Working paper No. 36

How Trustable are West African Mutual Savings and Loan Institutions? An Application of the PASMEC Databank.

Francesco L. Galassi
Dominique M. Gross

Employment Sector
International Labour Office, Geneva

How Trustable are West African Mutual Savings and Loan Institutions?
An Application of the PASMEC Databank.

Francesco L. Galassi
University of Warwick, Coventry
and University of Ferrara, Ferrara
and
Dominique M. Gross
International Labour Office, Geneva

June 2003

Abstract

This paper uses a new dataset developed jointly by the International Labour Office and the Banque Centrale des Etats de l'Afrique de l'Ouest on mutual institutions in West Africa Economic and Monetary Union countries to test whether these financial intermediaries are able to offer an attractive alternative to moneylenders for small borrowers. Among several factors under consideration by prospective members is an evaluation of the perceived risk involved with membership based on unlimited liability. Using a trust index we can show that most mutual institutions are not attractive in the sense that prospective members must trust a disproportionately high share of members to find joining a mutual institution attractive. In the medium term, this leads to a non sustainable financial system. We also draw conclusions about the sources of this unsustainability and ways for mutual institutions to correct it.

JEL Classification Numbers: G21, Z13, O16, O55
Keywords: Mutual institutions, trust, unlimited liabilities, sustainability, West Africa.
Mailing address: D.M. Gross, Social Finance Programme, Employment Sector, International Labour Office, 4, Route des Morillons, 1211 Geneva, 22, Switzerland. Fax: +41-22-799-6896. E-mail: gross@ilo.org.

Table of Contents

List of Tables

1. Introduction

Mutual savings and loan institutions are prominent figures of the financial landscape in West Africa. In most countries their rapid expansion occurred during the past ten years, after financial liberalization, as it became apparent that commercial banks would not service small economic agents. The cooperative principles at the source of mutual institutions allow for alternative credit arrangements demanding little collateral asset to guarantee loans. The type and size of transactions mutual institutions perform, and the characteristics of their clients make them particularly suitable to developing economies where they contribute significantly to supplying credit and saving facilities to micro and small entrepreneurs who are often asset poor, and where property rights are generally ill-defined. Yet, mutual institutions tend to remain outside the realm of supervision and regulation of the financial authorities and their survival is often left to the goodwill of foreign donors. However, given that resources for development purposes are limited, financial soundness and long-term sustainability are more and more expected from these institutions. Hence, if mutual institutions are to become major players in helping to provide finance for the poor, they ought to remain attractive to members and prospective members alike.

Recently, countries from the West Africa Economic and Monetary Union (WAEMU), under the authority of their common central bank, the *Banque Centrale des Etats de l'Afrique de l'Ouest* (BCEAO), embarked on an ambitious project of regulation and monitoring for micro finance institutions, among which mutual institutions, thereby clearly recognizing the role these institutions play in their economies. In this joint project,

the Canadian International Development Agency and the BCEAO produced a set of rules and regulations for micro finance institutions in general and mutual institutions in particular. In parallel, the International Labour Office, through the Social Finance Programme jointly with the BCEAO developed the systematic collection of data on legal and financial characteristics of these institutions.[1] Both projects aim at developing a monitoring system similar to those commonly in place for banking institutions.

Among the institutions covered by both projects are the Mutual Savings and Loan (MS&L) institutions. They are membership-based organizations and one of the necessary conditions for survival is the ability to attract and retain members. Since these institutions are based on the principle of limited or unlimited liability, it is of primary importance that members trust each other especially when responsibility is unlimited.[2] This involves the possibility for prospective members to broadly assess the risk they accept by joining such association. Members are attracted to mutual institutions because they expect benefits through easier and/or cheaper access to credit in an environment where access to credit is perceived as constrained: commercial banks require collateral and, moneylenders charge prohibitively high interest rates. Hence, access to credit through a mutual institution is usually rather appealing. It, however, entails costs; membership cost as well as costs derived from the solidarity principle that underpins the mutual set-up of the institution. As a consequence, prospective members need to evaluate the financial risk of belonging to a

[1] The PASMEC databank (i.e. PASMEC=*Programme d'Appui aux Structure Mutualistes ou Coopératives d'Epargne et de Crédit*) is managed jointly by the Social Finance Programme of the International Labor Office, in Geneva and the *Mission pour la Réglementation et le Développement de la Microfinance* (MRDM) of the Central Bank for West Africa (BCEAO), in Dakar.

[2] Note that, "trust" here refers to the joint liability principle for the institution as a whole and not simply among members of a group obtaining credit. To avoid confusion the expression "unlimited liability" rather than "joint liability" will be used since it is what characterises these mutual institutions.

mutual institution, compare to borrowing from moneylenders. Similarly, institutions need to assess their ability to attract future members to ensure survival.

In this study we develop a simple index, which can be used to carry out these two evaluations. It can be seen as a "trust index" for a potential member in the sense that it measures the proportion of members a candidate is asked to trust when joining a mutual institution since becoming a member involves facing the risk of other's default. Once the value of the trust index is identified, a candidate may or may not find it acceptable. The same index can also be interpreted as a measure for the ability of mutual institutions to attract new members. In effect, if the index indicates that members should trust more than 100% of the membership, the institution will obviously have difficulties attracting new members. Of course, the index is only one of the factors prospective members will consider when making a decision. Other factors such as distance to the institution or range and types of services will also be relevant. It is, however, an indication whether an institution is appealing to begin with. Furthermore, the index also allows for the identification of a mutual institution's weaknesses in management strategies that may lead to such result.

In this study, index values are calculated for 1997 using information available from the PASMEC databank for six WAEMU countries: Benin, Burkina Faso, Cote d'Ivoire, Niger, Senegal and Togo. Given the role this index can play, for institutions and individuals alike, in providing valuable insights into a rarely studied aspect of the mutual sector, at the end of the study, we take the opportunity to comment on desirable improvements in the information collected by PASMEC databank.

Keeping in mind that the index of trust is built mostly from the actual financial characteristics of mutual institutions, several results arise from our analysis. First, on average, the mutual industry appears able to attract members and, thus, enjoy some sustainability in three countries: Burkina Faso, Niger and Togo. In Senegal and Cote d'Ivoire, however the mutual sector is far from showing signs of sustainability. Since these institutions function in a common monetary system, it would seem that factors other than those arising from the macro monetary environment matter. Second, in some countries the share of mutual membership enrolled in unsustainable institutions is extremely large. This tends to indicate that all types of institutions, independently of their size or geographic spread of agencies have difficulties of attracting members and financial factors are the major source of concern. In fact, unsustainable institutions may face three possible sources of difficulties: high liabilities, high operational costs, and low expected returns. We find that very few institutions cumulate the three problems and that too high liability costs are most often the source for lack of sustainability. This result raises the question of the ability by some institutions to manage savings and credit simultaneously and efficiently.

The paper is organized as follows. The next section describes some characteristics of mutual savings and loan institutions and the mutual finance industry as a whole in the six WAEMU countries. Section 3 discusses the definition of the index of trust. Section 4 provides a thorough evaluation of the level of trust that Mutual Savings and Loan (MS&L) institutions inspire to prospective members in each of the six countries. Section 5 offers some suggestions to improve this evaluation through the collection of more precise statistics and, Section 6 concludes.

2. The PASMEC Databank

The PASMEC databank collects general, legal, as well as financial information from various types of micro-finance institutions in the West Africa Monetary Union region. It is one of the very few attempts to collect systematically and periodically such statistical information.[3] It distinguishes between institutions that are of the mutual type and others such as NGO's. The national surveys started in 1993 at a yearly frequency. As often happens in such projects, it took a few years for the system to provide a degree of consistency and breadth in coverage. For example, in Benin, the first published data for December 1993 covered 9 mutual savings and loan institutions in total (ILO/BCEAO, 1997, p.1). Four years later, in 1997, 30 institutions were covered. Part of this increase is due to new institutions being born in the period and part of it is due to better response rate. Still not all institutions reported satisfactorily since 40 organizations were initially targeted in 1997 and information on 30 of them was eventually published (ILO/BCEAO, 1998, p.2). Nevertheless, the response rate is high and the information can be considered reliable.

In this study, we use information published in printed form to calculate the index, thereby implying that access to the necessary information is relatively easy for prospective members. The year for which statistics are most comprehensive, and consistent with our framework is 1997[4] and six WAEMU countries are analyzed, Benin, Burkina Faso, Cote d'Ivoire, Niger, Senegal and Togo. The quality of reporting varies

[3] The other recent attempt at collecting information from micro-finance institutions is by Calmeadow (see, Calmeadow, various years).

[4] All the statistical information is coming from the directly available printed documents (see ILO/BCEAO, 1998a,b,c,d,e,f).

across institutions as not all MS&L institutions fill the requested form systematically and completely and in some rare cases the information is rather scant. Hence, when the information was clearly more complete, data for 1996 were used. When the information was too incomplete for both years, the institution was dropped from the analysis. As a result, 3 out of 10 reporting institutions had to be dropped in Niger and 1 out of 26, in Senegal. In Benin, Burkina Faso, Cote d'Ivoire and Togo, all the reporting institutions are part of the sample. The list of MS&L represented in the analysis is given in country Tables in Appendix I with some of their institutional and legal characteristics. From these Tables, it is clear that the total number of institutions varies greatly from one country to the other. Senegal and Togo have a large number of institutions (25 and 19 respectively) while Burkina Faso has only 6 institutions. Keeping in mind that the analysis covers the years 1996/1997, most institutions were relatively young at the time. Only three institutions were established in the 1960s or 1970s (*Le Bureau des Caisses Populaires du Burkina*, 1972, *La Fédération Nationale des Coopératives d'Epargne et de Crédit de Côte d'Ivoire*, 1976 and *La Fédération des Unions Coopératives d'Epargne et de Crédit du Togo*, 1969). Overall, the sample represents a wide variety of MS&L institutions in age and specialization as well as other characteristics described below and such variety serves well our purpose of trying to identify causes for possible difficulties to attract new members. The next section provides a description of some structural and financial characteristics of the mutual savings and loan sectors in the six countries.

