinanzas,* December 2002, Annex 1) and the small business sector, now principally served by microfinance institutions, supplied an estimated 80% of all employment.

Under the impetus of a creative regulatory environment which allowed a number of microfinance NGOs to convert themselves into banks or 'private financial funds'[2], the Bolivian microfinance sector had by the middle of the 1990s achieved not only rapid rates of growth but also serious profits, with BancoSol for several years achieving the highest rates of profit of any financial institution in the country[3]. These profits, in the classical manner, attracted new entrants into the industry, in particular consumer-credit houses (*FFPs de consumo).* Several of the new entrants, such as

[1] Rhyne(2001), table 2.1, states that between 1985 and 1989 the share of manufacturing within the informal sector declined from 31% to 17%, whilst the share of trade and services grew from 35% to 56%.

[2] *Fondos financieros privados(FFPs):* nonbank financial institutions authorised, unlike NGOs, to take deposits from the public.

[3] The entire microfinance sector earned a return on assets of 4.8% in 1997, which had fallen to –0.5 per cent by December 2002.

the FFPs ACCESO, CrediAgil and FASSIL, put nearly all their eggs into the urban microcredit basket, but with important changes of procedure. They offered larger loans than established microfinance organisations and commercial banks, generally for the purchase of consumer durables such as televisions and washing-machines rather than business assets; and their techniques of loan appraisal were much more casual, involving no proper assessment of capacity to repay. Under the pressure of this competition several of the established credit providers, including BancoSol and PRODEM, increased their loan size also[4], and in the process none of the players in the game noticed either the deterioration of portfolio quality that was taking place or the increase in customers' overall debt-service ratios, as bigger and less well-supervised loans were thrust at an already over-exposed market. The entry of these new players was so rapid[5] , indeed, as to unbalance the entire microfinance sector and to create a serious problem of over-indebtedness even *before* the global crisis hit Bolivia in 1999 (Marconi 2002). The main focus of all this overlending was the urban sector, where economies of scale could more easily be achieved and the perceived costs of lending kept down. There were some occasional successful experiments in rural credit, such as the FFP PRODEM and the NGO CRECER, but the growth of these organisations was heavily limited by their dependence on donor financing(FINRURAL 1998).

Thus the Bolivian microfinance sector, for all its diversity and creativity, entered the global financial crisis (which hit Latin America only in 1999) with four important disadvantages: (1) over-indebtedness caused by the entry of the consumer-credit FFPs ; (2)anxiety and uncertainty about clients' repayment capacity[6] in the light of this over-indebtedness; (3) a strong urban bias to loan operations; and (4) a persistent weakness, especially in rural areas, in the mobilisation of savings. All of these circumstances contrast with the situation in much of Asia and, in particular, with the situation of Indonesia as described by Patten *et al.*

Within this context we may now examine the crisis which hit Bolivia (together with other Latin American countries such as Brazil and Argentina) at the beginning of 1999, long after it struck East Asia and Russia. As may be seen in table 1, the onset of this crisis was immediately signalled by a collapse of domestic investment, eventually reflected in a withdrawal of foreign capital. In Bolivia, there were by 2002 serious contagion effects from the crisis in neighbouring Argentina, as Bolivians found themselves barred from repatriating their savings. At the level of microfinance institutions, also, there was a fall in the amount of credit lent, but this fall was spread very unevenly across the different actors within the sector.

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[4] ' Before the middle of 1999 (BancoSol) introduced a whole heap of new financial products, generally aimed at a higher market stratum than that occupied by solidarity groups. It placed itself in competition with conventional lenders by increasing its maximum loan size from $30,000 to $100, 000. It introduced mortgages, *giros en descubierto,* and consumption loans. [It also introduced a minimum limit on savings deposits, thereby discriminating against low-income consumers – *Authors*] An employee protested: "The end of the world occurred when BancoSol offered a $50,000 loan to the Roda family" '(a well-known rich Bolivian family). Rhyne 2001: 153-154.

[5] For example: the clients of ACCESO grew between 1995 and 1998 from zero to 90, 000 – a larger number of clients than BancoSol had achieved in twelve years.

[6] At this time there existed a risk-assessment service operated by the Superintendency of Banks, but accessible only to the 'regulated' sector (FFPs and banks)

Table 1. Bolivia: main indicators for macroeconomy and microfinance, 1997-2003

	1997	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Real economy							
GNPper capita (in current US $)		1070	1023	1016	949	883	870
Real GDP growth (%)		5.2	0.4	2.4	0.0	2.5	2.6
Investment/GNP(%)		23.8	18.4	17.3	17.0	15.0	12.5
Savings/GNP(%)		16.0	12.5	11.8	12.7	13.4	
Urban unemployment rate(%)		5.3	6.1	6.8	7.3	7.4	8.0(2)
Estimate of headcount poverty(%)	*65.6*(1)				58.6		
External sector							
Exports FOB (in US $ mn)		1104	1051	1230	1296	1381	1650
Imports CIF (in US $mn)		1759	1539	1610	1529	1519	1684
BoP Current account/GNP(%)		-7.8	-5.9	-5.5	-4.3	-3.6	0.2
Foreign investment/GNP(%)		11.9	12.9	10.7	8.7	8.3	4.5(3)
Monetary sector							
Inflation (end of period, %)		4.4	3.1	3.4	2.5	3.0	3.9
Exchange rate (end of period) Bs/$		5.7	6.0	6.4	6.8	7.2	7.6(4)
Average real exchange rate(1997=100)		96.6	95.3	98.0	99.1	103.3	
Microfinance sector							
Total value of portfolio (US$ millions)	236.3	299.4	276.0	246.5	291.0	315.4	326.2
Banco Sol and microfinance FFPs (US $ millions)	93.4	140.9	161.8	181.8	205.7	230.5	245.8
Consumer-credit FFPs (US $ millions)	88.3	109.0	47.9	24.4	19.6	6.9	
NGOs (US $ millions)	37.6	49.5	61.3	64.5	65.7	78.0	80.4
Estimate of investment by microenterprise sector (US $ millions) (5)	72.4	166.2	48.1	14.7	41.9		

Source: Banco Santa Cruz/Muller y Asociados, E*stadisticas socio-economicas 2001;* FINRURAL, *Microfinanzas* (latest issue June 2003)*;* most recent data from Instituto Nacional de Estadistica (www.ine.gov.bo)

Notes (1)*:* Figure is for 1995 and derives from INE, *Encuesta integrada de hogares 1995,* La Paz 1997.
(2) 'Government estimate', from *La Prensa,* 23.12.03.
(3) Estimate for first six months of year, grossed up to year as a whole.
(4) 2003 average.

(5): The estimated value of investment by the microenterprise sector is the value of lending by each institution in each year, weighted by a coefficient which measures the average relationship between loan value of investment for the following institutions: BancoSol, PRODEM, Pro Mujer yand SARTAWI. For details of the method of estimation see Mosley(2002), table 6.

In face of the crisis each actor had to determine her or his own coping strategy. We now examine the strategies adopted by three key actors: the state, the suppliers of microfinance and the small businesses who constituted their market.

The state

Towards the end of the boom, in the elections of 1998, the centre-right government of Gonzalo Sanchez de Lozada was replaced by the former dictator Hugo Banzer. Banzer's economic policy mixed together opportunistic liberalising gestures aimed at the IMF[7] with much more interventionist actions aimed at a working-class electorate impoverished by the sudden slump. In relation to the microfinance sector, the new government's policy was counterproductive in the following senses: (i) whilst microfinance continued to be trumpeted as a distinctive Bolivian solution to poverty, various measures were taken to damage its potential (for example the *Ley de Aduanas* (Customs Duty Reform Act) of 2000, which radically reduced customs duties on a whole range of consumer goods – in particular goods of low-income consumption such as second-hand clothes – and thereby destroyed the market and the loan repayment capacity of many small-scale manufacturers of such goods; (ii) several legislative actions, notably the *Ley de Propiedad y Credito Popular and Ley de Condonacion de Deudas* (Debt Forgiveness Act), also of 2000, alleviated the burden of debt for various bankrupt parastatal agencies and in the process undermined the repayment ethic for *all* – including microfinance - borrowers; (iii) a determination to dilute methods of regulation which might have a political cost – most clearly seen in the case of the *Superintendencia de Bancos* itself, which having most valuably created the category of 'registered nonbank financial intermediaries' (*entidades financieras fiscalizadas)* in the mid-1990s, was then forced to condone the illegal operating practices of the consumer-credit FFPs, to introduce new rules which limited debt-service payments to 25% of salary (Rhyne 2001:147); (iv) having pushed various microcredit wholesalers (such as FONDESIF) into the rural areas, the state bought back much of the high-risk portfolio of these organisations, thereby creating a moral hazard problem which reacted adversely on these organisations' arrears position. Through these contradictory policies the Banzer government first inflated and then pricked the credit bubble of 1998-9, in a manner which led to a general collapse of confidence in the market for microfinance services. When the Sanchez de Lozada regime returned in early 2002 it was powerless to achieve any calm de-escalation of the expectations which the Banzer government had fomented; there was severe rioting in protest at the government's economic policy in February and October 2003, and de Lozada himself was forced to resign and flee the country in late October. Whether these events[8] should be seen as a cyclical blip or as a return to Bolivia's traditions of chronic state instability is too early to say; but they have certainly made harder the recovery of investment and of the macro-economy.

