There are two datasets which have been included in the pkzipped file nigeria.zip. They are:

Format of the dataset SUMMARY.TXT:

Each observation in this data file corresponds to a single household. There are 198 households and 78 variables per observation. This is an ascii dataset in fixed format. Each variable has a fixed format as described in the attached documentation. The position of each variable is also described in the documentation. Blanks are used to delimit variables. The missing value character is '.'. A short description of each of the variables is also attached. Each record is broken into 8 lines in order to restrict the maximum length of any line to 80 columns.

Format of the dataset SUMCRED.TXT:

The second dataset is SUMCRED.TXT. Each observation in this data file corresponds to a single loan. There are 96 variables per observation. Many households have more than one loan, and thus account for more than one observation in this data file. In those cases, the household-level variables are repeated in each of the relevant observations. This is an ascii dataset in fixed format. There are 821 records and 96 variables per record. Each variable has a fixed format as described in the attached document. The position of each variable is also described in that document. Blanks are used to delimit variables. The missing value character is '.'. A short description of each of the variables is also attached. Each record is broken into 8 lines in order to restrict the maximum length of any line to 80 columns.

All money values in both datasets are in current Naira. There is no adjustment for inflation.

Contents of BASS dataset: sumcred.txt
Dataset label:
Created: 1-20-96 15:20
Number of variables: 96
Number of observations: 821
Data Bytes per observation: 768
File space (bytes) used by header: 6006
File space (bytes) used by observations: 630528
Total size (bytes) of dataset: 636534
Dataset type: DATA

List of Variables (Positional Order)

#	Variable Name	Type	Length	Position	Dimension	Format	Label, if any
1	OLDLOAN	NUMERIC	8	1		4.0	loannumber of original loan before splits
2	OLDROUND	NUMERIC	8	9		4.0	round as originally recorded before splits
3	SPLIT	NUMERIC	8	17		3.0	1 if this loan split from more complex original loan
4	LOANVAL	NUMERIC	8	25		9.2	the value of the loan in Naira net of dashes
5	LOANDAY	NUMERIC	8	33		7.0	the date of the loan,# of days after 1/1/88
6	REPVAL	NUMERIC	8	41		9.2	value of repayments made
7	REPDAY	NUMERIC	8	49		7.0	date of repayment,# of days after 1/1/88
8	NOMEETINGS	NUMERIC	8	57		3.0	# of meetings before loan was made
9	AV_DIST	NUMERIC	8	65		4.0	average distance of meeting places (in klm) from home
10	INTEREST	NUMERIC	8	73		9.2	% increase in promised payment over totalvalue
11	TOTALVALUE	NUMERIC	8	81		9.2	value of initial loan
12	PVALUE	NUMERIC	8	89		9.2	value of payments promised at disbursement of loan
13	DVALUE	NUMERIC	8	97		9.2	value of any dashes made to get loan
14	CVALUE	NUMERIC	8	105		9.2	value of collateral pledged
15	HHNUM	NUMERIC	8	113		4.0	1xx if gangara, 2xx if madobi,3xx if marwa,4xx if yakasai
16	RESPON_SEX	NUMERIC	8	121		2.0	1 if respondant is male, 0 if female
17	LOAN_IN	NUMERIC	8	129		2.0	1 if initial loan is to hh, 0 if out from hh
18	MORETOCOME	NUMERIC	8	137		2.0	1 there is an explicit promise to pay more
19	FIXTERM	NUMERIC	8	145		2.0	1 if explicit repayment amount was set
20	COLLATERAL	NUMERIC	8	153		2.0	1 if collateral has been pledged by borrower
21	INVILLAGE	NUMERIC	8	161		2.0	1 if borrower and lender live in same village

22	REGULATED	NUMERIC	8	169	2.0
	1 if loan from N.T.C. or a bank				
23	INFAMILY	NUMERIC	8	177	2.0
	1 if borrower and lender are relatives				
24	INCREDIT	NUMERIC	8	185	2.0
	1 if borrower and lender have a history of credit deals				
25	INGIFTS	NUMERIC	8	193	2.0
	1 if borrower and lender have a history of exchanging gifts				
26	BADPROBS	NUMERIC	8	201	2.0
	1 if other party experienced severe, unexpected problem				
27	LATEPROBS	NUMERIC	8	209	2.0
	1 if other party problem began after the loan				
28	KNOWS	NUMERIC	8	217	2.0
	1 if hh has knowledge of other partys shocks				
29	SEX	NUMERIC	8	225	2.0
	1 if other party is male, 0 if female				
30	FUTUREHELP	NUMERIC	8	233	2.0
	1 if future credit in same direction still possible				
31	COLLAT_DEF	NUMERIC	8	241	2.0
	1 if any collateral has been defaulted				
32	LOANNUMBER	NUMERIC	8	249	3.0
	numbered for each round				
33	ROUND	NUMERIC	8	257	3.0
	round during which loan first mentionned				
34	GRAIN5	NUMERIC	8	265	9.2
	value of grain stocks in round5				
35	GRAIN1	NUMERIC	8	273	9.2
	value of grain stocks in round1				
36	CASH1	NUMERIC	8	281	9.2
	value of cash holdings in round1				
37	GRAIN8	NUMERIC	8	289	9.2
	value of grain stocks in round8				
38	ONFARM8	NUMERIC	8	297	9.2
	value of crops still on farm during round8				
39	CATTLE4	NUMERIC	8	305	9.2
	value of cattle owned in round4				
40	NOMA4	NUMERIC	8	313	9.2
	value of shanun noma owned in round4				
41	OTHERLIVE4	NUMERIC	8	321	9.2
	value of small livestock owned in round4				
42	CATTLE2	NUMERIC	8	329	9.2
	value of cattle owned in round2				
43	NOMA2	NUMERIC	8	337	9.2
	value of shanun noma owned in round2				
44	OTHERLIVE2	NUMERIC	8	345	9.2
	value of small livestock owned in round2				
45	TRADESTK4	NUMERIC	8	353	9.2
	value of goods owned for trading in round4				
46	AREA_O_G_U	NUMERIC	8	361	8.3
	area of owned gona land used this season				
47	AREA_O_G_F	NUMERIC	8	369	8.3
	area of owned gona land left fallow this season				
48	AREA_O_G_L	NUMERIC	8	377	8.3
	area of owned gona land let out to others this season				
49	AREA_O_F_U	NUMERIC	8	385	8.3
	area of owned fadama land used this season				
50	AREA_O_F_F	NUMERIC	8	393	8.3
	area of owned fadama land left fallow this season				

51	AREA_O_F_L	NUMERIC	8	401	8.3
	area of owned fadama land let out to others this season				
52	AREA_B_G_U	NUMERIC	8	409	8.3
	area of borrowed gona land used this season				
53	AREA_B_G_F	NUMERIC	8	417	8.3
	area of borrowed gona land left fallow this season				
54	AREA_B_G_L	NUMERIC	8	425	8.3
	area of borrowed gona land let out to others this season				
55	AREA_B_F_U	NUMERIC	8	433	8.3
	area of borrowed fadama land used this season				
56	AREA_B_F_F	NUMERIC	8	441	8.3
	area of borrowed fadama land left fallow this season				
57	AREA_B_F_L	NUMERIC	8	449	8.3
	area of borrowed fadama land let to others this season				
58	NUM_O_G_U	NUMERIC	8	457	4.0
	number of owned gona farms used this season				
59	NUM_O_G_F	NUMERIC	8	465	4.0
	number of owned gona farms left fallow this season				
60	NUM_O_G_L	NUMERIC	8	473	4.0
	number of owned gona farms let to others this season				
61	NUM_O_F_U	NUMERIC	8	481	4.0
	number of owned fadama farms used this season				
62	NUM_O_F_F	NUMERIC	8	489	4.0
	number of owned fadama farms left fallow this season				
63	NUM_O_F_L	NUMERIC	8	497	4.0
	number of owned fadama farms let to others this season				
64	NUM_B_G_U	NUMERIC	8	505	4.0
	number of borrowed gona farms used this season				
65	NUM_B_G_F	NUMERIC	8	513	4.0
	number of borrowed gona farms left fallow this season				
66	NUM_B_G_L	NUMERIC	8	521	4.0
	number of borrowed gona farms let to others this season				
67	NUM_B_F_U	NUMERIC	8	529	4.0
	number of borrowed fadama farms used this season				
68	NUM_B_F_F	NUMERIC	8	537	4.0
	number of borrowed fadama farms left fallow this season				
69	NUM_B_F_L	NUMERIC	8	545	4.0
	number of borrowed fadama farms let to others this season				
70	ASSETVAL	NUMERIC	8	553	9.2
	value of household assets (excluding kayan ado) at round1				
71	ROOMSZ	NUMERIC	8	561	3.0
	number of rooms roofing sheets				
72	ROOMSM	NUMERIC	8	569	3.0
	number of rooms with mud roofs				
73	ROOMSG	NUMERIC	8	577	3.0
	number of rooms with grass roofs				
74	WATER	NUMERIC	8	585	3.0
	0-river or public well;1-mixture;2-own well only				
75	AGE	NUMERIC	8	593	4.0
	age in years of hh head				
76	PRIMARY	NUMERIC	8	601	4.0
	number of years of western schooling completed by hhh				
77	ISLAM	NUMERIC	8	609	4.0
	number of izu of hhh				
78	MIGEARN	NUMERIC	8	617	9.2
	earnings during migration last year				
79	WIVES	NUMERIC	8	625	4.0
	number of wives in household				