3. The Mutual Savings and Loan Industry in WAEMU.

This section takes a close look first at the role of the mutual sector in the financial system of the countries and then, at its structural and financial diversity.

3.1 The mutual industry in the financial sector.

We start by looking at the relative size of the micro finance (MF) and of the mutual sectors (MS) in the overall financial sector in each country. Market shares are measured by both deposit and loan volumes in 1997 and are given in Table 1.

Table 1: Deposits and Credits in Banks and Micro Finance Institutions (Billions CFA Fr., 1997)

	Total in Banks 1.	**Total in MF[a/] 2.**	**Total in MS[b/] 3.**	**% MF [2/1+2] 4.**	**%MS [3/1+2] 5.**	**MS/MF [3/2] 6.**
Deposits						
Benin	207.6	17.7	17.5	7.9	7.8	98.8 %
Burkina Faso	174.3	8.4	7.5	4.8	4.3	89.3%
Cote d'Ivoire	1032.2	8.13	8.08	0.8	0.8	99.4%
Niger	66.3	1.3	1.2	2.0	1.8	92.3%
Senegal	434.6	8.5	7.7	1.9	1.7	90.6%
Togo	139.9	10.1	9.8	6.7	6.5	97.0%
Loans						
Benin	163.1	15.9	14.4	18.2	16.4	90.6%
Burkina Faso	1139.8	9.7	6.2	5.9	3.8	63.9%
Cote d'Ivoire	42	4.5	3.3	0.4	0.3	73.3%
Niger	428.3	2.7	0.8	6.4	1.9	29.6%
Senegal	154.7	15.2	8.2	3.4	1.8	53.9%
Togo	154.7	8.7	7.8	5.3	4.8	89.7%

Source: ILO/BCEAO (1998).
a/ MF=Micro finance institutions such as MS&L, direct credit institutions and project with credit component.
b/ MS=Mutual sector.

A look at Column 4, immediately shows that the shares of Micro Finance institutions (MFIs) are quite different from one country to the other as they vary by a factor of 10 for deposits and 45 for credits. While Cote d'Ivoire has the smallest participation of MFIs in the financial sector for collecting deposits with 0.8%, Benin has the largest with 7.9%, closely followed by Togo. In credit allocation, Benin also has the largest share (18.2%) and Togo and Burkina Faso follow with less than 1/3 of Benin's share (5.9% and 5.3% respectively). Not surprisingly, given their nature, MS&L institutions represent the bulk of saving in all six countries (in col. 6, at least 90%). On the credit side, in Benin and Togo, mutual institutions represent more than 90% of MFI's loan value, in Niger, though, the share is only 30%. This rather low participation to the credit market may be due to the only recent introduction of mutual institutions in the financial landscape of that country.[5] Overall there is an apparently very small contribution of MS&L to financial market activities. These numbers, however, may be somewhat misleading since the shares are calculated from deposit and loan total values and MS&L institutions deal with very small individual amounts.[6] To get a more accurate picture of the role of MS&L in those economies we must consider some other characteristics.

3.2. Structural characteristics of mutual institutions.

First, we consider some of the institutions' structural characteristics (upper panel, Table 2) and for easier comparison a few factors have been standardized with the national statistics (lower panel, Table 2).

[5] In Niger, mutual institutions started developing in the early 1990s (ILO/BCEAO, 1998, Partie II, p.1).
[6] The average savings level is between US$139 (CFA Fr.86,278) and US$74 (CFA Fr.46,100) and the average credit level, between US$272 (CFA Fr.168,558) and US$554 (CFA Fr.343,557) at the exchange rate of US$100=CFA Fr.62,000.

Table 2: Sample Institution Characteristics

		Benin	Burkina Faso	Côte d'Ivoire	Niger	Senegal	Togo
1.	Number of institutions - institutions per 1 million inhabitants	10 1.7	6 0.5	9 0.6	7 0.7	25 2.8	19 4.8
2.	Number of members per institution[a/] - maximum - minimum	 217,861 44	 120,000 1677	 108,722 20	 5,445 440	 72,217 213	 86,805 41
3.	Membership share of dominant institution	86%	72%	93%	30%	58%	75%
4.	Herfindahl-Hirschman concentration index	0.748	0.546	0.869	0.272	0.361	0.599
5.	Total membership[a/] - members/popul.15+ (%)	252,602 8.2	166,233 3.0	116,708 1.5	17,911 0.4	124,082 2.6	115,272 4.9
6.	Number of institutions with majority of women members[b/] - share with women majority	4 40%	1 17%	2 22%	2 29%	10 40%	9 47%
7.	Number of agencies - maximum - minimum	 111 1	 107 2	 98 1	 36 1	 74 1	 142 1
8.	Share of one-agency institutions	10%	0%	33%	71%	44%	63%

[a/] Includes men, women and groups. [b/] Among individual members only.

Country Characteristics

	Benin	Burkina Faso	Côte d'Ivoire	Niger	Senegal	Togo
Total population (mios)	6	11	15	10	9	4
Population density (hab/km^2)	49	38	46	7	43	76
% Rural population	60	83	55	81	55	68
% Illiterate adult population[a/]	63	80.8	60	6.3[b/]	67	48
Labour force participation rate	50	54.5	33	50	44.4	50

Source: ILO/BCEAO (1998), Partie I. [a/] 1995 [b/] Number of adults aged 15+

In the upper panel, most indicators describe market outreach and its diversity. The first one under consideration is the overall number of institutions in the sector (Row 1). Some countries appear to have a much more widespread MS&L industry than others. For example, Senegal and Togo have about three times as many institutions as Burkina Faso

and Niger. Moreover, this difference does not solely reflect differences in country scales as Senegal and Togo have 2.8 and 4.8 institutions per 1 million inhabitants and the two other countries have 0.5 and 0.7 institutions per 1 million inhabitants. Does the proliferation of institutions necessarily imply that competition among MS&L is stronger in Senegal and Togo?

Part of the answer is given by the size of the dominant institution. Looking at Rows 2 and 3, in most countries, the business of mutual finance appears to be heavily concentrated in the hands of a single major institution. The dominant institution represents more than 50% of the membership in all countries except Niger.[7] In countries like Cote d'Ivoire and Benin the market power of the dominant one is rather impressive as it covers 93% and 86%, respectively, of the overall memberships. However, looking only at the dominant firm to evaluate market power may be somewhat misleading. A more accurate picture about the level of concentration in the market of mutual finance (i.e., cartel and/or monopoly power) can be provided by the most commonly used concentration index in industrial organisation: the Herfindahl-Hirschman (*HH*) index.[8] It measures how balanced a sector is; in the case of extreme concentration, i.e., monopoly, *HH*=1 and when competition is fierce, *HH* is close to zero. The results in Row 4 show wide degrees of concentration in the mutual sector. The higher level of concentration is in Cote d'Ivoire with Benin a close second (HH=0.87 and HH=0.75, respectively). Burkina Faso and Togo have a similar concentration ratio and their dominant institution captures approximately the same share of membership (72% and 75% respectively). Finally, the HH index shows

[7] When all institutions surveyed are considered the percentages change little since the vast majority of the reporting institutions belong to the sample used in this study and the missing ones tend to be very small.
[8] The index is the sum of all institutions' shares squared. The square acts as a weighing factor.

that there is more competition in Niger and Senegal than in other countries; however, Niger also has one of the youngest and least developed mutual system.

The third structural indicator is the distribution of the number of agencies. In most countries the smallest institutions have only one agency, and for dominant institutions the number of agencies can reach 100 and more (in Togo, Benin and Burkina Faso). While there seems to be a positive correlation between total population density and maximum number of agencies (simple correlation coefficient is equal to 0.93), there is no clear relation between rural population and the maximum number of agencies. In effect, it could be argued that a numerous and widely spread rural population would require more agencies. Yet, Burkina Faso and Niger, for examples, have both 80% of their population in rural areas and their maximum numbers of agencies lie at opposite ends of the spectrum (107 and 36 respectively). Nevertheless, when the competition argument is applied at the agency level, rather than the institution level, another picture arises. Niger with the smallest number of institution per 1 million inhabitants also has the largest proportion of single-agency institution followed relatively closely by Togo. Hence, the overall information on agencies seems to suggest that networks of agencies are mostly developed in densely (i.e., urban) areas and single-agency institutions tend to cover rural areas.

Finally, the proportion of institutions with a majority of women members varies substantially from one country to another with almost half in Togo and only 17%, in Burkina Faso. This characteristics, as it will be seen, relates directly to the sustainability of institutions.

To summarize, the picture that emerges from the structural characteristics is one of very varied structures for mutual finance across the six countries. The industry is quite competitive in Senegal and Niger and highly concentrated in Burkina Faso and Cote d'Ivoire. At the agency-level, Niger again appears to be the most open system with 2/3 of the institutions being single-agency ones. However, Niger also has the smallest outreach ratio with 0.4% of the adult population. So, even though these countries evolve in a single currency, single monetary system there are many differences in the structure of their mutual systems be it at the institution, agency or membership level. This diversity which may arise from different speed in financial liberalization and other policies is likely to play a role in the overall attractiveness of national systems for new members and, thus, on the sustainability of these systems. To complete the picture, in the next section we look at the differences in some financial characteristics of the institutions across the six countries.

3.3. Financial structure of mutual institutions.

One of the advantages of analyzing MS&L systems in WAEMU countries is the fact that they have a common monetary system. Clearly this does not imply that financial sector structures and policies are identical across countries. It, however, implies that the money-macroeconomic framework is under the authority of a common central bank. As such, the results of cross-country comparisons in financial systems especially when wide differences persist, gain in credibility. Table 3 provides some statistics about financial characteristics of the MS&L sector for each country.