[7] For example, throughout the crisis no increases were allowed in the level of real public spending or in the fiscal deficit (see Table 1).
[8] See further footnote 18 below.

Financial institutions

Microfinance institutions' strategies and performance in face of the crisis were very diverse, as pictured in Table 2 and Figure 1:

(1) Commercial banks shrank their lending earliest (in late 1998) and have continued to shrink through the crisis, with total lending in 2003 less than three-quarters of what it was in 1998.

(2) BancoSol and the *registered nonbank financial intermediaries* (FFPs) maintained a gently growing volume of deposits and lending, with arrears, however, rising from a low base to an average of just over 10% . Within this group, there are two notable 'positive outliers', with higher rates of portfolio growth and lower rates of arrears – FIE and Caja Los Andes.

(3)The *consumer-credit FFPs* which emerged to take advantage of the boom proved completely unable to withstand the recession: all were unable to retain any loyalty with their hard-pressed clients; as a consequence, they experienced rapidly-rising default rates and could no longer sustain their portfolios (Table 2). ACCESO and CrediAgil, born in 1997, have already expired, and FASSIL continues to experience very severe problems of viability.

(4)Among the *NGOs,* again, we observe divergent performance. A majority, as with the FFPs, were forced to labour against decreasing demand and increasing default rates; but two institutions, both practising a village-banking model and lending principally or exclusively to low-income women (CRECER and ProMujer) grew against the general trend, whilst continuing to experience default rates of less than 1 per cent.

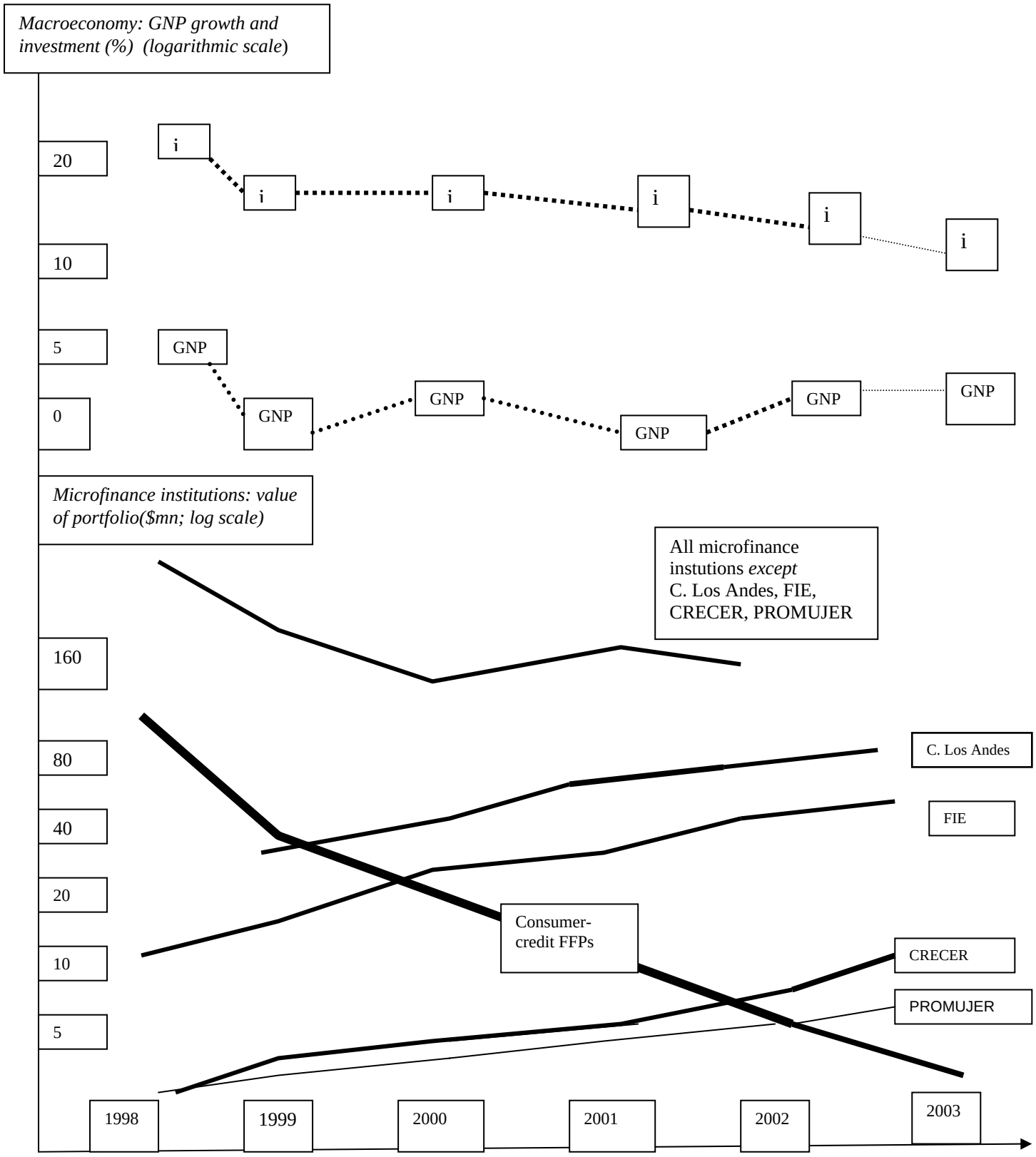
Table 2: Bolivia: indicators of microfinancial performance, 1997-2003 (portfolio in $ millions; default rates expressed as percentages)

	1997(Dec)	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Commercial banks	3185	4023	3786	3174	2769		2827
Cooperatives and mutual societies	426	469	457	465	442		459
Microfinance houses:							
BancoSol*:							
Portfolio value $mn	63	74	82	77	81	81	84
Portfolio in arrears (%)	*1.9*	*4.5*	*7.0*	*12.3*	*14.7*	*9.4*	7.6
Microfinance FFPs:							
PRODEM							
Portfolio value $mn	18	24	21	23	33	44	46
Portfolio in arrears (%)	*1.7*	*16.7*	*15.2*	*3.1*	*7.9*	*5.3*	5.2
FIE**							
Portfolio value $mn	12	14	19	22	27	35	36
Portfolio in arrears(%)	*2.7*	*1.5*	*6.2*	*7.9*	*8.0*	*6.5*	4.9
Caja Los Andes**							
Portfolio value $mn		28	35	46	52	64	69
Portfolio in arrears(%)		*5.8*	*6.5*	*7.6*	*8.1*	*5.8*	4.1

BancoSol and all microfinance FFPs, total							
Total portfolio value $mn	93.4	140.9	161.8	181.8	205.7	230.5	245.8
Portfolio in arrears %	*2.0*	*4.6*	*6.7*	*9.3*	*11.0*	*7.3*	
Consumer-credit FFPs:							
Acceso							
Portfolio value $mn	80	88	32	5	1	Insig.	*No*
Arrears rate %	*20.0*	*19.9*	*31.9*	*29.4*	*7*	*0*	*data*
Fassil							
Portfolio value $mn	13	19	15	13	8	6	*No*
Arrears rate %	*8.6*	*14.1*		*15.7*	*22.6*	*40*	*data*
Consumer-credit FFPs, total							
Portfolio value $mn	88.3	109.0	47.9	24.4	19.6	6.9	
Arrears rate %	*19.4*	*19.4*	*29.6*	*20.9*	*29.5*	*39.8*	
NGOs:							
ProMujer							
Portfolio value $mn	2.3	2.1	2.2	3.4	3.8	4.5	4.6
Arrears rate(%)	*0.4*	*0.4*	*0.6*	*0.3*	*0.6*	*0.2*	0.3
CRECER							
Portfolio value $mn	1.3	2.0	2.8	3.5	4.5	5.8	6.6
Arrears rate(%) (%)		*2.3*	*0.4*	*0.3*	*0.3*	*0.5*	0.4
SARTAWI							
Portfolio value $mn							
Arrears rate(%) (%)	2.5	3.1	3.3	5.0	4.7	5.1	4.3
	3.9	*5.4*	*6.0*	*8.3*	*23.0*	*17.2*	17.2
ANED							
Portfolio value	5.8	6.4	7.2	7.4	8.3	10.5	10.8
Arrears rate(%)	*4.7*	*5.1*	*7.3*	*10.5*	*15.7*	*19.0*	28.0
Other NGOs							
Portfolio value	34.3	47.5	42.7	50.8	34.0		
All NGOs							
Portfolio value $mn	37.6	49.5	61.3	64.5	65.7	78.0	80.4
Arrears rate(%)	*4.5*	*6.8*	*7.1*	*10.5*	*12.1*	*13.2*	
Total microfinance sector:							
Portfolio value ($mn)	236.3	292.0	257.1	246.5	291.0	315.4	367.8
Value of savings ($mn)			188.3	240.3	223.8		
Arrears rate(%)		*10.1*	*8.0*	*11.5*	*13.0*	*10.2*	

Source: FINRURAL, *Microfinanzas: Boletin financiero,* 06/03 (available at www. finrural-bo.org)
Notes: ** only offers individual loans, *offers some individual loans.