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   80  MARRIEDK         NUMERIC         8         633                4.0
         number of married sons in hh
   81  MARRIEDO         NUMERIC         8         641                4.0
         number of other married men in hh
   82  AGWRKRK          NUMERIC         8         649                4.0
         number of nonmarried sons between 10 and 60 in hh
   83  AGWRKRO          NUMERIC         8         657                4.0
         number of other nonmarried males between 10 and 60 in hh
   84  FEMWRKRK         NUMERIC         8         665                4.0
         number of daughters between 10 and 60 in hh
   85  FEMWRKRO         NUMERIC         8         673                4.0
         number of other females between 10 and 60 in hh
   86  FEMK             NUMERIC         8         681                4.0
         number of daughters under 10 in hh
   87  FEMO             NUMERIC         8         689                4.0
         number of other females under 10 in hh
   88  MALEK            NUMERIC         8         697                4.0
         number of sons under 10 in hh
   89  MALEO            NUMERIC         8         705                4.0
         number of other males under 10 in hh
   90  OLDMEN           NUMERIC         8         713                4.0
         number of men over 60 in hh
   91  OLDWOMEN         NUMERIC         8         721                4.0
         number of women over 60 in hh
   92  KIDSNEAR         NUMERIC         8         729                4.0
         number of children out of hh but in village
   93  KIDSFAR          NUMERIC         8         737                4.0
         number of children out of village
   94  HERELONG         NUMERIC         8         745                4.0
         number of generations (up to 4) hhh family has been in village
   95  GANDU            NUMERIC         8         753                4.0
         0-no gandu;1-with father;2-with brother;3-with son
   96  SKILLS           NUMERIC         8         761                4.0
         number of hh menbers with special skills


List of Variables (Alphabetical Order)

    #  Variable Name    Type       Length    Position  Dimension  Format
          Label, if any

   75  AGE              NUMERIC         8         593                4.0
         age in years of hh head
   82  AGWRKRK          NUMERIC         8         649                4.0
         number of nonmarried sons between 10 and 60 in hh
   83  AGWRKRO          NUMERIC         8         657                4.0
         number of other nonmarried males between 10 and 60 in hh
   56  AREA_B_F_F       NUMERIC         8         441                8.3
         area of borrowed fadama land left fallow this season
   57  AREA_B_F_L       NUMERIC         8         449                8.3
         area of borrowed fadama land let to others this season
   55  AREA_B_F_U       NUMERIC         8         433                8.3
         area of borrowed fadama land used this season
   53  AREA_B_G_F       NUMERIC         8         417                8.3
         area of borrowed gona land left fallow this season
   54  AREA_B_G_L       NUMERIC         8         425                8.3
         area of borrowed gona land let out to others this season
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52	AREA_B_G_U	NUMERIC	8	409	8.3
	area of borrowed gona land used this season				
50	AREA_O_F_F	NUMERIC	8	393	8.3
	area of owned fadama land left fallow this season				
51	AREA_O_F_L	NUMERIC	8	401	8.3
	area of owned fadama land let out to others this season				
49	AREA_O_F_U	NUMERIC	8	385	8.3
	area of owned fadama land used this season				
47	AREA_O_G_F	NUMERIC	8	369	8.3
	area of owned gona land left fallow this season				
48	AREA_O_G_L	NUMERIC	8	377	8.3
	area of owned gona land let out to others this season				
46	AREA_O_G_U	NUMERIC	8	361	8.3
	area of owned gona land used this season				
70	ASSETVAL	NUMERIC	8	553	9.2
	value of household assets (excluding kayan ado) at round1				
9	AV_DIST	NUMERIC	8	65	4.0
	average distance of meeting places (in klm) from home				
26	BADPROBS	NUMERIC	8	201	2.0
	1 if other party experienced severe, unexpected problem				
36	CASH1	NUMERIC	8	281	9.2
	value of cash holdings in round1				
42	CATTLE2	NUMERIC	8	329	9.2
	value of cattle owned in round2				
39	CATTLE4	NUMERIC	8	305	9.2
	value of cattle owned in round4				
20	COLLATERAL	NUMERIC	8	153	2.0
	1 if collateral has been pledged by borrower				
31	COLLAT_DEF	NUMERIC	8	241	2.0
	1 if any collateral has been defaulted				
14	CVALUE	NUMERIC	8	105	9.2
	value of collateral pledged				
13	DVALUE	NUMERIC	8	97	9.2
	value of any dashes made to get loan				
86	FEMK	NUMERIC	8	681	4.0
	number of daughters under 10 in hh				
87	FEMO	NUMERIC	8	689	4.0
	number of other females under 10 in hh				
84	FEMWRKRK	NUMERIC	8	665	4.0
	number of daughters between 10 and 60 in hh				
85	FEMWRKRO	NUMERIC	8	673	4.0
	number of other females between 10 and 60 in hh				
19	FIXTERM	NUMERIC	8	145	2.0
	1 if explicit repayment amount was set				
30	FUTUREHELP	NUMERIC	8	233	2.0
	1 if future credit in same direction still possible				
95	GANDU	NUMERIC	8	753	4.0
	0-no gandu;1-with father;2-with brother;3-with son				
35	GRAIN1	NUMERIC	8	273	9.2
	value of grain stocks in round1				
34	GRAIN5	NUMERIC	8	265	9.2
	value of grain stocks in round5				
37	GRAIN8	NUMERIC	8	289	9.2
	value of grain stocks in round8				
94	HERELONG	NUMERIC	8	745	4.0
	number of generations (up to 4) hhh family has been in village				
15	HHNUM	NUMERIC	8	113	4.0
	1xx if gangara, 2xx if madobi,3xx if marwa,4xx if yakasai				

24	INCREDIT	NUMERIC	8	185	2.0
	1 if borrower and lender have a history of credit deals				
23	INFAMILY	NUMERIC	8	177	2.0
	1 if borrower and lender are relatives				
25	INGIFTS	NUMERIC	8	193	2.0
	1 if borrower and lender have a history of exchanging gifts				
10	INTEREST	NUMERIC	8	73	9.2
	% increase in promised payment over totalvalue				
21	INVILLAGE	NUMERIC	8	161	2.0
	1 if borrower and lender live in same village				
77	ISLAM	NUMERIC	8	609	4.0
	number of izu of hhh				
93	KIDSFAR	NUMERIC	8	737	4.0
	number of children out of village				
92	KIDSNEAR	NUMERIC	8	729	4.0
	number of children out of hh but in village				
28	KNOWS	NUMERIC	8	217	2.0
	1 if hh has knowledge of other partys shocks				
27	LATEPROBS	NUMERIC	8	209	2.0
	1 if other party problem began after the loan				
5	LOANDAY	NUMERIC	8	33	7.0
	the date of the loan,# of days after 1/1/88				
32	LOANNUMBER	NUMERIC	8	249	3.0
	numbered for each round				
4	LOANVAL	NUMERIC	8	25	9.2
	the value of the loan in Naira net of dashes				
17	LOAN_IN	NUMERIC	8	129	2.0
	1 if initial loan is to hh, 0 if out from hh				
88	MALEK	NUMERIC	8	697	4.0
	number of sons under 10 in hh				
89	MALEO	NUMERIC	8	705	4.0
	number of other males under 10 in hh				
80	MARRIEDK	NUMERIC	8	633	4.0
	number of married sons in hh				
81	MARRIEDO	NUMERIC	8	641	4.0
	number of other married men in hh				
78	MIGEARN	NUMERIC	8	617	9.2
	earnings during migration last year				
18	MORETOCOME	NUMERIC	8	137	2.0
	1 there is an explicit promise to pay more				
43	NOMA2	NUMERIC	8	337	9.2
	value of shanun noma owned in round2				
40	NOMA4	NUMERIC	8	313	9.2
	value of shanun noma owned in round4				
8	NOMEETINGS	NUMERIC	8	57	3.0
	# of meetings before loan was made				
68	NUM_B_F_F	NUMERIC	8	537	4.0
	number of borrowed fadama farms left fallow this season				
69	NUM_B_F_L	NUMERIC	8	545	4.0
	number of borrowed fadama farms let to others this season				
67	NUM_B_F_U	NUMERIC	8	529	4.0
	number of borrowed fadama farms used this season				
65	NUM_B_G_F	NUMERIC	8	513	4.0
	number of borrowed gona farms left fallow this season				
66	NUM_B_G_L	NUMERIC	8	521	4.0
	number of borrowed gona farms let to others this season				
64	NUM_B_G_U	NUMERIC	8	505	4.0
	number of borrowed gona farms used this season				

62	NUM_O_F_F	NUMERIC	8	489	4.0
	number of owned fadama farms left fallow this season				
63	NUM_O_F_L	NUMERIC	8	497	4.0
	number of owned fadama farms let to others this season				
61	NUM_O_F_U	NUMERIC	8	481	4.0
	number of owned fadama farms used this season				
59	NUM_O_G_F	NUMERIC	8	465	4.0
	number of owned gona farms left fallow this season				
60	NUM_O_G_L	NUMERIC	8	473	4.0
	number of owned gona farms let to others this season				
58	NUM_O_G_U	NUMERIC	8	457	4.0
	number of owned gona farms used this season				
1	OLDLOAN	NUMERIC	8	1	4.0
	loannumber of original loan before splits				
90	OLDMEN	NUMERIC	8	713	4.0
	number of men over 60 in hh				
2	OLDROUND	NUMERIC	8	9	4.0
	round as originally recorded before splits				
91	OLDWOMEN	NUMERIC	8	721	4.0
	number of women over 60 in hh				
38	ONFARM8	NUMERIC	8	297	9.2
	value of crops still on farm during round8				
44	OTHERLIVE2	NUMERIC	8	345	9.2
	value of small livestock owned in round2				
41	OTHERLIVE4	NUMERIC	8	321	9.2
	value of small livestock owned in round4				
76	PRIMARY	NUMERIC	8	601	4.0
	number of years of western schooling completed by hhh				
12	PVALUE	NUMERIC	8	89	9.2
	value of payments promised at disbursement of loan				
22	REGULATED	NUMERIC	8	169	2.0
	1 if loan from N.T.C. or a bank				
7	REPDAY	NUMERIC	8	49	7.0
	date of repayment,# of days after 1/1/88				
6	REPVAL	NUMERIC	8	41	9.2
	value of repayments made				
16	RESPON_SEX	NUMERIC	8	121	2.0
	1 if respondant is male, 0 if female				
73	ROOMSG	NUMERIC	8	577	3.0
	number of rooms with grass roofs				
72	ROOMSM	NUMERIC	8	569	3.0
	number of rooms with mud roofs				
71	ROOMSZ	NUMERIC	8	561	3.0
	number of rooms roofing sheets				
33	ROUND	NUMERIC	8	257	3.0
	round during which loan first mentionned				
29	SEX	NUMERIC	8	225	2.0
	1 if other party is male, 0 if female				
96	SKILLS	NUMERIC	8	761	4.0
	number of hh menbers with special skills				
3	SPLIT	NUMERIC	8	17	3.0
	1 if this loan split from more complex original loan				
11	TOTALVALUE	NUMERIC	8	81	9.2
	value of initial loan				
45	TRADESTK4	NUMERIC	8	353	9.2
	value of goods owned for trading in round4				
74	WATER	NUMERIC	8	585	3.0
	0-river or public well;1-mixture;2-own well only				