Table 3: Sample financial characteristics

		Benin	**Burkina Faso**	**Côte d'Ivoire**	**Niger**	**Senegal**	**Togo**
1.	Nominal deposit interest rates Nominal lending interest rates	2%-9% 10%-30%	3.3%-12% 10%-45%	0%-6% 10%-20%	3%-5% 15%-36%	0%-15% 1.5%-25%	0%-7% 12%-24%
2.	Inflation rate (1997)	4.7%	2.2%	3.2%	2.9%	2.3%	11.4%
3.	Real deposit interest rates Real lending interest rates	(-2.7%)-4.3% 5.3%-25.3%	1.1%-9.8% 7.8%-42.8%	(-3.2%)-2.8% 6.8%-16.8%	0.1%-2.1% 12.1%-33.1%	(-2.3%)-12.7% (-0.8%)-22.7%	(-11.4%)- (-4.4%) 0.6%-12.6%
4.	Average deposit in CFA Fr. (per depositor)	65,907	50,522	69,137	46,100	65,867	86,278
5.	Average credit in CFA Fr. (per credit)	168,558	256,583	341,315	229,728	290,258	343,557
6.	Weighted average deposit/credit ratio	1.29	1.22	3.13	1.15	2.43	1.28
7.	Weighted average repayment rate - maximum - minimum	91.6% 100% 64%	97.1% 100% 84%	94.9% 100% 72%	88.2% 100% 69%	91.9% 100% 47%	82.7% 100% 65%

Sources: ILO/BCEAO (1998), WB (2000).

While not presenting an in-depth analysis of the financial characteristics in relation to the national monetary and macroeconomic environment, some features of Table 3 are worth pointing out. The first Row shows the maximum and minimum values for nominal interest rates on deposits and loans. The rates cover a wide range of values within countries as well as across countries. In Senegal, for example, where the system has been shown to be quite competitive, interest rates on deposits vary from 0 to 15% and in Burkina Faso, with a more concentrated industry, the dispersion in rates is narrower, from 3.3% to 12%. These observations appear to be inconsistent with the concentration measure, which identified Senegal as the most competitive system, and more competition should lead to narrower interest rate differential on similar financial products. Even though part of the spread may be traced back to different duration, structures for the portfolios of deposits, the spread is quite large given that these institutions offer very few savings products. One reason for the existence of such spread could be the fact that mutual institutions are often specialized geographically (i.e., serving only one area) or in terms of clients (i.e., link with a company or trade). Also, information may not flow easily between small institutions (unlike between agencies of a large institution). Moreover, the competitive pressure from other financial institutions, such as banks, may be vastly different from one country to the other.

Finally, part of the cross-country differences in interest rates can be explained by different inflation rates. Even though they belong to the same monetary system, these countries experience quite different inflation rates (see Row 2) and quite often deposit rates are negative. Interestingly, in Senegal, the lowest lending rate is also negative. Overall, the structure of interest rates is not what would be expected from the standard financial theories. Two exceptions are Burkina Faso and Niger where all real rates are positive and deposit rates are on average much lower than lending rates, a basic expected feature of the structure of interest rates.

Average amounts of deposit and credit are very small in all countries. Moreover, average deposit levels are very similar in five of the six countries (the exception being Togo). Average credit levels however vary substantially: It is twice as high in Togo and Cote d'Ivoire than in Benin and, for the three other countries, it lies in between these extremes. As a result, the deposit to credit ratios vary between 1.15 and 3.13, suggesting vastly different lending practices in the six countries. Finally, within country variations, as well as cross-country variations, in the repayment rate are also substantial. The maximum is 100% in all countries while the lowest minimum repayment rate at the institution level is 47% in Senegal and the highest, 84% in Burkina Faso. Given the diversity of types and sizes in institutions, it is worth noting that once weighted averages are computed most of the difference fades away and all countries have similar and relatively high average repayment rates (i.e., above 90%).

To summarize, Togo has the lowest real interest rates (lending and deposit, and highly negative for deposits), the largest average credit, both signs of a rather liberal lending policy. The country also has the lowest repayment rate. At the opposite of this spectrum stands Burkina Faso with the highest real lending rates and the highest repayment rate for a middle of the range average credit size. This wide variety of financial characteristics confirms that mutual institutions may evolve in segmented markets and do respond to market-specific factors. Consequently, the degree of attractiveness of the mutual system for prospective members is likely to be different across the six countries.

The next section provides some brief economic arguments for the identification of an index of trust in MS&L institutions and for its components. An in-depth analysis of the values of this index for the six WAEMU countries follows.

4. An index of Trust for Mutual Institutions.

While practitioners from mutual institutions in developing countries know very well the problems the industry faces, very little formal analysis has been carried out. This state of affairs is due in part to the lack of consistent and reliable statistical information on these institutions. Thus, the PASMEC databank offers a unique opportunity to analyze some of the issues relating to mutual institutions. In this study we chose to concentrate on the economic and financial factors that might influence the participation decision by prospective members. Because mutual institutions rely on their members to operate financially and on the unlimited liability principle, it is of prime importance for their sustainability to be appealing to potential members. This is especially true in environments where people have access to alternative financial arrangements.

Members enjoy benefits by joining a mutual institution that do not exist with other financial institutions but they also bear the extra cost of the risk associated with unlimited liability. Hence, what matters is the balance of the two: are the advantages obtained through lower borrowing costs offset by the risk incurred in joining the mutual? The answer to this question is central to the mutual's ability to attract and retain members. Before arriving at a direct way of evaluating this balance of costs and benefits we must focus on the role MS&L institutions play in the financial markets of these economies.

One of the major impediments to access to credit in general is imperfect information. It represents the typical market failure inherent to financial transactions. The often prohibitive cost of gathering information about potential clients and the probability of success of their business project is the major factor preventing broad access to financial services. Among other things, the absence of accurate information results in the fact that

interest rates cannot be used to reflect risk precisely and therefore, cannot be used to discriminate among potential clients and their projects. The decision to extend or deny credit must then be organized through a different system and it most often reflects decisions taken by bank employees. One tool commonly used to circumvent the high cost of information is to require from the client marketable collateral to be used as guarantee against risk of failure. Clearly, this solution has a major drawback as it denies trustable, but asset-poor, people access to credit. Hence, mutual savings and credit institutions were created to circumvent the information difficulty by other means: i.e., other members are asked to guarantee someone's loan. Mutual institutions solve part of the market failure by pooling assets and by passing monitoring costs onto clients (Stiglitz and Weiss, 1981, Banerjee et.al., 1994).

Typically, cooperative arrangements require participants to commit some resources in exchange of the borrowing privilege (i.e., forced savings) and thus, through the unlimited liability principle, they require members to take on some risk related to other members' behavior. Prospective members must then decide whether this risk is worth taking compared to access to credit at a higher cost. Most of the times, the alternative source of credit, in these economies, is a money-lender. In that case, the borrower is not asked to assume the risk that others might default but he/she is asked to pay a much higher cost for credit. Hence, prospective members must find it to their advantage in terms of lower borrowing costs to bear a greater risk due to the cooperative arrangement offered by mutual institutions.[9]

The risk attached to unlimited liability is not perfectly known beforehand and it arises when members of a mutual institution have an incentive to default. This is the case

[9] Note that a similar decision is made by existing members about remaining in the cooperative arrangement.

when the cost of not repaying a loan is lower than the benefits members derive from belonging to the mutual institution. Consequently, new members will join only if they perceive that their share of the cost of others' defection is smaller than the benefits they themselves derive, i.e., lower borrowing costs. The greater the benefits are, the greater is the tolerance for potential defection. There is, however, a probability of default so high that people will stay away and in that case, the arrangement is no longer sustainable (see Galassi, 2001). In this study we compute an index, which indicates whether MS&L are able to attract/keep members. The theoretical framework that formally defines the index and its components is presented in Galassi and Gross (2003). Here we describe verbally how the ideas we have been presenting can be turned into an index of trust and sustainability.

From the above discussion, it follows that, when there is a choice for getting a loan, a mutual institution must show it can offer a better deal than alternative lenders. A first factor that makes a mutual attractive is the spread between moneylender's and mutual's interest rates, net of the membership fee. The institution can directly control the interest and the fee. The higher either one is, the less attractive it will be for borrowers to join the mutual, because lower net savings in interest costs will make them less willing to accept the risk of others' default. How attractive a mutual is to potential members and borrowers, then, is ultimately decided by the ability of management to keep borrowing and membership costs low. More broadly, this means that management, to maximize the mutual's attractiveness, must ensure that its assets are performing well, that is, the loans are yielding a steady and adequate stream of income. This is accomplished by ensuring that revenues from the mutual's assets adequately cover its borrowing and administrative costs, which implies, first, charging interest rates that encourage people to join (i.e., interest rates

below moneylenders' rates) and second, ensuring the mutual remains solvent. In the end, therefore, the mutual's borrowing and administrative costs determine its lending rate.

Furthermore, the mutual's management must take into account the fact that not all loans will eventually be repaid. Hence, the income stream generated by those that are repaid must cover all of the mutual's liability charges, plus its administrative costs. Therefore, once the management has formed an expectation about what proportion of loans will not be repaid (for a given level of administrative costs and borrowing charges) the mutual's ability to attract members is set. For example, a mutual with high default rates will have to charge high interest rates to cover all its liability charges, and this will clearly reduce its attractiveness to borrowers. Or, a mutual with high liabilities relative to revenue-yielding loans will likewise not be attractive to prospective members even if the default rate is rather low.

So far we have talked about "attractiveness" to potential members: it is now time to define this idea more carefully. When the mutuals' managers set the lending rate, they are in part signaling publicly what proportion of loans they expect will be repaid. Each potential borrower must then decide whether the lower borrowing costs they obtain by joining the mutual are worth the risk of having to pay for defaults in case the mutual's management was too optimistic and overestimated the repayment rate. In other words, by setting the lending rate, mutual's managers indirectly define the benefits obtainable from membership. The lower the institution's lending rate relative to the moneylender's is, the greater are the benefits of memberships, and, therefore, the lower is the proportion of members who must repay for joining to be attractive. In short, a well run mutual that offers members significantly lower borrowing costs will attract members easily.