Figure 1. 'The sheep' and 'the goats': portfolio, arrears rates and estimated investment rates, 1997-2003 (Source as for Table 2)



Thus, once we penetrate below the surface of the Bolivian 'collapse' – both macro and micro - we perceive a number of divergent trends. A majority of institutions did indeed behave in a procyclical way, especially during 1999 and 2000, but four did not, and exhibited the same countercyclical tendencies that can be observed with BRI and other microfinance institutions in Indonesia; and these four were not confined to a particular institutional type, but rather can be found among both the 'highly commercialised' FFPs and among the apparently unworldly NGOs. Hence, it looks as though simple one-factor explanations are likely to be found wanting; but let us penetrate further, in the hope of trying to find lessons which microfinance providers and their sponsors can use.

The key feature which we observe in Bolivian microfinance with the onset of the crisis is a *shift in the balance of market power:* as one employee of FASSIL put it, 'Before [the mid 90s], the institution chose the client. Now, the client chooses the institution' (Rhyne 2001: 153-154). Once the crisis took hold, a situation arose in which many clients had multiple debts outstanding to several different institutions, not all of which could be repaid; and the very helplessness of their predicament gave them power to 'choose the institution', and determine which creditor should be repaid first. Why were ProMujer, CRECER, Caja los Andes and FIE the chosen institutions?

Let us begin with the NGO cases ProMujer and CRECER. These institutions differ from other NGOs in Bolivia in the following manner (table 3):

- In the first place, in both institutions the clients are purely female; a characteristic associated almost worldwide[9] with higher repayment rates, whether because women are more risk-averse, or have fewer possibilities of obtaining credit outside microfinance, or take more seriously the consequences for their children of their failing to repay, or a combination of the above.
- Secondly, average loan size is smaller; hence the possibilities for exercising political leverage on the creditor - (or, in the manner described above, on the Superintendency of Banks) in order to induce forgiveness of the loan are smaller.
- Thirdly, both institutions use a 'village banking' methodology in which emergency loans are offered in case of need (on a vote of clients within a solidarity group) from an 'internal account' financed by a surcharge on the interest rates paid by all members. In Bolivia, as in other developing countries, it is very hard for low-income people to gain access to insurance[10], which inhibits their room for manoeuvre in the event of a sudden adverse shock such as market collapse, children's ill-health or burglary. The 'internal account' provides a modest form of insurance, and thereby of managing debt, not available to clients of other Bolivian NGOs.
- Finally and perhaps most importantly, the village banks provide credit as a 'means and not an end in itself' (Marconi 2002:4), within a package comprising technical training, health services, advice on legal rights and political education. In other words they practice an 'integrated' rather than a 'minimalist' model: a model which, however much out of fashion with the microfinance establishment (Otero and Rhyne 1995, Robinson 1996; and

[9] Indonesia, interestingly, appears to be an exception; Hulme and Mosley(1996), vol. 2, chapter 11.
[10] The 2000 *World Development Report* (World Bank 2000: 143) states that 'insurance markets are virtually non-existent in developing countries'.

even, in the current context, Rhyne 2001) compels intense loyalty from the women who benefit from it, by offering a range of services going far beyond a substitute for collateral. This loyalty leaves no room for doubt, in the event of crisis, as to who will be the first creditor to be repaid.

Table 3. Bolivian microfinance organisations; Performance indicators and possible explanatory factors

Indicator	ProMujer and CRECER	Other microfinance organisations
Well-being indicators (as of December 2002)		
Poor and destitute(%)	38.3%	10.6%
Without lowest level of education(%)	14.1%	5.1%
Asset value $	421.6	924.4
Average annual sales $	757.9	2502.8
Performance indicators (annual average 1997-2002)		
Growth of portfolio	24.7%	5.7%
Growth of customer base	26.2%	-5.3%
Default rate	0.6%	9.8%
Return on assets	6.9%	-1.9%
Design characteristics		
%female clients	98%	57%
'Internal account' for emergency loans	Yes	No
Loan modality	Village banks with solidarity groups	Solidarity groups, with the exception of FIE, Caja Los Andes, most of BancoSol, and the consumer-credit FFPs
Average loan size($)	134	901
Training services offered?	Yes	No (except for FIE)

Source: performance indicators and design characteristics from FINRURAL, *Microfinanzas,* June 2003 edition; well-being indicators from preliminary results of impact evaluation studies of microfinance organisations conducted by FINRURAL for Ford Foundation.

If these hypotheses explain the success of PROMUJER and CRECER, what can be said about the case of FIE and Caja Los Andes, which are FFPs lending to individuals at a far higher average level of income? In the first place, both institutions maintain very successful systems (initially developed by the German consultancy IPC) for the appraisal and monitoring of clients, which have enabled them to cream off the best clients, keep track of their overall indebtedness, and collaboratively work out fallback strategies in conjunction with clients as the crisis began to bite. In the second place, FIE, like PROMUJER and CRECER, has always used an 'integrated lending model' in which training is blended with credit, although in recent years the training function has been hived off into a separate department (Rhyne 2001: 88-91).

The interesting aspect of the success of PROMUJER, CRECER and FIE is that it contradicts the 'lemons model' of Akerlof (1972; see also Stiglitz and Weiss 1981) which states that in a market with asymmetric information caused by uncertainties about product quality – which the Bolivian microfinance market certainly is – bad products will, by analogy with Gresham's law, drive out good and the nice guys will finish last. In Bolivia it is the bad guys (the consumer-credit FFPs), who sought to live purely by the rules of the market, who have been, over the course of the recession, virtually driven

out of it and (at least some of) the nice guys, who have sought to provide services and have been driven by principles going far beyond the requirements of loan recovery and profitability, who have succeeded in it. Of course, a part of this unusual result is due to the consequences of regulation by the Superintendencia de Bancos - a parameter not contained in the models of Stiglitz and Akerlof; but this is not the whole story. Another part of it consists in the approach of the 'nice guys' to their clients, which took it as axiomatic that clients' motivation was not purely economic, and based elements of the microfinance package – training, legal services, health and education services – on this supposition. These elements have turned out to be important components of clients' coping strategies during the recession, hence the fact that they have induced loyalty in repayment towards institutions which provided those services. During the crisis, this approach turned out more successful, as a means of achieving loan recovery and growth in the portfolio, than the more materialistic strategies used by the consumer-credit FFPs and even by BancoSol (table 2 above).

Clients

We consider the behaviour of clients at two levels: as individuals and in terms of the groupings of clients which emerged from 1998 onward. In both contexts the recessionary atmosphere, the consequent emergence of ' social movements'[11] as alternative actors to conventional political parties and trade unions and the frequent calling of electoral commissions at local and national level were crucial in moulding client behaviour.

In this context, a variety of debtors' cartels sprang up, responding to a varied range of motives. The first debtors' protest was organised in El Alto, responding to local political motivations[12] and extending eventually into other regions. The importance of this movement is that it achieved recognition both from the state and from the various bankers' associations[13] through the establishment, on 15 October 1999, of a first 'Framework Agreement' between the new 'Small Borrowers' Association' and

[11] For example, in Cochabamba the 'Coordinadora del Agua' emerged as a movement disputing the privatisation of water and the consequent price increases; and in the Chaco appeared, again, a *Movimiento Sin Tierra* proposing a redistribution of land rights in favour of smallholders and the landless.

[12] 'A handful of 'professional' union organisers began gathering members into debtors'associations to protest against the consumer and microfinance lenders. These associations grew quickly, because organisers promised members debt forgiveness. The leaders claimed to speak for several thousand borrowers. The associations staged protests, mainly at the offices of ACCESO, CrediAgil, and other consumer lenders, but even at Caja los Andes and BancoSol. A few association members engaged in hunger strikes, a tactic with a long history in Bolivia (it contributed to ending military rule in the 1980s). Through such tactics the associations attempted to take the moral high ground by painting the leaders as exploiters of the poor. In petitions to various authorities they accused the leaders of using humiliating tactics against debtors – hiring mariachi bands to perform outside a debtor's house all night, painting the word *debtor* on the house, or broadcasting the names of debtors over the radio. They blamed the lenders for provoking every kind of social ill from suicide to prostitution. They demanded full debt forgiveness.