79	WIVES	NUMERIC	8	625	4.0

number of wives in household

Contents of BASS dataset: summary.txt
Dataset label:
Created: 1-20-96 15:25
Number of variables: 78
Number of observations: 198
Data Bytes per observation: 624
File space (bytes) used by header: 4770
File space (bytes) used by observations: 123552
Total size (bytes) of dataset: 128322
Dataset type: DATA

List of Variables (Positional Order)

#	Variable Name	Type	Length	Position	Dimension	Format	Label, if any
1	HHNUM	NUMERIC	8	1		4.0	
2	GRAIN5	NUMERIC	8	9		9.2	value of grain stocks in round5
3	GRAIN1	NUMERIC	8	17		9.2	value of grain stocks in round1
4	CASH1	NUMERIC	8	25		9.2	value of cash holdings in round1
5	GRAIN8	NUMERIC	8	33		9.2	value of grain stocks in round8
6	ONFARM8	NUMERIC	8	41		9.2	value of crops still on farm during round8
7	CATTLE4	NUMERIC	8	49		9.2	value of cattle owned in round4
8	NOMA4	NUMERIC	8	57		9.2	value of shanun noma owned in round4
9	OTHERLIVE4	NUMERIC	8	65		9.2	value of small livestock owned in round4
10	CATTLE2	NUMERIC	8	73		9.2	value of cattle owned in round2
11	NOMA2	NUMERIC	8	81		9.2	value of shanun noma owned in round2
12	OTHERLIVE2	NUMERIC	8	89		9.2	value of small livestock owned in round2
13	TRADESTK4	NUMERIC	8	97		9.2	value of goods owned for trading in round4
14	AREA_O_G_U	NUMERIC	8	105		8.3	area of owned gona land used this season
15	AREA_O_G_F	NUMERIC	8	113		8.3	area of owned gona land left fallow this season
16	AREA_O_G_L	NUMERIC	8	121		8.3	area of owned gona land let out to others this season
17	AREA_O_F_U	NUMERIC	8	129		8.3	area of owned fadama land used this season
18	AREA_O_F_F	NUMERIC	8	137		8.3	area of owned fadama land left fallow this season
19	AREA_O_F_L	NUMERIC	8	145		8.3	area of owned fadama land let out to others this season
20	AREA_B_G_U	NUMERIC	8	153		8.3	area of borrowed gona land used this season
21	AREA_B_G_F	NUMERIC	8	161		8.3	area of borrowed gona land left fallow this season
22	AREA_B_G_L	NUMERIC	8	169		8.3	

area of borrowed gona land let out to others this season

23	AREA_B_F_U	NUMERIC	8	177	8.3

area of borrowed fadama land used this season

24	AREA_B_F_F	NUMERIC	8	185	8.3

area of borrowed fadama land left fallow this season

25	AREA_B_F_L	NUMERIC	8	193	8.3

area of borrowed fadama land let to others this season

26	NUM_O_G_U	NUMERIC	8	201	4.0

number of owned gona farms used this season

27	NUM_O_G_F	NUMERIC	8	209	4.0

number of owned gona farms left fallow this season

28	NUM_O_G_L	NUMERIC	8	217	4.0

number of owned gona farms let to others this season

29	NUM_O_F_U	NUMERIC	8	225	4.0

number of owned fadama farms used this season

30	NUM_O_F_F	NUMERIC	8	233	4.0

number of owned fadama farms left fallow this season

31	NUM_O_F_L	NUMERIC	8	241	4.0

number of owned fadama farms let to others this season

32	NUM_B_G_U	NUMERIC	8	249	4.0

number of borrowed gona farms used this season

33	NUM_B_G_F	NUMERIC	8	257	4.0

number of borrowed gona farms left fallow this season

34	NUM_B_G_L	NUMERIC	8	265	4.0

number of borrowed gona farms let to others this season

35	NUM_B_F_U	NUMERIC	8	273	4.0

number of borrowed fadama farms used this season

36	NUM_B_F_F	NUMERIC	8	281	4.0

number of borrowed fadama farms left fallow this season

37	NUM_B_F_L	NUMERIC	8	289	4.0

number of borrowed fadama farms let to others this season

38	ASSETVAL	NUMERIC	8	297	9.2

value of household assets (excluding kayan ado) at round1

39	ROOMSZ	NUMERIC	8	305	3.0

number of rooms roofing sheets

40	ROOMSM	NUMERIC	8	313	3.0

number of rooms with mud roofs

41	ROOMSG	NUMERIC	8	321	3.0

number of rooms with grass roofs

42	WATER	NUMERIC	8	329	3.0

0-river or public well;1-mixture;2-own well only

43	AGE	NUMERIC	8	337	4.0

age in years of hh head

44	PRIMARY	NUMERIC	8	345	4.0

number of years of western schooling completed by hhh

45	ISLAM	NUMERIC	8	353	4.0

number of izu of hhh

46	MIGEARN	NUMERIC	8	361	9.2

earnings during migration last year

47	WIVES	NUMERIC	8	369	4.0

number of wives in household

48	MARRIEDK	NUMERIC	8	377	4.0

number of married sons in hh

49	MARRIEDO	NUMERIC	8	385	4.0

number of other married men in hh

50	AGWRKRK	NUMERIC	8	393	4.0

number of nonmarried sons between 10 and 60 in hh

51	AGWRKRO	NUMERIC	8	401	4.0

number of other nonmarried males between 10 and 60 in hh

52	FEMWRKRK	NUMERIC	8	409	4.0
	number of daughters between 10 and 60 in hh				
53	FEMWRKRO	NUMERIC	8	417	4.0
	number of other females between 10 and 60 in hh				
54	FEMK	NUMERIC	8	425	4.0
	number of daughters under 10 in hh				
55	FEMO	NUMERIC	8	433	4.0
	number of other females under 10 in hh				
56	MALEK	NUMERIC	8	441	4.0
	number of sons under 10 in hh				
57	MALEO	NUMERIC	8	449	4.0
	number of other males under 10 in hh				
58	OLDMEN	NUMERIC	8	457	4.0
	number of men over 60 in hh				
59	OLDWOMEN	NUMERIC	8	465	4.0
	number of women over 60 in hh				
60	KIDSNEAR	NUMERIC	8	473	4.0
	number of children out of hh but in village				
61	KIDSFAR	NUMERIC	8	481	4.0
	number of children out of village				
62	HERELONG	NUMERIC	8	489	4.0
	number of generations (up to 4) hhh family has been in village				
63	GANDU	NUMERIC	8	497	4.0
	0-no gandu;1-with father;2-with brother;3-with son				
64	SKILLS	NUMERIC	8	505	4.0
	number of hh menbers with special skills				
65	WT_FULANI	NUMERIC	8	513	
66	GRAING88	NUMERIC	8	521	9.2
	value of gona output in 88				
67	GRAINF88	NUMERIC	8	529	9.2
	value of fadama output in 88				
68	COSTG88	NUMERIC	8	537	9.2
	cost of gona production in 88				
69	COSTF88	NUMERIC	8	545	9.2
	cost of fadama production in 88				
70	GRAING87	NUMERIC	8	553	9.2
	value of gona output in 87				
71	GRAINF87	NUMERIC	8	561	9.2
	value of fadama output in 87				
72	COSTG87	NUMERIC	8	569	9.2
	cost of gona production in 87				
73	COSTF87	NUMERIC	8	577	9.2
	value of fadama production in 87				
74	GPROB	NUMERIC	8	585	5.1
	number of self-reported problems on gona fields				
75	FPROB	NUMERIC	8	593	5.1
	number of self-reported problems on fadama fields				
76	NGONA	NUMERIC	8	601	5.1
	number of gona fields on which problem data were collected				
77	NFADAMA	NUMERIC	8	609	5.1
	number of fadama fields on which problem data were collected				
78	OLDWEALTH	NUMERIC	8	617	9.2
	value of livestock, grain, trade stocks at last marriage				