Moreover, costs incurred by members in case of default can be further mitigated by the existence of reserves. This means that when borrowing costs are well below the alternatives (i.e., moneylenders), and when reserves provide some protection against defaulting borrowers, members can bear a higher risk of default by others and still gain from lower interest charges. Therefore, with a large interest gain, people have to trust only a small portion of members to want to join. In contrast, a mutual with high liabilities and low revenues offers small interest benefits to prospective members, and, if in addition, little protection is offered through reserves, people will join only if they can be certain that almost everybody will repay their loans and the risk of default is low. In that case the share of members to trust is high.

The implication of these considerations is that a trust index can be built using the MS&L institution's balance sheet. ***The index, which we call the g-value, measures the minimum percentage of borrowers whom a potential new member must trust will repay their loans in order to find joining attractive.***

Our index is entirely based on the financial circumstances of a mutual savings and loan institution. It is a signal about its sustainability. The *g*-value provides would-be members with an estimate of the proportion of current borrowers who must repay their loans if joining the mutual is to be an attractive option, based on a given institution financial performance. It goes without saying that a MS&L institution that turns out to need more than 100% of its membership to be trusted by newcomers will not be sustainable in the long run.

However, a mutual for which the index is below 100% is still not guaranteed to be able to attract members. The subjective evaluation of the prospective member must still be taken into account. In effect, suppose an MS&L institution has a g-value of 0.8. If individuals feel this is a too high percentage and are ready to join only if 70% of the members must be trusted, the mutual will not be able to attract members and its sustainability may be jeopardized. Our index, therefore, measures the first step from the decision process: it measures the percentage provided by MS&L institutions. Then, the important threshold value is 1, or 100%. Signaling a value below 1 is a necessary, but not sufficient, condition for a mutual to be in a position to attract new members and retain existing ones. Nevertheless, whatever considerations people may use in deciding whether to join a given MS&L, it is also the case that an institution with a *g*-value at 0.6 will find it easier to attract members than one with a *g*-value at 0.9.

We wish to stress that we are not concerned with the second part of the process, which is how a potential member decides whether they trust that proportion or not. In any group there will be more and less trusting individuals depending on personality, experience, and aversion to risk. All we are saying is that a well-run mutual institution offering significant benefits to borrowers will find it easier to attract and retain members than a poorly run one. Our index, the *g*-value, allows us to identify well run and less well run MS&L institutions with the help of a rather straightforward calculation.[10] What we will show next is how the decisions by mutuals' managers about three key variables (liabilities, operational costs and lending rates) can alter the mutual's attractiveness.

[10] Note that if computed periodically over several years, the index can be used as a concise and clear diagnostic tool to monitor MS&L institutions' progress.

In the next section we analyze index values for each of the six countries and we try to identify the reasons why situations with *g>1* occur in relation to the major components of the index.

5. Trust and WAEMU Mutual Institutions.

Computing the exact *g*-value requires detailed information mostly from institutions. However, we decided to use only publicly available data for two reasons: First, prospective members have access to that information and can evaluate for themselves what g-value any given institution signals. Second, one of the reasons for this exercise is to test the performance of the PASMEC database and suggest, if needed, possible improvements. Being restricted to directly available data has some shortcomings; in particular part of the information on individual institutions is not available and had to be approximated. As a result, when there is no published observation (*actual*) we use estimated values (*estimation*) or close substitute measures (*substitute*).[11] The necessary components to compute the index are listed below with their availability:

- Total outstanding credit — *Actual* or *substitute*
- Money lender rate — *Estimation*
- Mutual entry fee — *Actual*
- Membership size — *Actual*
- Interest rate on deposits — *Actual*
- Total deposits — *Actual*
- Operational costs minus subsidies — *Actual*
- Default rate — *Actual*
- Yearly contribution to reserve — *Actual* or *estimation*
- Accumulated reserves — *Estimation*

Most elements are under the control of the MS&L institution except for the rate charged by moneylenders which is also the most difficult to observe.[12] As it is locally set and can vary

[11] The shortcomings of the databank are discussed in details in Section 5.
[12] Detailed explanations on the measures are given in Appendix II.

greatly from one region to the other within a country there are no directly available statistics and its value had to be approximated. Within WAEMU, there is a maximum usurer rate for micro-finance institutions which is set by the Central Bank and in 1997, it was 27%. We chose to use 40% for the moneylender rate, which on average corresponds to twice the rate charged by mutual institutions.[13]

Some institutions did not indicate the 1997-contribution to reserves and in these cases it was assumed that the institution had follow the regulation to the extent it had the funds to do so (see Appendix II). Otherwise, the contribution was set equal to zero.

One important component which is not at all available in the published databank is the level of accumulated reserves since the beginning of operation by the institutions. It is an important component since it represents the degree of protection prospective members benefit from. In case of default, the amount members are liable for decreases with the level of reserves. We decided to evaluate the level of reserves under two scenarios: First, a pessimistic scenario where none of the institutions, regardless of their age, had accumulated reserves. Second, a more optimistic scenario where it is assumed that yearly contributions to reserve during operation have been equal to the one made in the observation year (1997 or 1996). This second scenario is optimistic for two reasons: first, institutions are assumed to have built reserves in every year of existence which is not necessarily the case;[14] second, institutions which have been in operations for several years may have, for various reasons, contributed much less in their initial years of operation than in 1996 or 1997. Nevertheless, the advantage of this two-scenario strategy is that it allows for a straight-forward analysis of the sensitivity of the index to variations in reserves.

[13] It is worth noting that the results are little affected when a higher rate is used (Galassi and Gross, 2003).
[14] The regulation with minimum compulsory contributions came into place with the PARMEC legislation.

Even though basic information is available, there is some uncertainty in the computation of liability costs. Most institutions offer term deposits as well as demand deposits and they quote two different interest rates. However, information on the distribution of deposits between the two types is often not available. We, therefore, evaluated the entire savings alternatively at each of the two interest rates. This amounts to assuming, in one case, that all deposits are long-term deposits and the interest rate is the maximum value (r=max) and in the other case, all deposits are short term deposits and the interest rate is minimum (r=min). This approach provides the two limiting values for *g* within which the true value lies depending on the actual structure of deposits.

Combining the two sets of assumptions, the worst scenario or most costly perspective for members is one where reserves are minimum (low protection) and the interest rate on deposits, maximum (high liabilities); the best scenario is the one where the institution has accumulated reserves and the interest paid on liabilities is minimum. The index value has been computed for all institutions listed in Appendix I, however, to protect confidentiality, the analysis focuses on weighted averages across institutions in each country. The weights are the institution's membership share.

5.1. Country-level results.

The results for the various scenarios are given in Table 4, with the overall worst scenario for the prospective member (no accumulated reserves and maximum interest rate on liabilities) in Column 1 and, the overall best scenario (accumulated reserves and minimum interest rate on liabilities), in Column 4.

Table 4: Weighted average ratio per country for the pessimistic and optimistic scenarios

	Pessimistic scenario No accumulated reserves		**Optimistic scenario With accumulated reserves**	
	Maximun rate on deposits 1.	*Minimum rate on deposits* 2.	*Maximun rate on deposits* 3.	*Minimum rate on deposits* 4.
Benin				
-weighted [a/] av.	1.060	1.059	1.028	1.028
-max. value	2.656	2.656	2.655	2.655
-min. value	0.416	0.416	0.390	0.390
Burkina Faso				
-weighted av.	1.024	1.004	0.976	0.957
-max. value	1.579	1.393	1.578	1.391
-min. value	0.740	0.649	0.739	0.648
Cote d'Ivoire				
-weighted av.	2.481	2.479	2.413	2.412
-max. value	5.797	5.797	5.797	5.797
-min. value	0.255	0.253	0.250	0.248
Niger				
-weighted av.	1.054	1.047	1.034	1.028
-max. value	1.256	1.239	1.214	1.198
-min. value	0.141	0.139	0.141	0.139
Senegal				
-weighted av.	2.053	2.024	2.003	1.975
-max.value	8.301	7.935	7.985	7.625
-min. value	0.393	0.393	0.365	0.365
Togo				
-weighted av.	1.221	1.164	1.128	1.075
-max. value	6.213	6.075	6.163	6.025
-min. value	0.148	0.148	0.147	0.147

[a/] Weights are the institutions' membership shares.

A quick glance at the Table shows a few striking results. First, the only difference between Column 1 and Column 3 or Column 2 and Column 4 is the existence of accumulated reserves in institutions older than one year. In none of the countries does the existence of reserves have a major impact on the average index value. Moreover, as mentioned earlier, the assumption about the rate of accumulation of reserves is quite generous and the gap between the g-values for a given interest rate may even be smaller with the actual numbers. The fact that reserves do not matter so much in determining the attractiveness of a mutual may at first seem surprising. However, how attractive a mutual is depends upon a fine balance between many competing requirements such as low administrative costs and lending rates that are low enough to be attractive yet high enough to provide a stream of

revenue to cover liability charges. The sheer fact of having reserves does not on its own make joining a mutual an attractive proposition if other aspects of financial management are unsatisfactory**.**

A comparison between Columns 1 and 2, or Columns 3 and 4, allows us to evaluate the impact of different financial liabilities on the index. It is interesting that, again only negligible changes occur in the average value of the index. When the two effects are cumulated and the best scenario is compared with the worst one (i.e., Columns 4 and 1), the differences are still very small. The largest change occurs in the average for Togo with a 12% decline. For all the other countries the change is between 2 and 4%.