The affected institutions, working through their newly created association ASOFIN, sought aid from the courts to stop the demonstrations… Eventually, the debtor associations forced their way into a dialogue with the Superintendency of Banks and ASOFIN, in which the microfinance lenders agreed to consider debt relief to association members on a case-by-case basis'. Rhyne 2001: 146. During the more severe disturbances of 2003, the Aymara and Quechua- dominated opposition parties, the MAS and MIP, began to support debt moratoria in the *altiplano* (*La Prensa,* 23 December 2003)

[13] ASOBAN represented the banks; ASOFIN represented BancoSol, the FFPs and the NGO AGROCAPITAL; FINRURAL the other financial NGOs; ASOCOP the savings and credit cooperatives; and UNIVIV the building societies (mutuals for house purchase)

ASOFIN, FINRURAL and CrediAgil, with the government's Superintendency of Banks acting as a mediator. This association collapsed under its own weight when the leaders of the movement were denounced by their own members, with one of the leaders being jailed for a short time on suspicion of fraud. In the later wave of political protests in 2001 there emerged a 'National-level Debtors' Movement' (*Organisacion de Deudores en General a Nivel Nacional)* with a more explicitly economic motivation under the leadership of a female lawyer who was able to convince thousands of borrowers to demand 'forgiveness of all microfinance debts'. This cartel occupied the offices of the Superintendency of Banks, terrorist-style[14], on the 2nd of July 2001, and a second agreement was signed[15] two days later between it and the bankers' associations, providing this time for the rescheduling of microfinance debts on a massive scale, and actual cancellations in the case of banks and FFPs. At the end of 2002 new debtors' groups emerged, often associated with specific individuals who had evolved from microfinance clients into quite large-scale debtors with consequent political leverage[16]. It has to be emphasised, however, that the third and bloodiest wave of political protest during the current recession, on 12 / 13 February and 16/17 October 2003, was not directly associated with any of these debtors' movements[17]. We would argue that the debtors' movements represented the political and economic interests of a minority of microfinance debtors; notwithstanding this, the widespread reschedulings and the government's offers of a 'hospital for sick enterprises' to be provided by state development banks contaminated the repayment ethic of *all* clients and offered to *all* clients the option of seeking a way out of their difficulties by political action rather than by increasing productivity and seeking to widen their market. This erosion of loan discipline reduced the ability of the microfinance sector to respond in a countercyclical manner and probably prolonged the recession.

With the coming of the crisis, therefore, clients became exposed to greatly increased levels of risk, caused partly by the recession itself and partly by ever-increasing, and in some cases self-justifying, anxieties about the ability of microfinance institutions to manage their own portfolios effectively. In face of these increased risk levels, microfinance institutions had to work out their own survival strategies. In relation to the Bolivian case we may present the range of possible survival strategies in figure 2, in which the client seeks to maintain a balance between the rate of return on its portfolio (r in the diagram) and a measure of the riskiness of that portfolio, such as the variance of yields (σ). Thus the client chooses the path which she wishes to follow between the upper boundary (XX') and the lower boundary(YY') of the capital market. The more risk-averse the client, the more she gravitates to the left-hand bank of the

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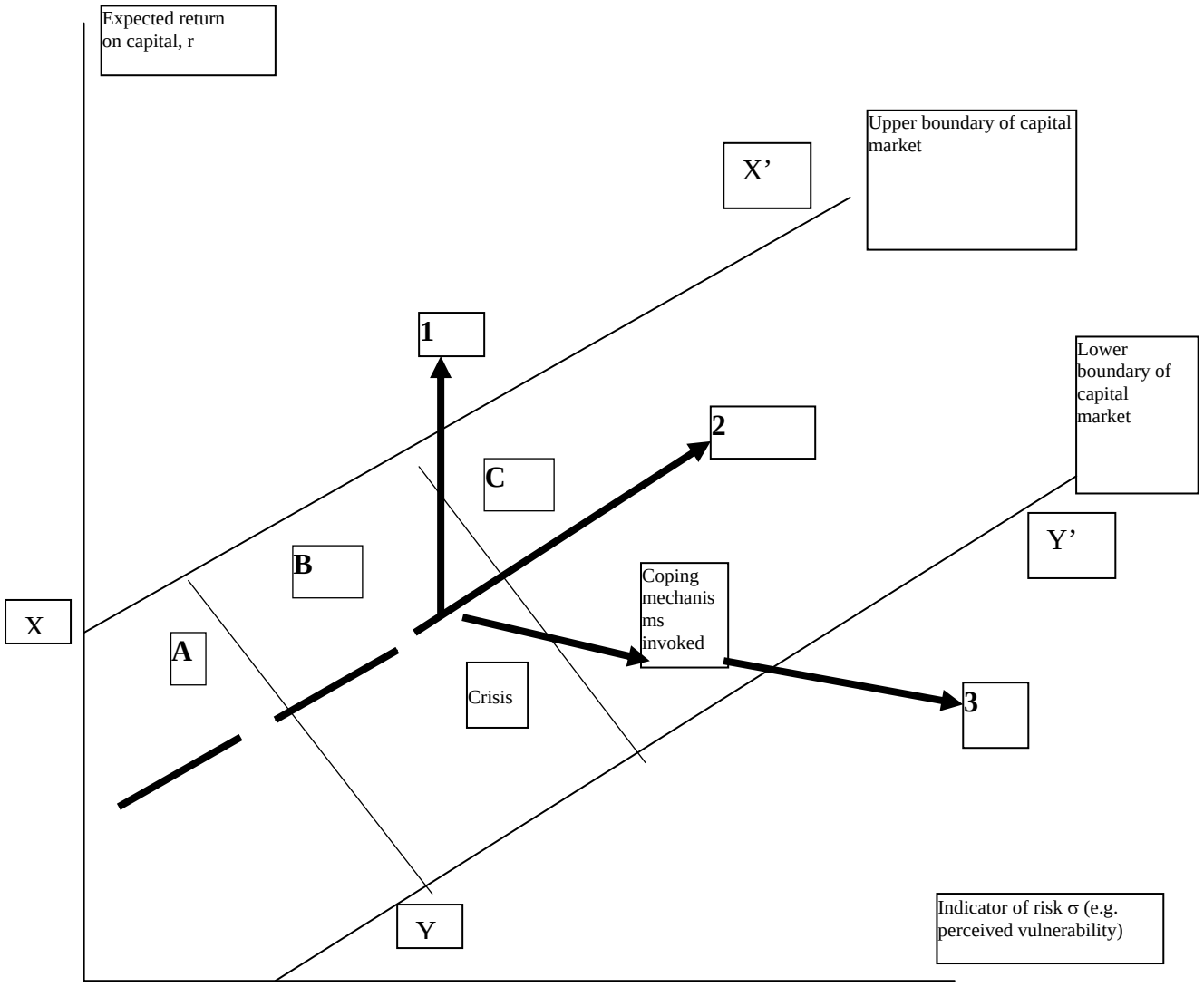
[15] The signatories were the new debtors' association and the bankers' associations ASOBAN, ASOFIN and FINRURAL; mediation was provided by the Superintendency of Banks.

[16] On 27 January 2003, under the initiative of the now ex- Minister for Financial Services, more rescheduling negotiations took place between representatives of financial services organisations and three different debtors' associations.

[17] Note, however, the possible provocative influence of the debt moratoria organised by the *Movimiento Sin Tierra* (see page xx above).The trigger in February 2003 appears to have been, in the first instance, a proposed increase in income and corporation tax, which initially gave rise to non-violent street protests, but in the second place and crucially, to the decision by many police officers to side with the protesters. The government, alarmed by this, sent in the army, and of the estimated 30 who died in the subsequent bloodshed, it is estimated that 14 were in the police and 7 in the army. In October, the trigger to the riots was a government plan to export oil and natural gas at a time of persisting domestic fuel shortage. On both occasions there was a wave of looting which did take in the premises of microfinance banks, notably BancoSol, but there is no evidence that any of this violence was planned or carried out by debtors' associations.

river, and the more she seeks to avoid the dangerous right-hand bank, where the jaguars and the anacondas are to be found. Our assumption is that the need to avoid risk is most urgent for the poorest clients (in zone A), for whom its consequences are the gravest because they have least physical, human and social assets to fall back on; and that this group, therefore, are the most likely to adopt 'protectional' coping strategies (intra-group solidarity for their businesses and protection of consumption standards), by contrast with the better-off groups in zones B and C, who have greater risk efficacy (assets and strategies available to protect them against risk), and can thus embrace with much less anxiety 'promotional' strategies involving the purchase of fixed capital assets and the forming of networks outside the community.

Figure 2. Risk , yield and the client's 'expected growth trajectory'



Key to symbols:

Zones of the capital market and patterns of borrower behaviour:
A : low risk, low yield, very low income and asset levels, financial services demanded as 'protectional' services, mainly in the form of savings. Social capital almost entirely 'bonding' (e.g. solidarity groups)
B : moderate risk, moderate yield, financial services demanded mainly for working capital with very small fixed capital investment . Social capital mainly 'bonding', some 'linking" to groups in other activities and regions.

C : high risk (unless insurance available), high average yield, financial services demanded for fixed capital equipment (esp. housing and vehicles) and labour hiring as well as fixed capital. Social capital 'linking', 'bonding' and 'bridging' to upper levels of administration..

Possible outcomes for individual borrowers:

1: the 'super-ladder': risk and return reduced at the same time.

2: the normal ladder: borrower balances yield and risk through a sequence of loans, with stable or increasing levels of labour and capital input.

3: 'the snake': coping mechanisms unable to cope with increased levels of risk; borrower falls into default, and ultimately quits the capital market.