#	Variable Name	Type	Length	Position	Dimension	Format
	Label, if any					
43	AGE	NUMERIC	8	337		4.0
	age in years of hh head					
50	AGWRKRK	NUMERIC	8	393		4.0
	number of nonmarried sons between 10 and 60 in hh					
51	AGWRKRO	NUMERIC	8	401		4.0
	number of other nonmarried males between 10 and 60 in hh					
24	AREA_B_F_F	NUMERIC	8	185		8.3
	area of borrowed fadama land left fallow this season					
25	AREA_B_F_L	NUMERIC	8	193		8.3
	area of borrowed fadama land let to others this season					
23	AREA_B_F_U	NUMERIC	8	177		8.3
	area of borrowed fadama land used this season					
21	AREA_B_G_F	NUMERIC	8	161		8.3
	area of borrowed gona land left fallow this season					
22	AREA_B_G_L	NUMERIC	8	169		8.3
	area of borrowed gona land let out to others this season					
20	AREA_B_G_U	NUMERIC	8	153		8.3
	area of borrowed gona land used this season					
18	AREA_O_F_F	NUMERIC	8	137		8.3
	area of owned fadama land left fallow this season					
19	AREA_O_F_L	NUMERIC	8	145		8.3
	area of owned fadama land let out to others this season					
17	AREA_O_F_U	NUMERIC	8	129		8.3
	area of owned fadama land used this season					
15	AREA_O_G_F	NUMERIC	8	113		8.3
	area of owned gona land left fallow this season					
16	AREA_O_G_L	NUMERIC	8	121		8.3
	area of owned gona land let out to others this season					
14	AREA_O_G_U	NUMERIC	8	105		8.3
	area of owned gona land used this season					
38	ASSETVAL	NUMERIC	8	297		9.2
	value of household assets (excluding kayan ado) at round1					
4	CASH1	NUMERIC	8	25		9.2
	value of cash holdings in round1					
10	CATTLE2	NUMERIC	8	73		9.2
	value of cattle owned in round2					
7	CATTLE4	NUMERIC	8	49		9.2
	value of cattle owned in round4					
73	COSTF87	NUMERIC	8	577		9.2
	value of fadama production in 87					
69	COSTF88	NUMERIC	8	545		9.2
	cost of fadama production in 88					
72	COSTG87	NUMERIC	8	569		9.2
	cost of gona production in 87					
68	COSTG88	NUMERIC	8	537		9.2
	cost of gona production in 88					
54	FEMK	NUMERIC	8	425		4.0
	number of daughters under 10 in hh					
55	FEMO	NUMERIC	8	433		4.0
	number of other females under 10 in hh					
52	FEMWRKRK	NUMERIC	8	409		4.0
	number of daughters between 10 and 60 in hh					
53	FEMWRKRO	NUMERIC	8	417		4.0
	number of other females between 10 and 60 in hh					

75	FPROB	NUMERIC	8	593	5.1
	number of self-reported problems on fadama fields				
63	GANDU	NUMERIC	8	497	4.0
	0-no gandu;1-with father;2-with brother;3-with son				
74	GPROB	NUMERIC	8	585	5.1
	number of self-reported problems on gona fields				
3	GRAIN1	NUMERIC	8	17	9.2
	value of grain stocks in round1				
2	GRAIN5	NUMERIC	8	9	9.2
	value of grain stocks in round5				
5	GRAIN8	NUMERIC	8	33	9.2
	value of grain stocks in round8				
71	GRAINF87	NUMERIC	8	561	9.2
	value of fadama output in 87				
67	GRAINF88	NUMERIC	8	529	9.2
	value of fadama output in 88				
70	GRAING87	NUMERIC	8	553	9.2
	value of gona output in 87				
66	GRAING88	NUMERIC	8	521	9.2
	value of gona output in 88				
62	HERELONG	NUMERIC	8	489	4.0
	number of generations (up to 4) hhh family has been in village				
1	HHNUM	NUMERIC	8	1	4.0
45	ISLAM	NUMERIC	8	353	4.0
	number of izu of hhh				
61	KIDSFAR	NUMERIC	8	481	4.0
	number of children out of village				
60	KIDSNEAR	NUMERIC	8	473	4.0
	number of children out of hh but in village				
56	MALEK	NUMERIC	8	441	4.0
	number of sons under 10 in hh				
57	MALEO	NUMERIC	8	449	4.0
	number of other males under 10 in hh				
48	MARRIEDK	NUMERIC	8	377	4.0
	number of married sons in hh				
49	MARRIEDO	NUMERIC	8	385	4.0
	number of other married men in hh				
46	MIGEARN	NUMERIC	8	361	9.2
	earnings during migration last year				
77	NFADAMA	NUMERIC	8	609	5.1
	number of fadama fields on which problem data were collected				
76	NGONA	NUMERIC	8	601	5.1
	number of gona fields on which problem data were collected				
11	NOMA2	NUMERIC	8	81	9.2
	value of shanun noma owned in round2				
8	NOMA4	NUMERIC	8	57	9.2
	value of shanun noma owned in round4				
36	NUM_B_F_F	NUMERIC	8	281	4.0
	number of borrowed fadama farms left fallow this season				
37	NUM_B_F_L	NUMERIC	8	289	4.0
	number of borrowed fadama farms let to others this season				
35	NUM_B_F_U	NUMERIC	8	273	4.0
	number of borrowed fadama farms used this season				
33	NUM_B_G_F	NUMERIC	8	257	4.0
	number of borrowed gona farms left fallow this season				
34	NUM_B_G_L	NUMERIC	8	265	4.0
	number of borrowed gona farms let to others this season				
32	NUM_B_G_U	NUMERIC	8	249	4.0

number of borrowed gona farms used this season

30	NUM_O_F_F	NUMERIC	8	233	4.0

number of owned fadama farms left fallow this season

31	NUM_O_F_L	NUMERIC	8	241	4.0

number of owned fadama farms let to others this season

29	NUM_O_F_U	NUMERIC	8	225	4.0

number of owned fadama farms used this season

27	NUM_O_G_F	NUMERIC	8	209	4.0

number of owned gona farms left fallow this season

28	NUM_O_G_L	NUMERIC	8	217	4.0

number of owned gona farms let to others this season

26	NUM_O_G_U	NUMERIC	8	201	4.0

number of owned gona farms used this season

58	OLDMEN	NUMERIC	8	457	4.0

number of men over 60 in hh

78	OLDWEALTH	NUMERIC	8	617	9.2

value of livestock, grain, trade stocks at last marriage

59	OLDWOMEN	NUMERIC	8	465	4.0

number of women over 60 in hh

6	ONFARM8	NUMERIC	8	41	9.2

value of crops still on farm during round8

12	OTHERLIVE2	NUMERIC	8	89	9.2

value of small livestock owned in round2

9	OTHERLIVE4	NUMERIC	8	65	9.2

value of small livestock owned in round4

44	PRIMARY	NUMERIC	8	345	4.0

number of years of western schooling completed by hhh

41	ROOMSG	NUMERIC	8	321	3.0

number of rooms with grass roofs

40	ROOMSM	NUMERIC	8	313	3.0

number of rooms with mud roofs

39	ROOMSZ	NUMERIC	8	305	3.0

number of rooms roofing sheets

64	SKILLS	NUMERIC	8	505	4.0

number of hh menbers with special skills

13	TRADESTK4	NUMERIC	8	97	9.2

value of goods owned for trading in round4

42	WATER	NUMERIC	8	329	3.0

0-river or public well;1-mixture;2-own well only

47	WIVES	NUMERIC	8	369	4.0

number of wives in household

65	WT_FULANI	NUMERIC	8	513	

Description of the variables included in the data file SUMMARY.TXT:

2. GRAIN5 - Naira value of grain stocks held in household during round 5 of the survey.

3. GRAIN1 - Similarly for round 1.

4. CASH1 - Currency held in household during round 1 of the survey. (This number is probably the least reliable of all the data collected during the survey).

5. GRAIN8 - Similar to (2) and (3) but for round 8.

6. ONFARM8 - Estimated value of all crops still standing on the household's fields during round 8 of the survey.

7. CATTLE4 - The value of all cattle (other than those used for plowing) owned by members of the household during round 4. This figure includes cattle that are in the care of herders outside the household. There is likely to be substantial undercounting of the number of owned cattle in the care of herders outside the household.

8. NOMA4 - The value of all shanun noma owned during round 4. Shanun noma are bullocks used for plowing.

9. OTHERLIVE4 - Other livestock include goats, sheep, chickens, ducks, rabbits, etc…

10, 11, 12 - Similar figures for animals owned during round 2.

13. TRADESTK4 - Value during round 4 of inventory of goods owned by members of the household for trading.

14 - 25. AREA_?_?_? - These fields contain the area in hectares of various plots owned by members of the household at the start of the survey year. The first _?_ differentiates between land owned by someone in the household ('O') and land that has been "borrowed" by someone in the household from someone outside the household ('B'). The tenurial arrangements included in this category are: 1. *aro*, in which the land is received in exchange for a token payment (this accounts for the overwhelming majority of plots categorized as 'B'); or 2. *haya*, in which the land is rented. The second _?_ differentiates between upland ('G' for *gona*) and lowland ('F' for *fadama*) plots. The third _? differentiates between plots that were farmed by the sample household during the survey year ('U' for used), plots that were left fallow during the survey year ('F') and plots the were let out to someone outside the household during the survey year ('L'). The contracts under which plots were let out were either *aro* or *haya*. Once again, *aro* was the predominant mode.

26 - 37. NUM_?_?_? - These are similar to 46-57, except that they contain the number of plots which fall into each category for each household, rather than their area.

38. ASSETVAL - The value of miscellaneous household assets at the start of the survey year. This includes farming equipment, tools used for non-farming activities, furniture, bicycles (in one instance a car), etc… It does not include *kayan ado*, the decorative plates, bowls, and jewelry of the wives of the household.

39. ROOMSZ - The number of rooms in the household compound which are roofed with metal roofing sheets at the start of the survey.

40. ROOMSM - Number of rooms in the household compound roofed with beams/adobe.

41. ROOMSG - Number of rooms in the household compound with thatched roofs.

42. WATER - The source of the household's drinking water at the start of the survey.

44. PRIMARY - Number of years of western schooling completed by the head of the household.

45. ISLAM - Number of izu of the koran known by the household head.

46. MIGEARN - Net earnings by the household head if he migrated for work during the previous year.

47. WIVES - Number of wives of the household head who are members of the household.

48. MARRIEDK - Number of married sons of household head who are members of the household.

49. MARRIEDO - Number of other married men who are members of the household.

50. AGWRKK - Number of non-married sons of household head aged 10-60 who are members of the household.

51. AGWRKRO - Number of other non-married males aged 10-60 who are members of the household.

52. FEMWRKRK - Number of (non-married) daughters aged 10-60 who are members of the household.

53. FEMWRKRO - Number of other non-married females aged 10-60 who are members of the household.

54. FEMK - Number of daughters under 10 who are members of the household.

55. FEMO - Number of other females under 10 who are members of the household.

56. MALEK - Number of sons under 10 who are members of the household.

57. MALEO - Number of other males under 10 who are members of the household.

58. OLDMEN - Number of men over 60 who are members of the household.

59. OLDWOMEN - Number of women over 60 who are members of the household.

60. KIDSNEAR - Number of children who live in the village but who are not members of the household.

61. KIDSFAR - Number of children who are not members of the household and who live outside the village.

62. HERELONG - Number of generations (up to 4) since the first ancestor of the household head moved to this village.

63. GANDU - 0 if the household head does not acknowledge being part of a *gandu* arrangement. 1, 2, 3 differentiate between different types of *gandu*. See Hill (1972) for a discussion of *gandu*.