The second major observation derived from Table 5 is that, on average and even under the most favorable hypotheses for prospective members, few countries exhibit a mutual system that inspires trust. Keeping in mind that a value greater than 1 indicates that more than 100% of the membership must be trusted for a potential member to join, many countries have unsustainable systems. Only in Benin, Burkina Faso and Niger is the average value equal or below 1.[15] Togo appears to be a borderline case and Senegal and Cote d'Ivoire have weighted average g-values well above 1. There are, however, large differences in the values of the index at the institution level and this is illustrated by the maximum and minimum values. For example, in Column 4, the g-values range from 0.139 to 7.625, which shows that some institutions are extremely well run compared to others.
A clearer view on these discrepancies between institutions can be obtained from figures without infringing on confidentiality. Figure 1 and Figure 2 show the share of institutions'

[15] All the comments refer to actual values abstracting from statistical significance because in most cases the distributions for the index values are not normally distributed and thus, statistical tests are invalid.

members in various classes of index values.[16] The three systems with the lowest average index value are in Figure 1, the three with the highest, in Figure 2.

[See Figures 1 and 2 at the end of the document]

The picture that emerges is one of very diverse systems across countries. For the two clearly sustainable systems, Benin and Burkina Faso, about 90% of the membership belongs to institutions with an index value between 0.500 and 0.999. Very few members belong to institutions with an index above 1. At the other end of the spectrum, the two countries with the highest average index value, Cote d'Ivoire and Senegal, show a high proportion of members in institutions with a value above 2 (approximately 70% and 95% respectively). Finally, Niger and Togo lie in the middle; they have a too large share of members in institutions with the index between 1 and 1.499 to have clearly sustainable systems. One positive outcome is that a very small portion of members in only a few countries belong to institutions with extremely high values of g ($g>5$). Nevertheless, overall, only 30% of the members from the six countries belong to institutions with an index value below 1.0 and 69% are in institutions with a value below 1.5. Hence, the picture arising from Table 5 and Figures 1 and 2 is not a very positive one: not a single country has an average index value distinctly below 1 and very few institutions have a value below 0.5.

There are many possible reasons for these high average values starting with structural factors as those depicted in the upper panel of Table 2. Some obvious characteristics such as size and age could also be invoked as factors influencing the value

[16] Because of the very small differences between the different scenarios, only the most pessimistic scenario with the highest interest rate and no reserves is represented.

of the index. In effect, one could expect that, economies of scale work in favor of a MS&L institution and, large financial institutions are more likely to be sustainable. Also with age and experience, institutions may become operationally more efficient. Figures 3 and 4 show these two factors are unlikely to be the sources of difficulties.

[See Figures 3 and 4 at the end of the document]

In neither Figure there is a clear correlation between the index values and the size measured by membership (Figure 3) or age measured by year in operation (Figure 4). Figure 5, however, shows an interesting result.

[See Figure 5 at the end of the document]

When the index values from all countries are plotted against the proportion of women in the membership of each MS&L institution, a negative relationship emerges. It suggests that a higher proportion of women are associated with a lower index value and thus, a higher degree of sustainability. These results are in line with what has been found repeatedly in case studies, that is women financial cooperative arrangements fare better on average (see for example, Mayoux, 2000).

To summarize, the overall results indicate clearly that the systems of MS&L are diverse across countries but many show signs of non sustainability (measured by $g>1.5$) as they do not present an attractive option for potential members. In those cases joining is synonymous of a high level of risk. It is clear that a more in-depth analysis into the reasons that might be at the source of these results is necessary. Since the index is constructed from

financial information from MS&L institutions, the next section takes a closer look at the role of the financial components that are directly under the control of the institutions.

5.2. The role of some financial factors.

The decomposition of the index into major components that can be linked to management strategies is useful to identify the sources of the relatively high g-values. There are three main components in the index: institution's liabilities per unit of loan, operational cost per unit of loan, and, net expected return per unit of loan for a person who considers joining. From this decomposition an institution can be perceived as risky to potential members for three reasons: too high liability; too high management costs; too low expected return. Potential members are concerned about one or more of these factors if their value is not reasonable and the following analysis will identify which ones are likely to cause concern in each country.

The goal is to evaluate the contribution of each of the three components in the high value of the indexes. To reach conclusions, two benchmarks must be established. First, at what level is the index value considered "high"? To make allowance for statistical error, a g-value of 1.5 is considered as the starting point for "high". Hence, all institutions with an index value greater or equal to 1.5 are part of this analysis. The second benchmark concerns what would be a "reasonable" value for the three components (i.e., liabilities, management costs and returns)? Clearly, there is no objective way to determine such a value. So, we arbitrarily chose the national average of each component as the benchmark. Hence, an institution with an index value above 1.5 and liabilities above the national average but costs and returns in line with the national average would be seen as an

institution with liability management difficulties. The results of the analysis are given in Table 5 for each country separately.

Table 5: Sources of mistrust for unsustainable institutions

		Factors of non-sustainability			
Country	**Institutions with g>1.5**	**Liabilities above national average[a/]**	**Operational Costs above national average**	**Expected return below national average**	**All three**
	1.	**2.**	**3.**	**4.**	**5.**
Benin					
number of institutions	4	4	3	4	3
% of members	6.3%	6.3%	5.5%	6.3%	-
% of col.1	-	**100%**	75%	**100%**	75%
Burkina Faso					
number of institutions	1	1	0	0	0
% of members	1.0%	1.0%	-	-	-
% of col.1	-	**100%**	-	-	-
Cote d'Ivoire					
number of institutions	6	5	4	5	3
% of members	97.3%	96.8%	3.6%	4.2%	-
% of col.1	-	83%	67%	83%	50%
Senegal					
number of institutions	12	9	6	1	1
% of members	76.9%	75.7%	61.5%	1.0%	-
% of col.1	-	75%	50%	8%	8%
Togo					
number of institutions	4	4	4	4	4
% of members	2.0%	2.0%	2.0%	2.0%	-
% of col.1	-	**100%**	**100%**	**100%**	**100%**

a/ Note that the conclusions are identical whether liabilities are evaluated at the maximum or minimum interest rate.

Some important information emerges from this Table.

- First, Niger does not have a single institution with an index value above 1.5. As a matter of fact the maximum value is less than 1.3 (see Table 4). Hence, Niger is not concerned by this part of the analysis.

- Second, the proportions of members belonging to institutions with very high index values vary greatly from one country to the other. It is as high as 97% and 77% in Cote d'Ivoire and Senegal and, below 7% in Benin, Burkina Faso and Togo (Column 1). As a consequence, the magnitude of the problem is not quite the same in all countries.

- Third, when considering the three sources of possible difficulties (high liabilities, high operational costs or low expected return for prospective members), liability costs are a problem in all countries (Column 2). For more than 75% of unsustainable institutions (and 1005 of them in 3 countries) liability costs are above the national average. Also in some countries, more than ¾ of the membership belong to such institutions (Cote d'Ivoire and Senegal).

- Fourth, more than ½ of the institutions also have net operational costs (after subsidy) above the national average (Column 3). That is the case in 4 out of 5 countries. However, it is only in Senegal that the problem affects a large proportion of members. This may suggest that operational cost problems are concentrated on small institutions contrary to high liability problems.

- Fifth, Senegal stands out as a remarkable case for the expected return factor. Only 1 institution, among those with high index values, exhibits an expected return below the national average and it represents only 1% of the membership. In Benin and Togo, all institutions have below average return. Since the rate charged by moneylenders is assumed to be the identical in all countries, the expected return is based on the entry fee relative to the average credit. Hence, it seems that in Senegal, institutions which might be in difficult positions from a managerial viewpoint have refrained from passing some of the burden onto new members.

- Sixth, institutions cumulate all three problems systematically only in one country (Togo) and, they represent only 4% of the membership.

To summarize, a large majority of unsustainable institutions exhibit excessive liability burdens and many of them also have operational costs above the national average. Fortunately, in most countries these institutions do not represent a large share of the membership. However, for countries with a high concentration ratio in the mutual system this means that while the dominant firms were relatively efficient in running their business in 1996-1997, small institutions had much difficulty. While there is no direct evidence for it in this study, this could have implications for access to credit for some categories of clients simply because institutions tend to be specialized.

These conclusions should be taken with caution, in part because in some instances, actual numbers could not be found and estimates enter the index computation and in part because the formula is based on a static computation of financial sustainability. In reality, institutions can carry losses over from one period to another and don't have to break-even in any given period. However, when operational expenses are subsidized, persistent losses are not really an option. Also, it is clear that the index does not capture the non-quantifiable factors influencing participation in a mutual. Members may derive benefits from it that are

not measurable and thus, not taken into account. Nevertheless, these index values and the analysis of the causes for high g-values clearly show that some improvement can be brought to the overall financial management of these institutions. These results tend to confirm under a different angle what practitioners have known about mutual institutions in developing countries for a long time: better financial management is needed in mutual S&L institutions for these very valuable systems to become true financial sector intermediaries for low income people.

The next section is devoted to some comments regarding the information that would be necessary to improve the accuracy of the index calculation. To be a better guide for future members and institutions alike, some improvement should be brought to the quality of data available.

6. Better Statistical Information for a more Accurate Index.

The index proposed in this study is comprehensive enough to get a reasonable insight into some of the problems MS&L institutions in WAEMU face. However, the measurement quality of the index would improve if more accurate statistical information were available. This section suggests some steps to take to improve the quality of the index and, thus, allow for a more accurate analysis of the underlying problems of MS&L and, better policy recommendations. It must be noted that we are not evaluating the intrinsic quality of the data collected but how the collection can be extended to improve the precision of the index. Generally speaking, two types of improvement should be considered: First, more disaggregation in existing information; second, additional information.

One of the important components of the formula is the net benefit of joining for the prospective member. Its calculation rests partly on information external to the mutual institution and thus, refers to alternative opportunities. In our case, we restricted these opportunities to the informal market and the moneylenders. In our calculation we had to rely on the maximum usurer rate for micro finance institutions. Clearly this is only an approximation, moneylenders being free to charge the rate they think appropriate given the competition in the local market. One can however, assume that in the presence of a MS&L institution within a certain distance, they could not charge too high a rate. The calculation of the net benefit of joining also rests on the cost charged by the mutual to new members. It is given by the statutory requirements of the mutual which are known and are expected to be well captured. However, there may be other costs directly attached to credit applications that have not been taken into account.