What happens, of course, may diverge from what is expected, as in the case of the crisis under discussion. This shrank the market available to each client (the thick arrow on Figure 2); in other words it reduced the return on capital a client could expect and/or increased the risks associated with a given return, and thereby pushed them towards the dangerous right bank of the river. The client's economic behaviour in face of such a shock, her long-term investment behaviour and even the contribution she is able to make towards any counter-cyclical contribution of microfinance depends on the degree of success of the risk management strategies adopted. Many possible options exist (see World Bank 2000 ch.8 for the general case, and Mosley 2001 and Sebstad and Cohen 2001 for Bolivian illustrations) but we suggest the following hypotheses for later examination:

(i) The better the access a client has to anti-risk protection mechanisms (savings, insurance, or the PROMUJER/CRECER 'internal account'), the easier it is to continue with strategies which protect or even increase the level of assets, rather than strategies which require the erosion or disposal of physical, human or social capital.

(ii) The harder a group of clients is hit by an external shock, the more important is the level of internal solidarity within the group (*bonding social capital)* for protecting both the morale of clients and their ability to work out creative escape routes from the crisis. There is some evidence that the training methods of CRECER, PROMUJER and FIE are effective in achieving such protection (Sebstad and Cohen, 2001).

(iii) But if the forces of intragroup solidarity are weak, they are threatened in time of crisis by pressures which split the group, turn its members away from the path of increasing their productivity and their market, and turn them down the alternative path of trying to find a political rather than an economic solution to crisis, such as for example debt cancellation (for further illustration, consider Case Study 1 below). One method of avoiding these divisive intragroup pressures is heavily-supervised individual lending, as practised within our sample by FIE and Caja los Andes, and indeed also by Bank Rakyat Indonesia.

These differences not only help to explain differences between clients but also between institutions. We can illustrate the available strategies, and the factors which influenced their success, with two case studies:

1 BancoSol client, 1993-2002. This client, from 1993 to 1999,was one of BancoSol's superstars[18]. The expansion and diversification of his leather-manufacturing business from a small domestic to a large export market (and from a single room to a large four-storey house) is described in Mosley(2000). In 1999 he left the solidarity group and became an individual borrower. In 2000 his sales collapsed in dramatic manner (from $2500 to $850 per month) principally on account of the collapse of his market in Cochabamba. This was a period in which, as will be recalled, there were violent protests

[18] He is portrayed as such in Mosley(2001)

in Cochabamba against the increase in the price of water and other public services; as a consequence there developed, in particular in that city, a climate of non-payment of all debt, which impinged on the microfinance sector including this client. The client's response, portrayed as (3) on Figure 2, can be described as high-risk[19]:

- He obtained additional loans worth $26,000 from Caja Los Andes;
- He continued to accumulate assets but with a bias towards housing: between 1999 and 2002 the value of enterprise assets increased from $(US)2700 to $4370, but the value of housing assets from $10016 to $20193;
- Having been damaged by loan default, he became a defaulter himself; in June/July 2001 he joined the defaulting debtors' movement to try and achieve large-scale debt rescheduling (see above) and he ceased payment of instalments to his original creditor, BancoSol, with effect from November 2001;
- Now he is in arrears with both BancoSol and Caja Los Andes at a level of $11800.

He is now in an unenviable predicament (very close to the dangerous bank of the river in Figure 2), hoping that his market will improve before the banks foreclose on him for the arrears on his own debts; indeed, on the day that we called to interview him he was in Cochabamba pursuing his own defaulting clients. The interesting aspects of the case are the importance of political factors in determining the vigour of localised domestic markets, and also the influence of 'psychological factors' – in particular the client's denial of the gravity of his own position, which drove him to adopt a high-risk coping strategy.

2 ProMujer client, 1999-2002. This client, a member of a solidarity group within a 'village banking' organisation, manufactures knitwear and jackets for the local market. Her sales grew through the early years of the crisis, 1999 and 2000, but fell in 2001. In response:

(i) she obtained an emergency loan from the ProMujer internal account;
(ii) she took one of her children out of school and thus reduced, in the short term, the value of her human capital investment;
(iii) she became involved in a new enterprise (essentially a take-away restaurant accepting contracts with small local firms), but operated this on a communal basis with colleagues within the ProMujer group, thereby sacrificing some individual gain, but strengthening bonds of solidarity.
(iv) In addition she became engaged in informal political activities, campaigning with other colleagues for control over the imports of second-hand clothing whose liberalisation had damaged many small clothing businesses (see page 5 above)

Here we see the interaction of an institutional design instrument (the ProMujer internal account) with a coping strategy which, depicted as (1) in Figure 2, is much more risk-avoiding and collective in nature than the first case study. Only social capital assets (investment in communal economic and political activities) were allowed to increase; human capital investment, as we saw, was cut, and physical investment did not alter. But economic security did increase, in the first instance as a consequence of the emergency loan from the village bank, and over the longer term because the loan was reinvested in

[19] Many thanks to Julio Cesar Herbas of BancoSol with help in updating this case-study.

a manner which deepened the bonds of individual trust between the client and her colleagues.

The 'market'

As illustrated in particular by Case Study 1 above, no enterprise can function without a market. Consequently, we must conclude our examination of the macro-role of microfinance with an examination of the contrasted behaviour of different sectors of the Bolivian economy.

From table 4 it is clear that the 1998-2002 recession was strongly differentiated between economic sectors. Agriculture was the first to experience a negative shock, with the collapse of soya prices in 1998; retail and wholesale trade were the next to decline, in 1999, in a manner strongly connected with the over-expansion of microfinance, and after a gentle recovery in 2000 there was a new and more generalised recession in 2001, which affected all sectors including wholesale and retail trade.

Table 4. Rate of increase of demand (gross domestic product) for various sectors, 1997-2001

Sector	*Annual rate of increase in real GDP (at 1990 prices) (%)*						
	1997	*1998*	*1999*	*2000*	*2001*	2002	2003
Agriculture	1.0	-4.5	2.5	3.7	1.1	0.6	
Manufacturing	1.0	2.4	2.9	1.7	1.1	1.8	
Wholesale and retail trade	3.7	3.5	-0.2	2.7	0.3	1.8	
Services, restaurants and hotels	5.8	5.1	3.8	2.1	1.9	3.0	
Total	4.8	4.4	1.5	2.0	1.1	2.5	

Source: Muller y Asociados, *Estadisticas socio-economicas 2002,* La Paz 2002, table p.31. Updated from www.ine.gov.bo.

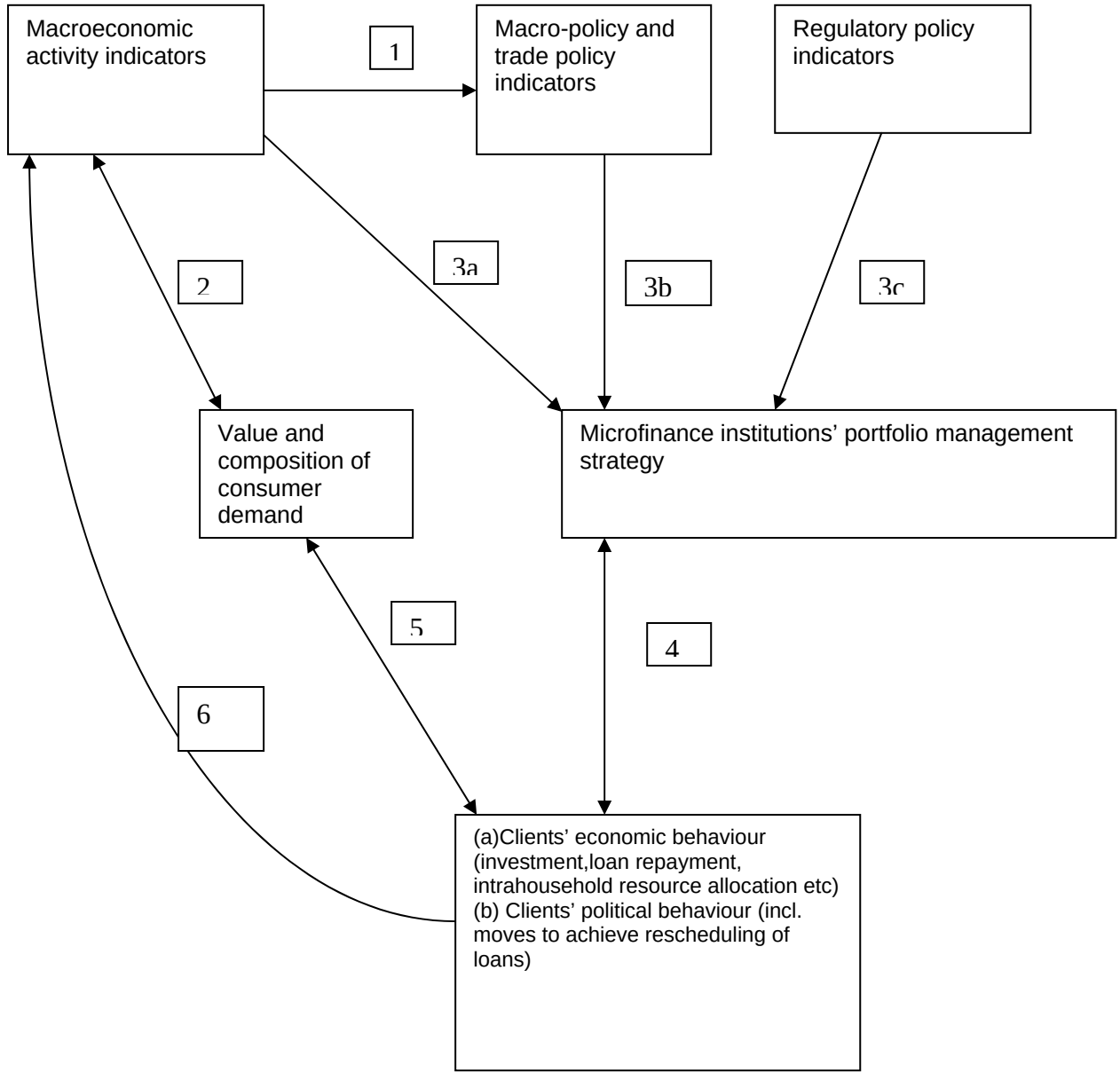
It can be readily seen that the sector most affected by the recession have been wholesale and retail trade (which did not help BancoSol or PRODEM, two of the microfinance institutions with their eggs most concentrated in this basket), and since 2001, agriculture. Until 2001 one of the sectors least affected by the recession was manufacturing, which was helpful to FIE, one of the few microfinance institutions to dedicate a large part of its portfolio (more than 30%) to small industrial enterprises. In the following section we shall use the weighted average rate of growth of demand for each sector to try and explain the performance of the various microfinance sectors, especially in terms of their investment rates and their macroeconomic leverage.