64. SKILLS - The number of members of the household with some special skill. Examples of such skills include tailoring, weaving, carpentry, religious teaching, driving.

65. WT_FULANI - Equal to zero if the household considers itself fulani.

The following 8 variables must be used with caution. Each is based on plot level data collected after the completion of the relevant crop season. They are based on long recall and therefore are unreliable.

66. GRAING88 - Reported value of output on all upland farms used by members of the household in the 1988 crop year, valued at 1988 prices.

67. GRAINF88 - Reported value of output on all lowland farms used by members of the household in the 1988 crop year, valued at 1988 prices.

68. COSTG88 - Estimated cost of producing on all upland farms used by members of the household in the 1988 crop year, valued at 1988 prices. This includes all purchased inputs and the value of family labor time.

69. COSTF88 - Estimated cost of producing on all lowland farms used by members of the household in the 1988 crop year, valued at 1988 prices. This includes all purchased inputs and the value of family labor time.

70. GRAING87 - Reported value of output on all upland farms used by members of the household in the 1987 crop year,

valued at 1987 prices.

71. GRAINF87 - Reported value of output on all lowland farms used by members of the household in the 1987 crop year, valued at 1987 prices.

72. COSTG87 - Estimated cost of producing on all upland farms used by members of the household in the 1987 crop year, valued at 1987 prices. This includes all purchased inputs and the value of family labor time.

73. COSTF87 - Estimated cost of producing on all lowland farms used by members of the household in the 1987 crop year, valued at 1987 prices. This includes all purchased inputs and the value of family labor time.

74. GPROB - Number of self-reported adverse events on uplands fields being farmed by a member of the household during the survey year. This is a simple count of the number of such events. The most common such event during the survey year was flooding. Other events included wind lodging and animal invasion.

75. FPROB - A similar count of such events on lowland fields.

76. NGONA - The number of upland fields on which 'problem' data were collected.

77. NFADAMA - The number of lowlands fields on which 'problem' data were collected.

78. OLDWEALTH - The value of livestock, grain, and trading stocks which the household head says he owned at the time of his most recent marriage. These are valued in 1988 Naira.

Description of the variables included in the data file SUMCRED.TXT:

1. OLDLOAN - This is the loan number of the original loan before it was broken up into subloans. The original questionnaires recorded all loan transactions between a given pair of individuals. For instance, a sequence of transactions in which a loan was made, paid back, and then another made would have been recorded on a single record. In this data base, such transactions have been split into their component parts. In order to permit the reconstruction of the original sequence of transactions, this field contains the loan number of the original transaction.

2. OLDROUND - The round number in which the original sequence of transactions was first recorded.

4. LOANVAL - This is in current Naira. Any items which were transferred in kind are valued at their current market price (only rarely were non-cash transfers made). If a bribe was needed to get the loan, it is deducted from the value here (only relevant to the few loans from the formal sector).

6. REPVAL - In current Naira. In kind items are valued as in (4).

8. NOMEETINGS - Records the number of times the two parties met to discuss the loan before it was transacted.

9. AV_DIST - The mean distance (in kilometers) between the home of the respondent and the location of the meetings recorded in (8).

10. INTEREST - Value of explicit interest to be paid on loan, if a promise is acknowledged at the time of the initial interview.

11. TOTALVALUE - Same as (4), except the conversions of in-kind items are done by the respondent at the time of the interview, rather than by using market price data.

12. PVALUE - Value of repayments to be made, if such payments are explicitly acknowledged at the time of the initial interview.

13. DVALUE - Value of any bribe (dash) made in order to get the loan.

14. CVALUE - Value of any collateral that is pledged in exchange for the loan.

15. HHNUM - of respondent.

17. LOAN_IN - Dummy variable. 1 if sample household was the borrower, 0 if sample household is the lender.

18. MORETOCOME - Dummy variable. 1 if at the end of the survey period the borrower still has an obligation to repay more to the lender.

19. FIXTERM - Dummy variable. 1 if explicit repayment terms had been set at the time of the initial interview.

22. REGULATED - Dummy variable. 1 if the lender was the Nigerian Tobacco Company or a bank.

23. INFAMILY - "Relative" is as defined by the respondent. Corresponds to dan'uwa in Hausa.

26. BADPROBS - Respondents were asked about events on their transaction partner's farm, and about "unusual" and "unexpected" events in their transaction partner's households. This dummy variable is 1 if there was an unexpected adverse event on the transaction partner's farm, or if a household member became sick or injured. The most common adverse event on transaction partners' farms was flooding.

27. LATEPROBS - Dummy variable. 1 if the problem referred to in (26) occurred after the loan was first extended.

28. KNOWS - Dummy variable. 1 if the respondent did <u>not</u> respond "I don't know" to the questions which form the basis of (26) and (27).

30. FUTUREHELP - This is the response to a question asked at the close of the survey. Respondents who were borrowers were asked if they would ever be able to borrow from this particular lender again. Respondents who were lenders were asked if they would ever be willing to lend to this particular borrower again. This variable is 1 when the respondent said that future loans (in the same direction) between the two parties could occur.

31. COLLAT_DEF - Dummy variable. 1 if at the end of the survey any collateral has been transferred to the lender as a result of default.

34. GRAIN5 - Naira value of grain stocks held in household during round 5 of the survey.

36. CASH1 - Currency held in household during round 1 of the survey. (This number is probably the least reliable of all the data collected during the survey).

38. ONFARM8 - Estimated value of all crops still standing on the household's fields during round 8 of the survey.

39. CATTLE4 - The value of all cattle (other than those used for plowing) owned by members of the household during round 4. This figure includes cattle that are in the care of herders outside the household. There is likely to be substantial undercounting of the number of owned cattle in the care of herders outside the household.

40. NOMA4 - The value of all shanun noma owned during round 4. Shanun noma are bullocks used for plowing.

41. OTHERLIVE4 - Other livestock include goats, sheep, chickens, ducks, rabbits, etc…

42, 43, 44 - Similar figures for animals owned during round 2.

45. TRADESTK4 - Value during round 4 of inventory of goods owned by members of the household for trading.

46 - 57. AREA_?_?_? - These fields contain the area in hectares of various plots owned by members of the household at the start of the survey year. The first _?_ differentiates between land owned by someone in the household ('O') and

land that has been "borrowed" by someone in the household from someone outside the household ('B'). The tenurial arrangements included in this category are: 1. *aro*, in which the land is received in exchange for a token payment (this accounts for the overwhelming majority of plots categorized as 'B'); or 2. *haya*, in which the land is rented. The second _?_ differentiates between upland ('G' for *gona*) and lowland ('F' for *fadama*) plots. The third _? differentiates between plots that were farmed by the sample household during the survey year ('U' for used), plots that were left fallow during the survey year ('F') and plots the were let out to someone outside the household during the survey year ('L'). The contracts under which plots were let out were either *aro* or *haya*. Once again, *aro* was the predominant mode.

58 - 69. NUM_?_?_? - These are similar to 46-57, except that they contain the number of plots which fall into each category for each household, rather than their area.

70. ASSETVAL - The value of miscellaneous household assets at the start of the survey year. This includes farming equipment, tools used for non-farming activities, furniture, bicycles (in one instance a car), etc… It does not include *kayan ado*, the decorative plates, bowls, and jewelry of the wives of the household.

71. ROOMSZ - The number of rooms in the household compound which are roofed with metal roofing sheets at the start of the survey.

72. ROOMSM - Number of rooms in the household compound roofed with beams/adobe.

73. ROOMSG - Number of rooms in the household compound with thatched roofs.

74. WATER - The source of the household's drinking water at the start of the survey.

76. PRIMARY - Number of years of western schooling completed by the head of the household at the start of the survey.

77. ISLAM - Number of izu of the koran known by the household head.

78. MIGEARN - Net earnings by the household head if he migrated for work during the previous year.

79. WIVES - Number of wives of the household head who are members of the household (see discussion in attached description of survey methods for definition of household).

80. MARRIEDK - Number of married sons of household head who are members of the household.

81. MARRIEDO - Number of other married men who are members of the household.

82. AGWRKK - Number of non-married sons of household head aged 10-60 who are members of the household.

83. AGWRKRO - Number of other non-married males aged 10-60 who are members of the household.

84. FEMWRKRK - Number of (non-married) daughters aged 10-60 who are members of the household.

85. FEMWRKRO - Number of other non-married females aged 10-60 who are members of the household.

86. FEMK - Number of daughters under 10 who are members of the household.

87. FEMO - Number of other females under 10 who are members of the household.

88. MALEK - Number of sons under 10 who are members of the household.

89. MALEO - Number of other males under 10 who are members of the household.

90. OLDMEN - Number of men over 60 who are members of the household.

91. OLDWOMEN - Number of women over 60 who are members of the household.

92. KIDSNEAR - Number of children who live in the village but who are not members of the household.

93. KIDSFAR - Number of children who are not members of the household and who live outside the village.

94. HERELONG - Number of generations (up to 4) since the first ancestor of the household head moved to this village.

95. GANDU - 0 if the household head does not acknowledge being part of a *gandu* arrangement. 1, 2, 3 differentiate between different types of *gandu*. See Hill (1972) for a discussion of *gandu*.

96. SKILLS - The number of members of the household with some special skill. Examples of such skills include tailoring, weaving, carpentry, religious teaching, driving.