> ***Recommendation 1a:*** *a more accurate calculation of the viability of mutual institutions requires the gathering of data on informal money market rates (rates charged by village or neighborhood moneylenders). Regional coverage would be desired, as the degree of competition would affect the rates at the local level.*

> ***Recommendation 1b:*** *a more accurate calculation of the viability of mutual institutions requires the gathering of data on costs borne by borrowers from mutual institutions other than the entry fee (application fees, taxes, and the like).*

We now turn to the mutual institution's liabilities and interest charges per unit of loan. At present, the lack of information on the portfolio structure and the corresponding interest rates, forces us to treat liabilities as if they were homogeneous and use a single interest rate for all liabilities. Of course interest rates on time and demand deposits (and on credit lines) are not uniform and the actual cost of outstanding liabilities can vary significantly depending on the actual portfolio structure. Applying a uniform interest rate to

the entire liability portfolio may therefore distort the actual costs of the institution. In this study, we provided two extreme scenarios, a maximum and a minimum value using the higher and the lower rate alternatively for the entire portfolio to get some insight into the magnitude of the bias. Fortunately, the results show little variations under both scenarios. Knowing the structure of the portfolio and the corresponding interest rates would also allow for simulations according to different liability portfolio structures and therefore, comparisons between the portfolio strategies of different MS&L. Given the importance of liability costs for institutions with high index values, it would be of great advantage to calculate more precisely the liability costs.

> ***Recommendation 2:*** *a more accurate calculation of the viability of mutual institutions requires the* ***detailed structure of the liability portfolio*** *of each lender, both in terms of amounts classified by degree of liquidity with matching interest rates paid on each class of liability. (For time-linked liabilities detailed data on maturity dates are also desirable.)*

Turning now to the value of outstanding loans, analogous considerations apply. Not all loans yield the same return and maturity dates vary. As in the case of liabilities, the structure of the portfolio may matter. Thus, a mutual institution with large amounts of long term loans (and correspondingly high long term liabilities) may have a substantially different index value from a mutual with more liquid assets. Distinguishing between long and short term loans and interest rates would permit comparisons between MS&Ls with similar portfolio structures and again more refined conclusions could be drawn also about other factors. The loan portfolio also enters the operational cost per unit of loan and similar considerations apply. The value of the index computed on the basis of the actual size and rates for each component of the loan portfolio would simply be more accurate and lead to improved conclusions on two fronts: first, several institutions presently in the bracket 1 to 1.499 may in fact be sustainable. Second, better insight could be gained about the reasons for the very large values for some institutions.

Recommendation 3: *a more accurate calculation of the viability of mutual institutions requires* ***greater detail on the structure of the loan portfolio*** *of each lender, both in terms of amounts classified by degree of liquidity and in terms of interest rates charged on each class of liability. (For time-linked loans detailed data on maturity dates are also desirable.)*

Finally a key difference between institutions is the accumulation of reserves for which information is not presently available. It is rather obvious that to be trustable, recommendations on the ability of MS&L institutions to attract new members should be based on an accurate computation of the true financial risk faced by members. This includes the coverage provided by the institutions, i.e., reserves that have been built-up through time. As there is a clear legislation about the constitution of reserves, transparency in the information would also contribute to improving management of MS&L institutions.

Recommendation 4: *the disclosure of the amount of accumulated reserves would provide a true evaluation of the risk incurred by actual and prospective members and also contribute to better management since the legislation is clear about the compulsory contributions.*

For the index to be a truly informative instrument for institutions and prospective members alike, recommendations 1 to 4 should be given some consideration.

7. Conclusion.

In this study we use an index to evaluate the level of trust potential members are asked to place in mutual institutions. Such index is also an indicator of the sustainability of mutual institutions since a value below unity provides a necessary but not sufficient condition to attract new members. Even if an institution appears trustable through the index (index less than 1), prospective members may still find too risky to join. Moreover, prospective members will consider other factors such as distance to the institution, range

and quality of services before joining. However, an institution unable to inspire trust (i.e., index more than 1) will soon run out of members. We computed this index for a sample of mutual savings and loan institutions in WAEMU countries and a few striking results emerge. First, the proportion of national membership covered by problem-institutions varies greatly from one country to another. It is relatively small in Benin (6.3%), Burkina Faso (1%) and Togo (2%) and extremely large in Cote d'Ivoire (97.3%). This suggests that, in these last two countries most institutions have difficulties. It is shown that not all 3 sources of mistrust (i.e., high liabilities, high operational costs and low expected returns) play the same role in the lack of sustainability of these institutions. Only in one country are all institutions characterized by non-satisfactory performance in all three aspects. In other countries, Benin Burkina Faso, Cote d'Ivoire and Senegal, problems tend to arise most often from high liabilities. This result in fact questions the ability of MS&L institutions to manage efficiently savings and credit simultaneously. Finally, the results about operational costs are rather satisfactory but that may be because these institutions sometimes benefit from large subsidies. These conclusions, while reasonably accurate, depend heavily on the quality of the data used for the analysis and suggestions are made to refine the information collection mostly in terms of providing access to more disaggregated data.

References

Banerjee, A:V., T. Besley and T. Guinnane, 1994, "Thy Neighbor's Keeper: the Design of a Credit Cooperative with Theory and a Test." *Quarterly Journal of Economics* 109, 491-515.

Calmeadow, various years, *The MicroBanking Bulletin*. Washington D.C.

Galassi, F.L., 2001, "Measuring Social Capital: Culture as an Explanation of Italy's Economic Dualism" *European Review of Economic History.* 5, 29-59.

Galassi, F.L., and D.M. Gross, 2003, "Trust and Sustainability of Mutual Savings and Loan Institutions." Mimeo. International Labour Office. March.

ILO/BCEAO, International Labour Office/Banque Centrale des Etats de l'Afrique de L'Ouest, 1997, *Banque de Données sur les Systèmes Financiers Décentralisés. Bénin.* 1994-1995. Septembre. Geneva and Dakar.

_____, 1998a, *Banque de Données sur les Systèmes Financiers Décentralisés. Bénin.* 1996-1997. Octobre. Geneva and Dakar.

_____, 1998b, *Banque de Données sur les Systèmes Financiers Décentralisés. Burkina Faso.* 1996-1997. Octobre. Geneva and Dakar.

_____, 1998c, *Banque de Données sur les Systèmes Financiers Décentralisés. Côte d'Ivoire.* 1996-1997. Octobre. Geneva and Dakar.

_____, 1998d, *Banque de Données sur les Systèmes Financiers Décentralisés. Niger.* 1996-1997. Octobre. Geneva and Dakar.

_____, 1998e, *Banque de Données sur les Systèmes Financiers Décentralisés. Sénégal.* 1996-1997. Octobre. Geneva and Dakar.

_____, 1998f, *Banque de Données sur les Systèmes Financiers Décentralisés. Togo.* 1996-1997. Octobre. Geneva and Dakar.

Mayoux, L., 2000."Micro-Finance and the Empowerment of Women. A Review of the Key Issues." Working Paper No 23. Social Finance Programme. International Labour Office, Geneva.

PARMEC/UMOA, Projet d'Appui à la Réglementation sur les Mutuelles d'Epargne et de Crédit- Union Monétaire Ouest Africaine, 1993, *Réglementation des Institutions Mutualistes ou Coopératives d'Epargne et de Crédit. Recueil des Textes*. Décembre. Dakar.

Stiglitz, J.E., and A. Weiss, 1981, "Credit Rationing with Imperfect Information." *American Economic Review*. 71, 393-410.

WB, World Bank, 2000, *World Development Indicators.* Electronic Databank. Washington, D.C..

APPENDIX I: Sample institutions for each country.

Benin

NAME	Number of Agencies	Year started	Membership
FECECAM, Fédération des Caisses d'Epargne et de Crédit Agricole Mutuel du Bénin	111	1993	217861
CREP, Caisses Rurales d'Epargne et de Prêt	88	1992	6128
MDB, Mutuelle pour le Développement à la Base	2	1995	2423
CBDIBA, Centre Béninois pour le Développement des Initiatives à la Base	33	1992	11663
BCM, Bénin-Crédit-Mutuel	1	1993	1328
FEDIBA, Fonds d'Entraide et de Développement des Initiatives à la Base	8	1994	2069
PASSEF-COTONOU, Projet d'Association d'Entraide des Femmes	23	1992	3456
FAC-Mono, Financière Agricole et Mutuelle Coopérative du Mono	7	1996	7095
FAP, Femmes-Action-Progrès	8	1997	535
MJCD, Mutuelle de Jeunes Chrétiens pour le Développement	8	1991	44

Burkina Faso

NAME	Number of Agencies	Year started	Membership
RCPB, Bureau des Caisses Populaires du Burkina	48	1972	120000
URC-BAM, Union Régionale des Coopératives d'Epargne et de Crédit du Bam	107	1983	21641
CVECA-SSL, Réseau des Caisses Villageoises d'Epargne et de Crédit Autogérées de la Sissili	50	1992	12101
C.S.N., Cooperative Songre-Nooma	2	1995	3661
COOPEC WU-PAKUWE, Coopérative d'Epargne et de Crédit Wu-Pakuwe	10	1994	1677
CVECA-SOUM, Réseau des Caisses Villageoises d'Epargne et de Crédit Autogérées du Soum	38	1991	7153