3. 'Micro-macro linkages': an initial portrait

In this section we attempt to convert the preceding argument into a model which makes possible an analysis of the linkages between microfinance and the macroeconomy. Our particular wish is to understand the circumstances under which microfinance (or rather, particular components of the microfinance sector) sometimes serve as a brake, and sometimes as an accelerator, in face of a macroeconomic crisis.

The six basic links in the chain are depicted in figure 3 below (an analytical version is given in the Appendix).

Figure 3. Macro-micro linkages: the basic model structure



1. Macroeconomic policy: in this sector of the model, government actions are applied by means of fiscal instruments (government spending, taxes and customs duties) and monetary policy; and also sometimes by means of direct intervention in the regulation and rescheduling of microfinance loans, as described above. In our simple model all of these interventions are left exogenous (link 1 in the model); however, we treat the level of investment by small enterprises as variable according to the degree of government intervention in the microfinance sector.

2. Consumption and imports: vary in the normal way with the level of income.

3.Behaviour of microfinance institutions: We assume that the volume of loans which any institution makes within a defined period depends on:

- The rate of growth of demand of the sector(s) towards which the production of that organisation's clients is oriented – which acts as a constraint on the rate of growth of the market;
- The effects of national economic policy, which as mentioned above affect not only the level of demand, but also, as we have observed in Bolivia, impinge on default rates;
- Default rates themselves, which constrain the financial sustainability of the microfinance organisation and its ability to make new loans;
- External financing, concessional (i.e. aid) and non-concessional, which directly influences the assets of microfinance NGOs, and as we saw, fell radically through the years of crisis;
- Finally, the attitude of the microfinance institution towards external financing, which includes and influences the institution's view of its future prospects.

4. Client behavour . We split total investment into that part carried out by microenterprises (the informal sector) and the part carried out by other public and private enterprises (the formal sector); and in this model we treat investment by the formal sector as exogenous (or, alternatively, determined in the conventional way by interest rates and the growth of demand). Investment by the informal sector, of course, also depends on the growth of demand for the products of that sector, and we recall from Patten et al. (2001: 1065) that it was the resilience of demand for this sector in Indonesia which provided much of the basis for BRI Indonesia to increase its lending through the 1998-2000 recession. However, there are also influences on the supply side, which as we have seen have an important influence on the client's willingness to increase its assets in order to meet this demand, such as:

- The range of financing options available;
- The existence or non-existence of 'quasi-insurance options', such as savings facilities or the 'internal accounts' of the village banks, which can protect a client from going into arrears in the event of a failed investment;
- Expectations about the future which do not involve an extrapolation of past trends.

5. Inequality and poverty. Microfinance has the potential to reduce poverty – for many institutions this is the primary objective. According to our earlier analysis (Mosley 2001) this potential is being realised in the case of many Bolivian institutions, not only through direct effects on the borrower but also through indirect effects on labour markets and

on enterprises which are connected to client enterprises through backward and forward linkages.

6. The composite effect of microfinance. Thus the impact of microfinance is a double one: there is a direct, and fairly quick, impact through the national income multiplier, and there are indirect and often more gradual impacts operating through institution-building, training, social capital impacts, etc.

In this way it is possible to visualise, and in principle estimate, the links between microfinance and macroeconomy. However, the results which follow are subject to three limitations: first, some of the data, especially those related to investment by small business, are of imperfect quality, as we shall proceed to describe[20]; secondly, the very simple construction of the model may exclude linkages which are important for the model's conclusions (for example, we focus on the behaviour of *micro* finance and *micro*enterprise, and we assume that investment by this sector bears no relation to investment by large enterprises, but this may be an error); finally, in our present state of knowledge concerning the 'wider impacts' of microfinance some of them have to be left out of the story (e.g. table 6 below). Given these omitted linkages, we hope that our estimates of the impact of microfinance can be seen as conservative.

Some of the estimated relationships which follow are either completely conventional in nature (for example the consumption and import functions – linkage 2) or else are taken from research already carried out (e.g. poverty impacts – linkage 5). Here, therefore, we shall focus on the relationships which drive the model – those relating to the lending of microfinance institutions (link 3) and investment by microenterprises (link 4). In tables 5 and 6 we present the results of regression analysis on these two variables. The data analysed there (48 observations) are panel data taken from eight microfinance organisations for the years 1997-2002.

According to table 5, lending by microfinance institutions increases with the level of demand (weighted according to the portfolio of the institutions in the sample), and falls, significantly, with the arrears rate, as might be expected. The political dummy is positive, suggesting a positive, but, short-term effect of rescheduling on investment. The 'insurance' dummy variable does not appear with the expected sign; we would stress that we do not see the 'internal account' mechanisms of the village banks as a necessary condition for portfolio growth, but rather as one possible device, which, in conjunction with other design features, may protect portfolio quality.

[20] See further the Appendix.

Table 5. Determinants of lending by microfinance institutions

Dependent variable: change in total value of portfolio ($ millions)
Ordinary least-squares analysis

Regression coefficients on independent variables :						R^2
Constant	'Political' dummy[3]	Growth of demand[1]	'Insurance dummy'	'Individual lending dummy'[4]	Arrears rate[2]	
6.45		0.067 (0.15)	-5.76** (2.95)	-7.17** (3.94)	-0.36* (2.34)	0.31
5.70	4.26* (2.38)	0.158* (1.88)	-5.14** (2.78)	7.39** (4.32)	-0.41* (2.38)	0.41

Notes and sources: Number of observations =48 (annual data for 1997-2002 inclusive for BancoSol, FIE, ProMujer, PRODEM, SARTAWI, Caja Los Andes, ANED, CRECER).
Figures in brackets below coefficients are Student's t-statistics. ** denotes significance at 1% level, * denotes significance at 5% level.
[1]*Demand* is calculated as average (weighted by sector) annual growth of demand for the clients of each institution. For the weights (the distribution of each institution's portfolio by sector) see *Microfinanzas,* (FINRURAL, La Paz), December 2002 edition, tables 2.6 and 2.7.
[2]*Arrears rates* from *Microfinanzas,* (FINRURAL, La Paz), December 2002 edition, .
[3] *'Political dummy':* 1 in years and for institutions where loan rescheduling was negotiated on behalf of some clients; 0 otherwise.
[4]*'Individual lending dummy':* 1 for years and institutions where some or all clients received individual rather than group loans; 0 otherwise.
[5]*'Insurance dummy':* 1 for years and institutions where clients had recourse to some kind of emergency-loan or insurance facility; 0 otherwise.

Estimated investment by the microfinance sector (table 6) rises, as expected, with the rate of growth of demand (the accelerator relationship) , with the volume of credit extended and with the availability of 'defences against risk' (σ). The 'insurance dummy' variable does not have a significant relationship with the level of investment, but it does have a significant relationship with the *rate of growth* of investment, as portrayed in table 6.