THE FIELD SETTING AND SURVEY METHODS

A. The Setting.

From February 1988 to February 1989 I undertook a survey designed to extend contemporary research on economic behavior in the absence of perfect information and complete markets to the analysis of rural credit in Africa. The survey was conducted in four villages near the city of Zaria in Kaduna State of northern Nigeria. The Zaria region is a part of Hausaland, an ethnically diverse region spanning southern Niger and northern Nigeria which contains 15 to 20 million Hausa-speakers.[1] Despite the ethnic diversity of the area (which is about the size of a united Germany) the "underlying uniformity" of Hausaland has been noted by outside observers and is an important referent for many residents of the region.[2] This "uniformity" is expressed by broad cultural similarities, a common religion, extensive economic interaction and historical political unity under the 19th century Sokoto Caliphate, as well as by a common language.[3]

The vast majority of the population of Hausaland is Muslim; a fact which may have particular importance for this study of rural credit relations. Islamic law (*shari'a*) prohibits the use of fixed interest charges on loans. Investment income is prohibited if the investor does not share in the risks of the enterprise. Hence an equity investment is legal, while lending with a fixed interest rate is not. Fixed repayment periods are also prohibited: 'And if the debtor is in difficulty, then [there should be] postponement to a time of ease' (Koran 2:280).

The four randomly chosen villages included in the survey are Gangara, Madobi, Marwa and Yakasai, all within sixty kilometers of downtown Zaria. The old walled city of Zaria has been a political, military and commercial power for hundreds of years.[4] The Emir of Zaria has significant authority over the affairs of the Emirate (which includes the

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[1]There are an additional 10 million or so people around the periphery of this region who speak Hausa as a second language and who share many of the cultural attributes of the population of Hausaland itself.

[2]Forde (1964), cited by Watts (1979, vol. 2, p. 21).

[3]A wealth of detail on the population of Hausaland is available in an extensive literature. Classic ethnographies with strong emphases on economics are available in M.G. Smith (1955) and Hill (1972). Callaway (1987) provides a valuable study of Hausa women. A collection of essential historical essays is contained in A. Smith (1987). Detailed descriptions of the local area near Zaria are available in Mortimore (1970) and Norman, Simmons and Hays (1982).

[4]M.G. Smith (1960) and Abdullahi Smith (1970) provide details on the history of Zaria.

four survey villages) from his palace in the heart of the old city. The central mosque draws a huge crowd for Friday prayers and many of the richest traders of the region reside in the old city. However, over the past century a newer and larger city has grown up outside the ancient walls of Zaria. The commercial heart of Zaria is now Sabon Gari (literally, "new town").

It is in the center of Zaria's Sabon Gari that arrangements are made for transportation to any of the four survey villages. Trucks of varying sizes, from small pickups to tractor-trailers, along with their drivers and laborers to load and unload them, are available for hire. Regular (albeit unscheduled) passenger transportation in the form of mini-vans is also available from Sabon Gari to each of the four survey villages.

Vans leave Sabon Gari along the important Zaria-Jos road several times an hour. Any of these vans will stop at the survey village of Yakasai, a village of 196 households (population 1003) about twenty kilometers from Sabon Gari. The survey village of Marwa is a community of 168 households with an estimated population of 910. To reach Marwa from Zaria, one can exit the van at Yakasai and hire a motorcyclist to travel the final 10 kilometers on a good laterite road recently constructed as part of the rural feeder roads component of the Kaduna State Agricultural Development Project. Alternatively, there is direct van service from Sabon Gari to Marwa and the other villages along this new feeder road several times a day.

The survey village Gangara is a large village of 916 households with an estimated population of 5972. It is on the main Zaria-Sokoto road, sixty kilometers from the middle of Sabon Gari, Zaria. Gangara is linked with the major markets of Funtua, Giwa, Samaru (the site of Ahmadu Bello University) and Sabon Gari by vans which leave every ten to twenty minutes.

Madobi is a small village of 138 households (estimated population 635) located about ten kilometers off of the old Zaria-Kano road.[5] Madobi is more difficult to reach than the other three survey villages. Vans leave Sabon Gari to travel along the old Kano road several times a day. To reach Madobi, one leaves the van at the village of Hunkuyi and walks or hires a motorcycle to travel the remaining 10-12 kilometers to Madobi. The trails which connect Madobi with Hunkuyi are motorable with difficulty during the dry season and all but impassable to four-wheel vehicles during much of the rainy season. Truck transportation is rare; most produce is transported by motorcycle, bicycle or headload.

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[5]Madobi is adjacent to Dan Mahawayi, which was included as the remote village in Norman's (1972) important study.

Madobi includes a small *maguzawa* hamlet, which consists of a number of dispersed homesteads outside of the remains of the wall which surrounds the main town.[6]

When travelling from Zaria to any of the four villages one eventually leaves behind the urban accumulation of buildings, traffic and people to enter into a landscape of flat or gently rolling parkland with scattered trees. The natural savanna woodlands which would surround Zaria have given way in large part to permanently cultivated (or short-fallowed) farmland with isolated stands of trees. Some of the farms along the roads are huge; often these are the absentee holdings of rich Zaria residents. Closer to villages, the plots are irregular and smaller (under one hectare) and laced with footpaths radiating out from the villages. The villages themselves are tightly nucleated clusters of houses, surrounded by scatterings of dispersed homesteads. Each house is surrounded by a wall of some sort. A two to three meter high mud wall is the most common method of achieving privacy. Poorer families make do with fences of sorghum stalks; richer families plaster the mud with cement. Access to the compound formed by this wall is through the *zaure* ("entrance room"), which is the public room of the head of the compound, in which he conducts much of his business (and in which male survey participants were interviewed). Men who are not kin are rarely permitted to pass beyond the *zaure* into the compound, because the secluded women of the household are inside. Virtually all women of child-bearing age are in seclusion (*kulle*); they do not leave their compounds during the course of a normal day. Some visit friends and relatives during the evening hours, participate in festivals and travel (in groups) to hospitals and clinics for medical treatment for themselves and their children. As a rule, however, their world is their compound. Within this world, secluded women lead surprisingly active economic lives. Almost all married women have small businesses; they trade, sell prepared food, or thresh or pound grain for other households. They commonly use their children as agents to contact customers or suppliers.[7]

Each compound may contain one or more households, sometimes with a physical partition to reflect a division into multiple households.[8] The households can be either simple *iyali* composed of a married man, his wives, children

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[6]*Maguzawa* generally means "non-Mu slim people." In this instance the hamlet is Christian.

[7]On the practice of *kulle* and the economic activities of women see M. Smith (1954), Hill (1969), Simmons (1976b) and Callaway (1987).

[8]As discussed in chapter 1, for the purposes of this study a household is defined to be a group of individuals who regularly consume food together.

and unmarried relatives, or a *gandu* (pl. *gandaye*) composed of a father and married son(s) or married brothers. *Gandaye* are rare in three of the four survey villages, with only five percent of the households involved in a *gandu*. In one village (Madobi) more than one-quarter of the sample households reported that they are members of a *gandu*. By contrast, in the three Zaria area villages studied by Norman and his colleagues in the late 1960s (Norman [1972]), half of all households were members of a *gandu*. This observation accords with the hypothesis that the prevalence of *gandu* household organization is declining.[9] Nevertheless, some households remain in *gandu*, the exceptional flexibility of that organization requires that particular care be exercised in any statistical procedures involving household demographics. Table 1 provides summary data concerning land holdings and household demographics for the four villages in the survey.

There is a rich history of detailed socio-economic fieldwork in northern Nigeria, much by the staff of the Institute for Agricultural Research (I.A.R.). Norman and his colleagues at the I.A.R. surveyed three villages near Zaria in 1966-67 (Norman [1967; 1972]). Ega (1984; 1988) surveyed four villages near Zaria in 1978-79. Matlon (1977) studied three villages in southern Kano State in 1974-75. These villages are less than 50 kilometers from Madobi, one of the four villages in my sample. Longhurst (1985) conducted a survey in 1975-77 in the village of Dayi in southern Katsina State, about 70 kilometers north of Gangara, another of the villages in my sample. Hill's (1972) classic study took place in 1967-69 in Batagawara in northern Katsina state, about 200 kilometers north of Zaria. Finally, Norman and his colleagues (Norman et al. [1976]) also surveyed three villages in Sokoto State in 1974-75, about 300 kilometers northwest of Zaria. Table 2 summarizes some of the general physical and economic characteristics of the nineteen villages.[10]

The Zaria area is in the heart of one of the most dynamic and promising agricultural regions of West Africa. It is located in the Guinea Savanna ecological zone. It receives an average 1,100 millimeters of rain per year during a wet season that lasts for approximately four months. The total amount of rainfall received over the year, its distribution over the rainy season and the dates of onset and termination of the rainy season, however, are highly variable. For example, the 90 percent confidence region for total rainfall is 820 millimeters to 1360 millimeters.[11]

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[9]See the references in chapter 1, section A.6.

[10]Table 2 follows the example of and takes many of its entries from Longhurst (1985; Tables 1.1-1.4).

[11]Further detail on the climate of the region is available in Kowal (1972) and Agboola (1979).

In April, before the rainy season begins, work on the fields commences. Debris from the previous year's crop is cleared and burnt and organic fertilizer is spread on the fields. The main cropping season begins immediately after the rainy season is established, usually in mid-May. With the ground softened by the first rains, the heavy labor of making long ridges by hand for planting begins.[12] Through the first few months of the rainy season, farmers continually adjust their cropping strategies as weather patterns reveal themselves. False starts to the rainy season are not uncommon and seeds may have to be replanted as a result. Depending on the success of germination, various different crops might be interplanted with the first. Extremely complex crop mixtures can emerge as a consequence. Agronomic evidence supports the claims made by farmers that this "adaptive management" reduces income variation caused by variable rainfall.[13] Every household in the research villages operates a farm, usually composed of multiple plots (an average of 5 plots per household) interspersed with those of other village residents. Two to five different crops are generally interplanted on each plot, so each household may farm up to 8 to 10 different crops. By July the cropping patterns of the fields are mostly finalized. The first and second weeding of the crops is in progress and the seasonal rise in the price of foodstuffs is nearing its peak. During the survey year (and, apparently, most years) the dominant topic of conversation turned to the inability to obtain chemical fertilizer at the controlled government price. By the end of August, early-maturing millets can be harvested, but sorghum is not harvested until November-December and cotton remains in the fields until January.