Cote d'Ivoire

NAME	Number of Agencies	Year started	Membership
FENACOOPEC-CI, Fédération Nationale des Coopé– ratives d'Epargne et de Crédit de Côte d'Ivoire	98	1976	108722
FMDSI, Fonds Mutuel pour le Développement du Secteur Informel	6	1994	2648
CMEC, Caisses Mutuelles d'Epargne et de Crédit	8	1995	1209
MUCREFAB, Mutuelle de Crédit et d'Epargne des Femmes d'Aboisso-Bounoua et Grand-Bassam	3	1994	1170
UMECI, Union des Mutualistes d'Entreprise de Côte d'Ivoire	1	1993	761
MUCREFBO, Mutuelle de Crédit et d'Epargne pour les Femmes de la Région de Bouafle	1	1996	1178
GES-CI, Groupe d'Epargne et de Soutien en Côte d'Ivoire	1	1997	655
MUTAS, Mutuelle d'Action Sociale	8	1996	20
CEP-CECREV, Compte d'Epargne et de Prêt Rural-Compte d'Epargne et de Crédit Urbain	2	1997	*345*

Niger

NAME	Number of Agencies	Year started	Membership
CPEC TAImako, Caisse Populaire d'Epargne et de Crédit Taïmako	1	1993	2565
WOCCU, Caisses Populaires d'Epargne et de Crédit au Niger	36	1989	7301
PMR/RFA, Projet Micro- Réalisations R.F.A.	36	1994	5445
MECREF, Mutuelle d'Epargne et de Crédit des Femmes	1	1996	1237
N'GADA de DIFFA, Mutuelle d'Epargne et de Crédit	1	1996	923
BPCN, Banque Populaire du Canton de N'Dounga	1	1992	440
AQUADEV, Aquaculture et Développement	1	1996	500

Senegal

NAME	Number of Agencies	Year started	Membership
CMS, Crédit Mutuel du Sénégal	74	1993	72217
ACEP, Alliance de Crédit et d'Epargne pour la Production	23	1986	8160
PAMECAS, Programme d'Appuis aux Mutuelles d'Epargne et de Crédit au Sénégal	21	1995	13792
CEC des Femmes de Dakar, Caisse d'Epargne et de Crédit des Femmes de Dakar	11	1987	7192
CVAG-Podor, Caisse Villageoise Autogérées de Podor	29	1989	2956
CAPEC-Sococim, Caisse d'Epargne et de Crédit et de Solidarité des Travailleurs de la Sococim	1	1981	214
MECH, Mutuelle d'Epargne et de Crédit de Hann	1	1992	1752
CAPEC-Primoca, Caisse d'Epargne et de Crédit du Primoca	10	1993	3985
CEC-UCAD, Caisse d'Epargne et de Crédit de l'Université Cheikh Anta Diop de Dakar et Etablissements rattaches à Université	1	1993	956
MECAS, Mutuelle d'Epargne et de Crédit des Artisans Sénégalais	1	1996	924
CCC-Louga, Conseil Consultatif des CAPEC de Louga	12	1989	2394
CMECAT, Caisse Mutuelle d'Epargne et de Crédit des Artisans de Tamba	1	1996	386
CAPEC-Farpas, Caisse Populaire d'Epargne et de Crédit des Retraités	8	1990	1197
MEC-Unacois, Mutuelle d'Epargne et de Crédit de l'Unacois	2	1996	653
RECEC FDEA-Naataangue, Réseau des Caisses d'Epargne et de Crédit FDEA Naataangue	3	1996	581
MECK, Mutuelle d'Epargne et de Crédit de Kayar	*1*		*253*
CVEC/Podor, Caisse Villageoise d'Epargne et de Crédit de Podor	18	1989	2176
MUWEC, Réseau Mutuel Wakili d'Epargne et de Crédit	*5*	*1995*	*1063*
MECT, Mutuelle d'Epargne et de Crédit Teranga	1	1997	213
CCC/Thies, Conseil Consultatif des CAPEC de Thies	4	1995	957
MEC/PROTES, Mutuelle d'Epargne et de Crédit de la Promotion de la Teinturerie Sénégalaise	1	1996	377
CREC, Caisses Rurales d'Epargne et de Crédit	3	1994	423
MECR, Mutuelle d'Epargne et de Crédit du Réseau Africain de Soutien à l'Entreprenariat Féminin (RASEF)	1	1996	642
CECAS, Caisse Mutualiste d'Epargne et de Crédit des Artisans de St-Louis	1	1993	247
COFDEC, Collectif des Femmes pour le Développement de l'Epargne-Crédit	1	1994	503

Togo

NAME	Number of Agencies	Year started	Membership
FUCEC-TOGO, Fédération des Unions Coopératives d'Epargne et de Crédit du TOGO	142	1969	86805
CECA, Coopérative d'Epargne et de Crédit des Artisans	1	1990	1131
GRAIP, Groupe de Recherche et d'Appui pour la Promotion des Initiatives Privées	7	1995	1446
CAFIP, Club d'Appui Financier aux Initiatives Privées	6	1994	354
CSM, Caisse de Secours Mutuel	1	1990	446
Mutuelle ADSEDZI, Mutuelle de Crédit Epargne pour les Groupements de la Région des Plateaux, TOGO	10	1988	1215
FECECAV, Fédération des Caisses d'Epargne et de Crédit des Associations Villageoises	34	1986	20512
APGA, Association pour la Promotion des Groupements Agricoles	4	1994	700
CMECF, Caisse Mutuelle d'Epargne et de Crédit pour les Femmes	1	1992	357
CPDE/DDF-NIAMTOUGOU, Caisse Populaire pour le Développement et l'Entraide Socio-Sanitaire Notre-Dame de Fatima	1	1989	488
CMEC, Caisse Mutuelle d'Epargne et de Crédit	1	1985	388
Adé GA/ACVR, Adé GA Caisse d'Epargne et de Crédit de l'Association des Communautés Villageoises Responsables	18	1992	716
MUREC, Mutuelle Rurale d'Epargne et de Crédit	1	1995	354
CPDE-Kétao Togo, Caisse Populaire d'Entraide et de Développement Sainte Thérèse de Kétao	1	1991	61
CREP Logowome, Caisse Rurale d'Epargne et de Prêt	1	1995	90
Mutuelle de Crédit Epargne NEVAEME	1	1995	55
Tibi, Mutuelle d'Epargne et de Crédit	1	1996	54
Mutuelle YAYRA	1	1996	41
Mutuelle FAFALI	1	1995	59

APPENDIX II: Descriptions of Components

Yearly contribution to reserves. Actual contribution or when unavailable, estimated contribution. The estimated contribution is based on the central bank regulation which states that loan loss reserve payments should be: 20% for loan payment with 0-3 month delay; 40%, for 3-6 month delay; 80%, for 6-12 month delay and, 100%, for delays beyond 12 months (ILO/BCEAO, 1997). When detailed data on loans overdue per category is not available and only total loan overdue is, a 40% average rate is applied.

Accumulated reserves. Computed under the hypothesis that for each year of operation, the institution contributed the same amount as in the observation year.

Total (average) outstanding credit (in CFA Fr.). In cases where total outstanding credit is not available, the value of total credit allocated during the year is used. Average is obtained by dividing by the number of credits.

Money lender rate. 40%.

Mutual entry fee. In case of range, the minimum value was chosen.

Interest rate on deposits. Most mutual institutions quote the lowest and highest rates for various types of deposits. Both were used to compute maximum and minimum index values thereby providing the extreme values within which g lies depending on the composition of the savings portfolio of institutions;

Total deposits (in CFA Fr.). Demand deposits and term deposits.

Operational costs. Administrative and personal costs net of operational subsidies.

Default rate. Loan repayment rate (i.e., total amount repaid/total credits that have reached maturity). When the information is not available, the average value for the country is used.