Table 6. Estimated determinants of investment by the microenterprise sector (ordinary least squares estimation)

	Dependent variable		
	Estimated investment by microenterprise sector (in $ millions: see note 3)		*Growth of investment by microenterprise sector (%)*
Regression coefficients on independent variables:			
Constant	0.35	0.7	-43
Volume of saving	0.014 (1.37)	0.021* (2.01)	
Growth of demand[2]	0.04* (2.16)	0.036** (2.47)	0.34* (2.07)
'Insurance dummy'[5]	-0.61 (0.94)		5.83** (2.64)
'Defences against risk' dummy[4]		-0.57* (2.48)	
'Individual lending'dummy	-1.50 (1.81)		-10.26 (0.11)
Value of lending($mn)	1.54* (2.25)	2.22** (2.67)	3.90** (2.56)
Number of observations[1]	48	48	48
R^2	0.65	0.69	0.77

Notes and sources: [1] Observations are drawn from the institutions BancoSol, PRODEM, ProMujer, FIE, SARTAWI, Caja Los Andes, ANED and CRECER over the years 1997-2002 inclusive.

[2]*Demand* is calculated as average (weighted by sector)annual growth of demand for the clients of each institution. For the weights (the distribution of each institution's portfolio by sector) see *Microfinanzas*, (FINRURAL, La Paz), December 2002 edition, tables 2.6 and 2.7.

[3]*The estimated value of investment for the microenterprise sector* is the value of lending by each institution in each year, weighted by a coefficient which measures the average relationship between the value of lending and investment in 1998-99 for BancoSol, PRODEM, ProMujer and Sartawi, which is then applied to all institutions in the sample (Appendix Table 9 below).

[4]*'Defences against risk' dummy* varies with the extent of voluntary savings and quasi-insurance within the institution in question; for method of computation see Appendix Table 10.

Volume of saving and *value of lending* are from FINRURAL, *Microfinanzas: Boletin financiero,* 12/02 (available at www.finrural-bo.org)

[5]*'Insurance dummy':* 1 for years and institutions where clients had recourse to some kind of emergency-loan or insurance facility; 0 otherwise.

We now have estimates, albeit not always very good ones, for all the links in the model of Figure 3. Using these estimates, we calculate the value of investment in the Bolivian microfinance sector at an average of $68 million[21] between 1997 and 2002; that is, 6.5 per cent of gross national investment. This implies an average annual contribution to gross national product by the microfinance sector over those years of $122 million, or 4 per cent of GNP. The share of the microfinance sector is greater in boom years such as 1998 (given that on average, as we have seen, Bolivian microfinance institutions followed a procyclical tendency) and smaller in recession years. But, following the argument of this paper, it would appear that this contribution can be increased if:

(i) the pattern of demand shifts in favour of the sectors which are supported by microfinance;

[21] For derivation see the Appendix (table 9)

(ii) the state abstains from actions which are hostile to sustainable microfinance, such as debt rescheduling ;

(iii) the design of microfinance institutions is amended in a manner which will assist financial discipline – for example by means of the devices which we have examined in this paper, such as savings and (quasi-) insurance.

If we use the estimates presented in tables 5 and 6, we obtain the following extremely provisional estimates (table 7) of the possible impact of these modifications in policy and institutions:

Table 7. Estimated effects of 'design changes' and other macroeconomic influences on Bolivian GNP

Change in policy or institutional design	*Effect on:*	
	Microenterprise sector investment ($mn and percentage of GNP)	*GNP ($mn and percentageof GNP)*
Exogenous shocks 1% increase in foreign investment	4.0 (0.45%)	8.0(0.1%)
1% increase in annual demand growth rate for wholesale and retail trade	2.1(0.02%)	3.6(0.04%)
Design changes for the microfinance sector Increase in voluntary savings of $20mn, brought about by conversion of 3 NGOs into FFPs	$16mn(0.18%)	$29mn(0.32%)
Increase in availability of insurance, brought about by adoption by three NGOs of 'internal account' (or insurance modality)	$2mn(0.02%)	$3.6mn(0.04%)
Decline in microfinance arrears rates from 12% to 5%	$9mn(0.09%)	$17mn(0.2%)

Estimation method:

For effects on GNP: $(\Delta Y/\Delta X)$, where X is an influence which we wish to measure, is equal to $((\Delta Y/\Delta I_m)(/\Delta I_m/\Delta MC)(\Delta MC/\Delta X)$ where ΔI_m =change in investment by the microenterprise sector and ΔMC = change in credit to the microenterprise sector.

We estimate $(\Delta Y/\Delta I_m)$ as 1.8 in Bolivia (see Appendix); estimates of ΔMC and other variables on investment are displayed in table 6, and the determinants of credit creation by the microfinance sector (ΔMC) are diplayed in table 5. Thus for example, the effect of arrears rates on GNP is estimated as $(\Delta Y/\Delta X)$, = 1.8 (0.42 (estimated from table 6))(-0.36MC (estimated from table 5 = $17mn(0.2%) in 2001.

Finally we must emphasise that in order to understand the extent to which the microfinance sector exhibits pro-cyclical or anti-cyclical behaviour, the fundamental relationship is the investment relationship within the microenterprise sector (of which a first estimate is displayed in Table 9 of the appendix). It is clear that whether microfinance imparts a procyclical or an anticyclical impulse to the macroeconomy depends on whether the 'accelerator effect' of the microenterprise sector's demand on its investment, which is procyclical by definition, is or is not cancelled out by the other countervailing factors bearing on its investment level. In Bolivia (by contrast, for

example, with Indonesia) this counterweight, in its totality, has not been sufficient to prevent the total economic activity of the microenterprise sector from falling even more than the macroeconomy during the 1997-2003 recession. But, as we have described, there is enough institutional inspiration even within Bolivia to give hope that by judicious measures of reform these procyclical tendencies can be moderated, there and possibly in other countries, in the future.

4. Implications and conclusions

Very recently, during 2004, evidence has emerged to suggest that Bolivia is at last beginning to emerge from the global macroeconomic crisis which, in recent years, has been particularly severe in the Southern Cone of Latin America. That the microenterprise sector would be damaged by this crisis, as it was in Bolivia, is to be expected from the conventional relationship between demand and investment. But the existence of counter-examples – not only the case of Indonesia in 1997-2000 brought up by Patten et al, but those provided by a large literature on the informal sector which suggests that it and the organisations which finance it can provide a shock-absorber in time of crisis[22] – suggests that it is worth conducting a detailed examination of the forces which determine the macroeconomic role of microfinance, rather than expect the relationship between demand and investment to be conventional. Such an examination, it might be hoped, could help us understand whether there exists the possibility of controlling these forces and reducing the damage which they cause for the poorest. This has been the main purpose of the present essay.

If we begin with the specific comparison with Indonesia, this already suggests the importance, not only of design characteristics, but also of demand conditions and government policy. Some of the key points of contrast are set out in table 8. The Indonesian macro-economic crisis was more severe than the Bolivian one, but it was met with institutions better prepared to withstand a crisis[23] . Savings institutions, in particular in rural areas, are far better developed in Indonesia. Grave as the Indonesian crisis was, the fall in demand, especially for basic products of local manufacture, was less pronounced there than in Bolivia, which gave some encouragement to microenterprises and to the financial institutions which service them. In Indonesia, by contrast with Bolivia, the state did not intervene to protect distressed and disaffected debtors, who therefore had no incentive to seek debt waivers, the more so since in Indonesia there is a highly developed system of incentives to repay for borrowers and incentives to seek repayment for bank staff (Hulme and Mosley 1996, chapter 11)[24]

[22] See, for example, Weeks(1975), Mosley(1977).

[23] The Bank Rakyat Indonesia unit desa system in 2000 had 25.1 million savings accounts and 2.6 million loan accounts, a ratio of 10 to 1 (Patten et al 2001: 1057). By contrast, in the whole of Bolivia, amongst those FFPs which are authorised to take savings deposits, the ratio of savers to borrowers is more or less one to one, with about 350,000 accounts of each type (*Microfinanzas,* (La Paz)12/01, tables 2.1 and 7.5)

[24] Many microfinance institutions including the Bank Rakyat Indonesia unit desa system charge discounted interest rates to borrowers who have a consistent record of on-time repayment. Many Indonesian microfinance institutions including BRI also provide a bonus to staff whose size varies according to the repayment record of their clients; in extreme cases such as the KURK system of East

Table 8. The global crisis: two recent country experiences compared

	Bolivia 1998-2003	*Indonesia 1997-1999*
Macroeconomic developments over period:		
GDP growth	Fell from 5% → 0%	Fell from 6% → 0.8%
Investment rate	Fell from 23% → 12%	Fell from 31% → 12%
Demand (growth of services sector)	Average 0.9% p.a.	Average 1% p.a.
Government actions towards the microfinance sector:		
Negotiations	Rescheduling of various microfinance debts, 1999 and 2001, in reponse to demands by 'debtors' cartels'	No rescheduling
Regulatory actions	Licensing of FFP sector (nonbanks authorised to take deposits),	
Structure and behaviour of the microfinance sector: (averages over period stated)		
Growth of lending	-0.1%p.a. [1]	14% p.a. (BRI system only)
Arrears rates[2]	Average 11%	Average 2%
Ratio of savings accounts/loan accounts	10:1(BRI)	1:1(all microfinance institutions)
Insurance facilities	Some 'quasi-insurance' arrangements exist for low-income borrowers, especially in 'village banks' (ProMujer and CRECER)	Little adaptation of insurance institutions for low-income clients
Incentives to repay for clients	None	Discounts for on-time repayment in BRI and elsewhere
Incentives to staff	Few	In a majority of microfinance institutions, staff bonuses related to loan repayment levels exist

Sources: Bolivia: Tables 1, 2 and 4 above. Indonesia: microfinance (BRI) data from Patten and Rosengard (2002); macroeconomic data from IMF, *International Finance Statistics,* various issues.
Note: [1]1998-2001

[2]Proportion of portfolio more than six months in arrears on 31 December.