There is also dry-season farming on lowlands bordering streams (*fadama*). *Fadama* land is typically heavier than upland soil (*tudu*, or when cultivated, *gonar daji*) and is often waterlogged during the rainy season. The water table remains close enough to the surface of *fadama* that it can often be farmed without irrigation during the dry season. About thirteen percent of the cultivated land in the four villages covered by this survey was *fadama* land, a somewhat higher proportion than in most of the villages previously studied in northern Nigeria (see Table 2).

The average size of the farms of the sample households is 3.8 hectares, which is comparable to the sizes

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[12] See Kowal and Stockinger (1973) for a discussion of the agronomics of ridging in northern Nigeria.

[13] See Watts (1979; chapter 3) and Balcet and Candler (1982) for vivid descriptions of the adaptation of farming strategies to the unfolding pattern of the rainy season. See Abalu (1976) and Norman (1975) for further discussion of the practice of interplanting different crops on a single plot. Interplanting has a number of functions in addition to reducing income uncertainty. For example, it permits a more stable level of labor demand over the year.

observed in earlier studies. There are 8.5 residents per household in this sample, which is similar to the size generally observed in Hausaland in the past.[14] Cultivated area per capita, therefore, is comparable in these villages to those surveyed in earlier studies.

There have been significant changes in cropping patterns and technologies over the past two decades. In particular, there has been a marked shift to the use of hybrid varieties of maize and a dramatic expansion of the use of chemical fertilizers (Balcet and Chandler [1982]; Yayock et al. [1978]). The use of bullock and tractor plowing has become more prevalent, though most farmers still rely entirely on manual cultivation. Neither animal traction nor tractor plowing was in use during Norman's 1966-67 survey of three villages in the same area (Norman, 1972). Currently, among households in my sample, 15% of cultivated area (7% of plots) is plowed at least once by a tractor, and another 14% (9%) by bullock plow. Longhurst (1985) found heavier use of animal traction (45% of cultivated area) in his 1976 survey of Dayi, near this area.

There is a moderate degree of involvement in the market both for the purchase of agricultural inputs and the sale of output. 73 percent of the sample households produce vegetables and non-food cash crops for the market and 95 percent of cultivated land is treated with modern chemical fertilizers. 53 percent of all labor used on the sample household farms is wage labor, a higher proportion than was found in earlier studies (Table 2). For example, on farms within the boundaries of the Funtua Agricultural Development Project, hired labor accounted for only 24 percent of total farm labor in 1976-78.[15]

Despite the statutory prohibition on land sales and rental, land markets are available.[16] Only 49 percent of the area farmed in the sample villages was inherited by its cultivator. 25 percent was purchased, 17 percent was borrowed in exchange for token payments (*aro*) and the remaining 8 percent was cleared from bush by the cultivator, rented, received as a gift, or transferred as collateral for a loan. Villages studied in the past tended to have higher proportions of land acquired through inheritance (Table 2).

A large variety of non-agricultural occupations also exists. These include trading, the provision of transport

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[14]The definition of "household" is the same for each of the studies reported in Table 2.

[15]Balcet and Candler (1982; table 2.6). One of my sample villages (Gangara) lies just outside those boundaries.

[16]Land tenure is discussed briefly in chapter 1. See also Ega (1984).

services (via vans, motorcycles, bicycles, or donkeys), and small-scale industries such as food preparation, carpentry, house building, and tailoring. In their 1966-67 survey of three Zaria area villages, Norman and his colleagues found that off-farm employment accounted for 39 percent of the days work by adult males and virtually all of the work of married females (Norman, Simmons and Hays [1982, p.121]).[17] Matlon found that off-farm work accounted for 16 percent of total labor time in his 1974-75 survey of three Kano State villages (Matlon [1977, p. 293]). The amount of time spent on non-agricultural activities is countercyclical to the seasonal labor demands of farming, allowing some leveling of work effort over the course of the year.

B. Sampling and Survey Methods.

The design of an appropriate approach to fieldwork is conditioned by the particular issues under investigation. The goal of this project is an understanding of credit relations in northern Nigeria. The discussion of Udry (1991, chapter 2) however, shows that the literature on rural Hausaland contains no consensus as to the institutional form of the credit market. As a result of this ambiguity regarding the particular instruments of credit which exist, fieldwork cannot begin with a fixed notion of even the qualitative shape of credit transactions (as, for instance, it could in parts of India). The inventory of alternative means of obtaining credit that can be garnered from the literature does not provide a firm foundation for beginning a survey.

In addition to the lacuna in the empirical literature, there are a variety of practical and procedural difficulties associated with field research on credit in northern Nigeria. These include the limited access to adult females by male researchers, the scarcity of trained field assistants, the sensitivity of many issues of surrounding credit and, above all, the vast cultural and linguistic distance between the researcher and respondent. There is a real danger of collecting data which is badly contaminated by systematic non-sampling error. The interview is a social event: extensive greetings are exchanged, food may be served, decorum maintained. The politeness of the host, however, is required by the norms of proper behavior. Her actions therefore provide little information concerning her true attitudes towards participation in the survey. She will surely answer the questions, for not to do so would be rude. However, she may put little effort into the responses and may have a variety of motivations to answer with less than complete accuracy. She may attempt to provide answers which she thinks the interviewer wants to hear, or those which will shorten the interview. She may

[17]The practice of *kulle* prohibits women from working on the fields.

provide answers which accord with a norm of proper behavior (exaggerating the size of gifts given, for instance). She may boast or be overly modest. Research based on a participant-observer methodology is subject to the same difficulties, but there is greater scope for establishing direct trust between the researcher and respondent with such qualitative field methods than in a survey. This has led some to conclude that survey methods are inappropriate for the study of a wide range of phenomena in northern Nigeria. Smith (1955), Hill (1982) and especially Watts (1983) forcefully raise these concerns. The different objections are all similar, and involve the degree of contact and familiarity between the researcher and the individuals whose actions, opinions, and knowledge form the foundation of the study. Whether the distance is caused by the use of enumerators to ask prepared questions or by periodic absence from a village (for instance, to allow periodic residence in other villages), it is this distance that creates obstacles.

A paradox therefore arises out of the issues under consideration. The survey method itself is indispensable - it lies at the core of the statistical methods to be used to investigate credit transactions in northern Nigeria. Thus, some distance between myself and individual respondents is required even to begin the investigation of the quantitative issues at hand. However, based on his own field experience, Watts is very pessimistic about the feasibility of investigating these very issues at such a distance:

> [w]ith respect to indebtedness and food sales, it quickly became clear that survey methods using sampling techniques were wholly inappropriate. Reliable data could be obtained only from a small number of individuals-householders whom the author knew well- painfully compiled over a long period. Accordingly, what emerges is a small, patchy and perhaps unrepresentative picture; yet to resort to large-scale sampling on such sensitive matters would, in my opinion, magnify the error factor to a wholly intolerable degree….numbers of young girls are regularly underestimated as are adopted children; grain sales tend to be very sensitive; numbers of large livestock and manure sales are invariably fictive; and various forms of land tenure, especially pledging, rental, and sales, are difficult to document either through obfuscatory use of language or through verbal agreement. Credit, moneylending, and loans are all fundamentally off limits. (1983, pp. 35-36)

Hill and M.G. Smith would second this view. At least three researchers with extensive field experience in northern Nigeria are thus very skeptical of the possibility of utilizing survey methods. These concerns, without doubt, are well founded. My response, detailed below, was continuous attempts to reduce the distance between myself and the respondents as much as possible without sacrificing the basic objectives of the study.

Hill (1982, p.133) strongly objects to sampling on other, less persuasive grounds:

> Among the many objections to sampling in research of this type are: first, that any method of stratifying the sample in advance presupposes that the salient variables are already known--as is unlikely; second, that uniquely interesting households may happen to be omitted; and that there are apt to be unexpected advantages from the possibility of relating everybody to everybody else.

This critique is misguided, at least with regard to this study. First, the sample is unstratified except with respect to

village, an explicitly salient variable. Second, it is no more likely that interesting households may be omitted by sampling from several villages than by exclusive attention to a single village. Finally, while there indeed could be unexpected advantages from "relating everybody to everybody else," these advantages are less likely to appear in this study, which is concerned, in significant part, with potential interactions across village boundaries. It surely would be improvident to discard the considerable advantages of sampling on such grounds.

I made a preliminary six-week visit to the Institute for Agricultural Research in Zaria in August-September 1986 with the dual purpose of beginning to build a qualitative portrait of what institutions of credit are available and generating fieldwork procedures which would ensure high quality data on these notoriously sensitive matters. The visit also proved vital in gaining formal affiliation with the Department of Agricultural Economics and Rural Sociology of the I.A.R. This affiliation was a formal necessity (and an intellectual and practical blessing) before survey work could begin.

During the preliminary visit, I conducted interviews with the residents of several villages in the survey area in order to begin to clarify the characteristics of the credit markets in the region. These interviews were informal and relatively unstructured and were conducted in groups of two to four informants. The discussions focused on the existence of various institutions of credit rather than on individuals' use of these institutions. It was often through disputes between the informants over the meaning of a word, or the appropriate procedure to be followed in a particular contractual situation that the most valuable information was gathered. I was able to confirm the virtual non-existence of regulated credit outside of the city of Zaria itself. I also received the first indications that credit-product market interlinkages in the form of forward sales of standing crops are unimportant. Most importantly, I developed a glossary of local usage of vocabulary about credit, a glossary which proved invaluable when developing questionnaires. I made little progress during the preliminary research, however, toward narrowing down the inventory of potentially available contractual forms of credit. The large variety of institutions described in the literature seemed to exist in the survey area; it would require formal survey research to make judgements concerning the quantitative importance of the alternative mechanisms.