Figure 1: Distribution of indexes for the three sustainable systems

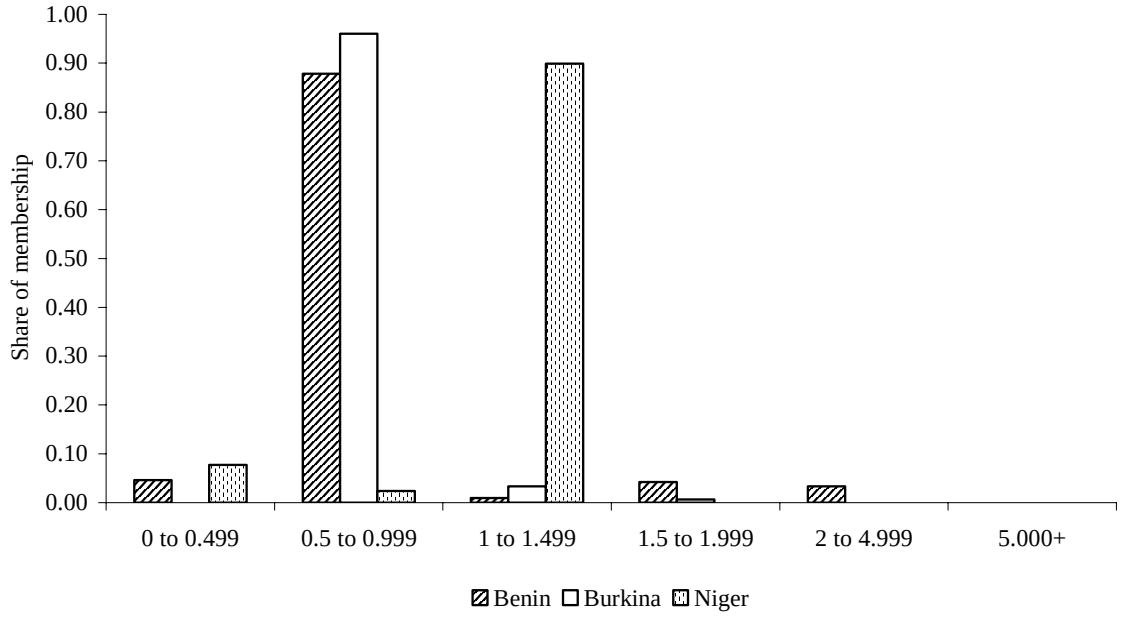

Figure 2: Distribution of indexes for the three non-sustainable systems

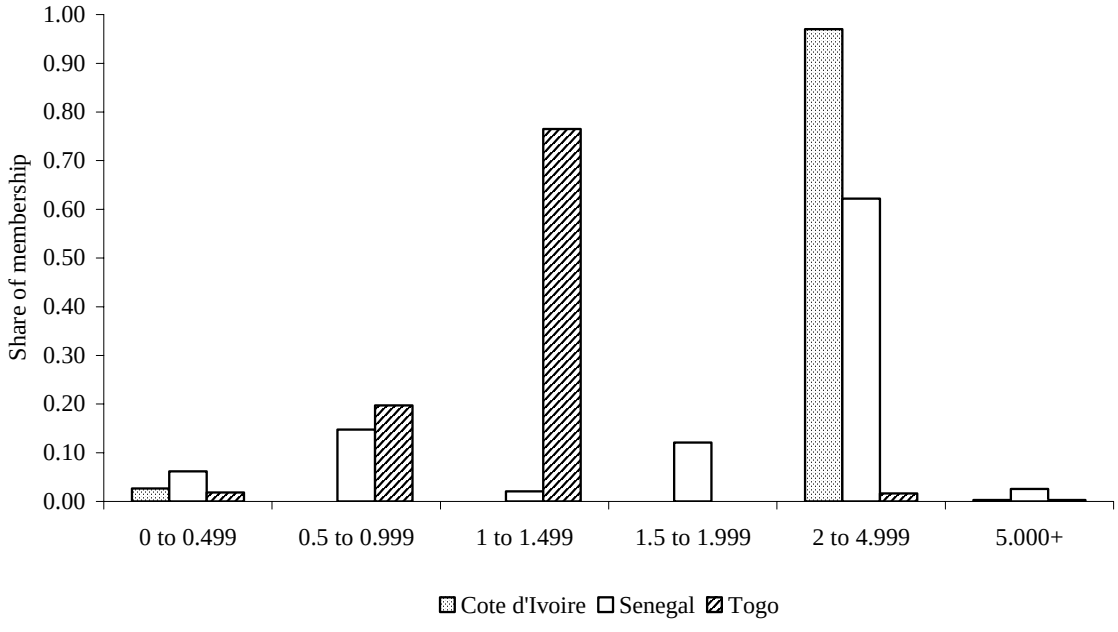

Figure 3: Index values and size of the institution

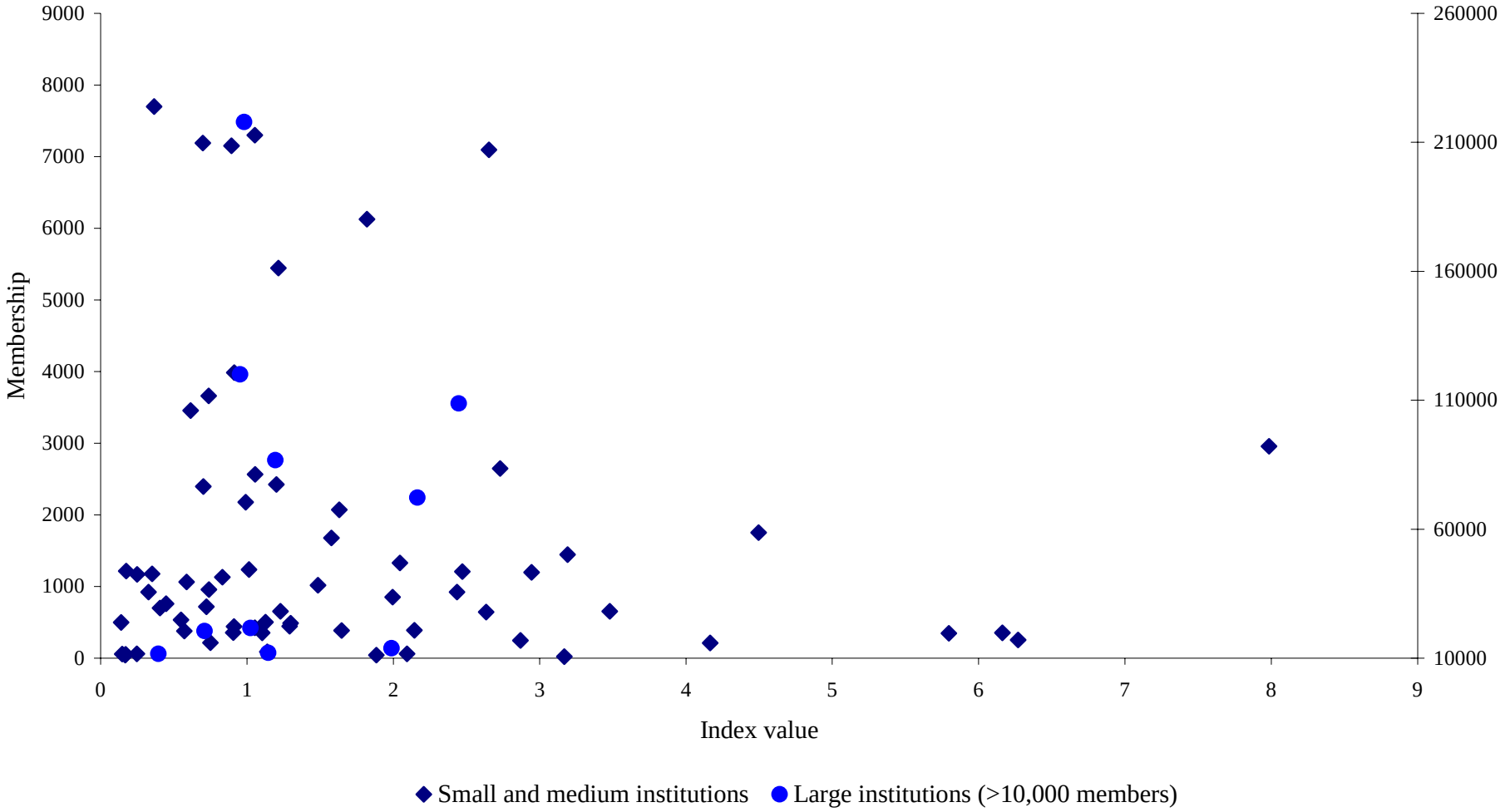

Figure 4: Index values and age of the institution

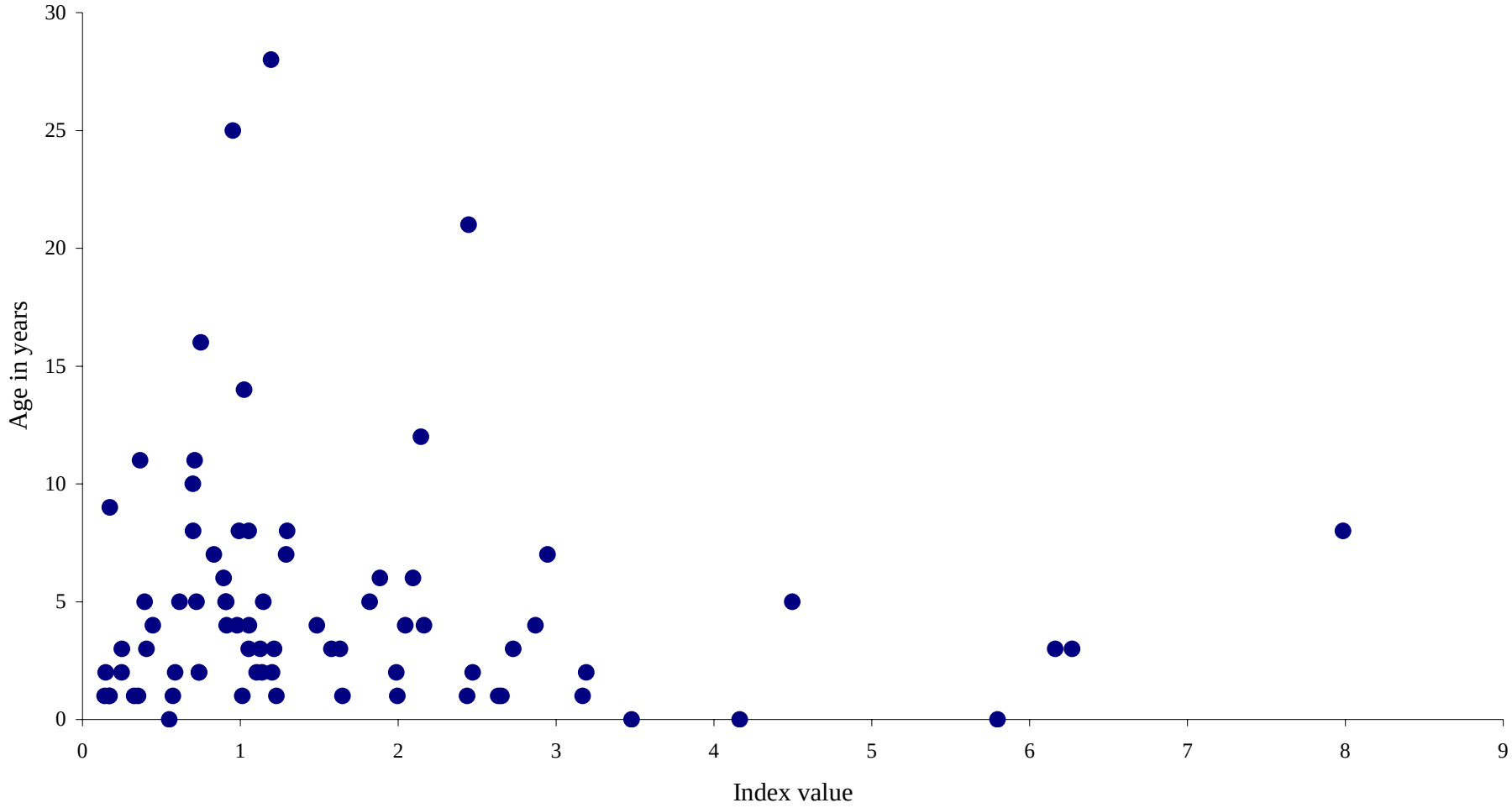

Figure 5: Index values and % of women members