Beyond these comparisons there are also some lessons of a more general nature that can be learned from theBolivian experience: (i) a move upmarket by microfinance institutions is neither a necessary nor a sufficient condition for protecting the portfolio; (ii) insurance and 'quasi-insurance' institutions (such as the internal accounts of the village banks) can encourage investment amongst poorer clients, (iii) it is possible to mobilise savings by taking advantage of, rather than fighting, prudential restrictions on NGOs (for example, the two NGOs FIE and ProMujer are proposing to collaborate in encouraging their clients to save with commercial financial organisations). The recent global crisis has exposed, for better and for worse, the national significance which microfinance occupies in many economies, and we hope that this analysis may have helped to clarify that role. But

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Java, some loan collection officers are paid purely out of commission on loan repayments and receive no basic salary at all (Hulme and Mosley, chapter 11, p.)

perhaps the most intriguing lesson of these years of crisis is that, in Bolivia at least, it is the institutions whose motives were purely economic and which competed by the law of the jungle which lost, and the institutions with broader social motives which gained. In a free competition between the lion and the lamb, it is the lions which have weakened (and in some cases died) and some of the lambs have not only survived but registered a greater contribution to the national economy.

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Appendix

(i) Analytic formulation of the model

(instruments of policy or institutional design in bold)

(1) $Y = C+I+G+X-M$ *Standard equilibrium condition*
(2) $M = m(Y-T)$ *Imports*
(3) $C = c(Y-T)$ *Consumption fiunction*
(4) $I = I_s + I_l$ *Investment by large firms and microenterrpises*
(5) $I_s = f(MC, \sigma_s, Y)$ *Determinants of microenterprise investment*
(6) $MC = g(Y,$ **DP, DR,** $\sigma, I_f)$ *Determinants of microcredit growth*
(7) $\sigma = f$ **(s, ins)** *Microcredit clients' risk perceptions*

thus: $Y = (I_s + I_l + G + X + M)\ (1/1-(c-m)(1-t))$

Notation:

C= consumption
X = exports
MC = volume of microcredit
DR= microfinance default rate
I = investment
I_l = investment by large firms
S = availability of savings facilities
G = government spnding
M = imports
DP =demand pattern (growth rate of wholesale and retail trade sector)
σ = risk level as perceived by microenterprise sector
Im = investment by microenterprise sector
I_f = investment by foreign firms
ins = availability of insurance facilities

Important multipliers or 'impacts'

Short –term impact of microcredit on GNP:

(1)$\partial Y/\partial MC = (1/(1-(c-m)(1-t))$, the standard multiplier, >0 if $0<(c-m)<1$

Using estimated averages for Bolivia for 1998-2002: c= 0.75, m=0.25, t=0.11, so the multiplier
1-(c-m)(1-t)) = 1.8 approximately.

Long-term effect of microcredit

(2a) $\partial I_s/\partial Y_{-1} > 0$ by definition (the accelerator principle)

(2b) dI_s/dY_{-1}:
>0 if the standard accelerator $\partial I_s/\partial Y_{-1}$ is of greater value than the combined effect of the other terms which influence $I_{s(+}$ (DP, DR, σ and indirectly s and ins) ; in this case, the impact of microfinance is procyclical and tends to aggravate crises (declines in Y) .
<0 if the standard accelerator is of lesser value than the combined effect of these terms. In this case the impact of microfinance is anticyclical and counterbalances any tendency of Y to decline.

In our model the main terms which provide an opportunity for microfinance to act as a countercyclical influence are:

DP, the pattern of demand (here represented by the growth of the trade sector);
DR, the default rate (and policies bearing on this such as government debt amnesties);
σ, the level of risk attached to investment prospects (and thus availability of savings and insurance facilities, which contribute to its determination).

(ii) Data

For the Bolivian macro-economy, the data derive from the national accounts; for microfinance, the source in a majority of cases is the FINRURAL database, which is derived from regular monthly surveys on microfinance institutions in Bolivia and is downloadable electronically from *www. finrural-bo.org.* However, two important variables contained in the analyses of Tables 5 to 7 cannot be downloaded in this way, and have had to be constructed for this paper. These are:

I. Investment (by the microenterprise sector)
This variable is one of the crucial links between microfinance and the macroeconomy. It has had to be measured:

- (i) in the case of BancoSol,PRODEM, ProMujer and SARTAWI) by using a linkage coefficient between value of lending and value of fixed capital investment based on sample survey data for those institutions for 1999;
- (ii)in the case of FIE, ANED, Caja los Andes and CRECER), by computing this linkage coefficient from a survey of microfinance institutions conducted by FINRURAL with Ford Foundation support in 2002;
- (iii)in the case of ProMujer, by using method (i) up to 1999 and method (ii) thereafter;
- in the case of other institutions, by using a coeffiecient which averages across the 1999 and the 2002 data. This method of measurement gives the following estimated values for 1995-2001:

Table 9. Bolivia: Estimated investment by the microfinance sector 1995-2002 (in US $)

Clients of:	1995	1996	1997	1998	1999	2000	2001	2002	2003*
BancoSol	5.93	19.23	23.50	17.78	13.36	-7.15	5.37	-0.6	4.4
ProMujer	0.33	0.83	1.76	-0.18	0	1.75	0.53	1.4	0.4
PRODEM	3..29	6.32	17.0	10.1	4.09	3.06	17.09	22.0	11.4
Sartawi	0.12	0.20	0.56	0.31	0.72	0.42	-0.18	0.8	-1.6
FIE	2.27	2.50	5.79	2.59	5.89	5.22	6.68	14.4	3.4
C. Los Andes	2.28	7.68	11.55	10.87	9.61	14.49	7.80	24.0	11.8
ANED	1.64	1.41	1.68	0.85	1.09	0.22	1.26	4.6	0.4
CRECER	0.33	0.37	0.77	1.03	0.96	0.91	0.65	2.8	3.2
Others (23) plus investment not loan-financed	5.09	0	9.8	123.1	12.5	-4.2	2.7	9..2	16.2
Total estimated investment, microenterprise sector	21.3	38.4	72.4	166.2	48.1	14.7	41.9	78.6	49.6

Total estimated investment, Bolivia	1022	1199	1554	2004	1552	1534	1141	1148	

Source: Sample relationship between lending and investment for institutions named above (for 1999, see Mosley 2001, table 6; for 2002, see FINRURAL, Impact Evaluation Service, *Reports on Institutions under Ford Foundation Programme,* 2002; available at www.finrural-bo.org. For loan values see *Microfinanzas,* Dec. 2002, table 2.16. Last row is from Muller y Asociados, *Estadisticas socio-economicas 2002,* La Paz 2002, p40

*Estimate..Data for 2003 available up to mid-year only.

These are the estimates used in Tables 5 and 6 above. This measure, however, suffers from the obvious faults of sampling error, dependence on sample data for two years only, and the making of an arbitrary estimate for investment by non-client enterprises.

II. Measures of risk and vulnerability

We assume that the investment of the microenterprise sector, like other investment, is influenced by its perception of risk, which we have called σ (equation (5) above); however, as in other countries, we have no measure of the expectations or risk perceptions of the small enterprise sector. What is done in this paper is to hypothesise that the perceived risk attached to investment by small business depends on two things:

(i) the existence or not of an insurance mechanism which can be drawn on in case of emergency (compulsory savings and/or a village bank 'internal account'); a score of 1 is awarded for either and 2 for both;

(ii) the existence or not of voluntary savings deposits which can be drawn on in the event of emergency (only the FFPs have these; a score of 1 is awarded for a 'normal' level of savings deposits (between 0.5 and 1.5 dollars deposited per dollar lent out) and a score of 2 for 'high' savings *per unit of lending* (more than 1.5 dollars deposited per dollar lent out).

These two measures give a dummy variable for 'availability of defences against risk' which may take any value from 0 to 4. Its values over the crisis period, 1997 to 2002, are as indicated in table 10 below:

Table 10. Construction of dummy variable: defences against risk

Clients of:	1995	1996	1997	1998	1999	2000	2001	2002
BancoSol	1	1	2	1	1	1	1	1
ProMujer	2	2	2	2	2	2	2	2
PRODEM	1	1	1	1	1	1	1	1
Sartawi	0	0	0	0	0	0	0	0
FIE	1	1	2	1	1	2	2	2
C. Los Andes	1	1	1	2	2	2	2	2
ANED	1	1	1	1	1	1	1	1
CRECER		2	2	2	2	2	2	2

This 'defences against risk' dummy variable is used in the estimation of Table 6 (the investment function) above. We expect that investment will be positively related to it; rather weakly, it is.