The staff of the I.A.R. represents one of the highest concentrations of researchers experienced in socio-economic fieldwork in Africa. I was able to take advantage of this expertise while formulating specific plans for the main period of fieldwork which would minimize the danger of non-sampling error caused by the particular difficulties of survey work in northern Nigeria. During the preliminary visit I received generous and valuable assistance in setting the timetable for research, preparing a sample frame of potential survey villages, planning for the selection and training of

enumerators, drafting guidelines for interviewing and field measurement procedures, and generating outlines and drafts of the questionnaires to be used.

1. Survey Period.

I arrived in Zaria to begin the main period of fieldwork in February 1988. I conducted the survey from April 1988 to February 1989. The one-year survey period was required by the dramatic seasonality of the agricultural economy of northern Nigeria. By having enumerators conduct monthly interviews over the course of the year, I was able to gather contemporaneous data on stocks at a number of different points in time and on transactions throughout the year. The length of the survey enabled me to collect contemporaneous data both on the size and contractual terms of loans and on actual repayments of the loans. The seasonal pattern of many loan transactions (borrowing during planting, repayment after harvest) meant that the critically sensitive questions concerning loan repayments were generally asked toward the end of the survey, after the enumerators had built a relationship with the respondents.

2. Village Selection and Sample Size.

The survey method and the multi-village character of the research were indispensable, but the distance between myself and respondents had to be minimized. Therefore, I kept the size of the survey and the number of villages included as small as possible. I decided to survey four villages, with fifty households per village. The small sample size enabled me to meet all of the male respondents over the course of the year and I was able to immediately intervene when an enumerator sensed that a respondent was becoming less cooperative. I was able to spend a day each week in each of the four villages and thus kept a relatively high profile during the course of the survey. I was in regular contact with the leadership of each village and was readily accessible to any of the respondents. This was particularly important when (rare) conflicts arose between the enumerators and respondents or other village residents.

I began by compiling a list of villages within the Zaria Local Government area (excluding those in the peri-urban area of Zaria itself) and classifying them into on- and off-main road categories. After choosing two villages from each category, I went to visit. If the village leadership seemed cooperative, it remained in the sample. Otherwise, I selected a nearby village to replace it.[18] In three of the four villages, current tax lists were used as the sample frame. In one village the tax list was unreliable so the enumerators conducted a census. A random sample of fifty households was

[18]This procedure economized on my (extremely limited) transportation resources and on the time of those who volunteered to guide me to the villages.

selected in each village.[19] After a public meeting with the sample households in each village in which we explained the purpose and procedures of the project, the interviews began.[20]

3. Enumerators.

Two enumerators (one male and one female) lived in each village for the duration of the survey. The male was responsible for interviewing each of the fifty household heads once a month, the female interviewed each of their wives each month. There was a ninth enumerator who was responsible for measuring one or two of the plots of each household and administering a questionnaire on the use and history of each of the plots owned or used by each household. The process through which they were selected and trained was conventional except in one respect; they participated fully in translating the questionnaires into Hausa. I retained final responsibility for the wording, but we all discussed each question. These discussions gave the enumerators an in-depth exposure to the reasoning behind each question even before we began mock interviews. It also began the process (which continued throughout the period of the survey) of feedback from the enumerators to me concerning the usefulness and clarity of the questions.

4. Interviews.

The core of the survey process is the interview between the enumerator and respondent, and it is at this point that non-sampling error is most likely to arise. The small sample size enabled me to play a very active role in supervising interviews. I spent a day a week in each village, usually attending interviews with the male enumerator. Therefore, I was able to monitor closely the enumerators' relationships with male respondents and could evaluate the quality of the interviews. The practice of *kulle* or wife-seclusion, however, prevented me from attending interviews with the Hausa female respondents. I therefore, by necessity have less confidence in the data from women than I do in the data from men; unfortunately this seems to be an inevitable outcome of being a male researcher in Hausa society.

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[19]The names were publicly drawn from a hat by the village heads.

[20]The meetings tended to be long and full of questions, but as I later learned not all doubts were put to rest. For example, in Madobi my initial guide to the village knew its location because he had helped build a church in the *maguzawa* hamlet. Furthermore, in a coincidence of which I was then unaware, that hamlet received a shipment of aid from urban churches on the same day that I arrived in the village. A rumor spread that the survey was aimed at converting everyone to Christianity, but no one mentioned this to me during the meeting. It was only a week later that I heard the rumor. It was only through the timely and vital intervention of Alhaji Sabo Giade, a staff member of the I.A.R. and a highly respected teacher and scholar, that the rumor was laid to rest.

Each month the female enumerators interviewed the wives of each household head. These interviews were held separately, in the interior of the compound away from the household head. I had expected that these independent interviews would provide an important check on the accuracy of responses from both women and men. On many matters, however, the responses concerned only the individuals' own dealings. A significant amount of information would have been lost had I limited interviews to a single sex. The small degree of overlap is unfortunate, however, because it limited my ability to check the accuracy of responses from female respondents.

5. Revision of Data and Questionnaires.

Responses from each interview were entered into a database within a few days of the interview. A number of internal consistency checks were built into the questionnaires and database program. This constant and immediate review of the completed questionnaires was particularly valuable. I returned any questionnaire responses which included inconsistencies or ambiguities to the enumerator for immediate re-interview. During the first round of the survey I sent back about fifty percent of questionnaires for re-interviewing. That proportion dropped to about fifteen percent as the enumerators became more skilled interviewers and gained a better rapport with the respondents.

These procedures enabled me to heed Hill's (1982) call for a close interaction between theory construction and detailed personal observation at the village level. As a result of the constant review of incoming data and frequent observation of interviews, I made regular changes in interview procedures and in the questionnaires themselves as the survey progressed. Many of these changes were minor, intended to clarify questions to avoid ambiguous or misleading responses. In addition, however, I was able to design new questionnaires and revise old questions in accordance with theoretical insights that emerged from my close involvement in the interviews. One particularly important example of this arose out of the regular side comments from respondents that loan repayments were unpredictable and depended upon the success of farming activities. In response to these comments, which could not have been encoded on a rigid questionnaire (for I had not anticipated responses along such lines) I was able to create questionnaires to collect information on the realization of random production shocks by all borrowers and lenders. Udry (1991), in large measure, consists of an exploration of the relationship between loan repayments and these random events.

6. Questionnaires.

The questionnaires were designed to yield a complete picture of each household's asset and debt position; an account of its credit, product, asset and asset-rental transactions over the previous month; and a range of demographic

and background data. The questionnaires were written in Hausa and the responses were recorded by the enumerators in longhand. The longhand responses were then entered directly into the survey database. No coding errors could emerge in this process, for no coding took place. Misspellings and typographical errors were corrected at a later stage and never were so severe that the original answer could not be detected. There were a total of eighteen questionnaires (Table 3 details the frequency with which each questionnaire was included in the monthly interviews). 'M' and 'F' after each questionnaire name indicate that the questionnaire was administered to the household head and to each of his wives, respectively.

1. A household roster which lists the members of the household (HH Roster) (MF).

2. A household members component which provides data on the education, migration and work histories of each of the household members, as well as an accounting of children ever born to each wife (HH Members) (MF).

3. An asset holdings component which lists the miscellaneous household goods, farming equipment, and other miscellaneous assets of each household. This questionnaire also provides information concerning the housing and water supply for each household (Misc. Assets) (MF).

4. An account of the grain (and other produce) holdings of the household, as well as information concerning holdings of agricultural inputs and cash and participation in rotating credit and savings associations (*adashi*) (Grain Stocks) (MF).

5. A livestock transactions component, which details the sale, purchase, rental, lending, slaughter, or death of any livestock over the previous month. This also includes an inventory of current household ownership of livestock and fowl (HH Livestock) (MF).

6. An additional questionnaire concerning the ownership of livestock by individuals in the household (Indiv. Livestock) (MF).

7. An inventory of trading stocks (Trade Stocks) (MF).

8. A description of any land owned by females, and the use to which it is put (Female Land) (F).

9. A land survey which details the characteristics, history and use of each plot owned or farmed by each household. This includes estimates of the area of each plot (Land Survey) (M).[21]

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[21]None of the respondents had previously had their farms measured. For this study, one enumerator (Adex Adisa) undertook the responsibility of measuring one to two plots of each respondent. He carried out this task using an optical range

10. A listing of relatives not living with the household, their occupations and residences (Relatives) (MF).

11. A plot production component which provides an accounting of the use of inputs (including family labor) and output on each plot over the sample year. An account of special problems arising on each plot is included in this component. This questionnaire was used only once (at harvest), so the data are retrospective over the entire crop year (Land Use) (M).

12, 13. Two separate questionnaires concerning the individual assets owned by household heads and their wives currently and at the time of marriage (Male Assets (M); Female Assets (F)).

14. A labor component detailing all transactions involving labor over the previous month (Labor) (MF).

15. A product market component concerned with the sale or purchase of farm output and inputs (such as seeds or chemicals) over the previous month (Product) (MF).

16. A land transactions component providing an accounting of the purchase, sale, rental, inheritance, gift, or borrowing (*aro*) of plots of land over the previous month (Land Trans.) (MF).

17. An account of gifts given or received over the previous week (Gifts) (MF).

18. A component providing details of all borrowing or lending over the previous month, of repayments of any loans, and of any contacts between the borrower and lender of an outstanding loan (Credit) (MF).

The large number of questionnaires notwithstanding, I made every effort to restrict data collection to those matters directly relevant to the investigation of credit transactions. In particular, I made no attempt to collect data concerning income or consumption. Both the receipt of income and expenditure on consumption are continuous processes which cannot, I believe, be recovered reliably with a one-month recall (Norman [1972]; Lipton and Moore [1972]). I felt that a study of rural credit could proceed without data on income and consumption, so I declined to modify the survey procedures to permit their collection.

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finder and a compass. Areas of the remaining plots of each household were estimated relative to the measured plots. This comparison was made through the household head's estimate of the number of man-days required to ridge and to weed each plot, as well as his direct estimate of the relative size.

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