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ASSESSING CHANGES IN HOUSEHOLD ACCESS TO FINANCIAL SERVICES IN MEXICO: AN ANALYSIS OF THE *BANSEFI / SAGARPA* PANEL SURVEY 2004-2007

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Abstract

In March 2004, BANSEFI *and* SAGARPA *began a project to examine the impact on households of the Program to Strengthen the Popular Credit and Savings Sector* (Programa de Fortalecimiento del Sector de Ahorro y Crédito Popular), *which was designed to help non-bank financial intermediaries to abide by the* Ley de Ahorro y Crédito Popular (LACP), *passed by the Mexican Congress in 2001. During the spring of 2004, 5,768 households were surveyed. The survey was repeated each of the next three years. Attrition over the survey period was substantial, but in 2007, 3,723 of the households surveyed in 2004 were interviewed for the last time. This report analyzes the household survey data in an attempt to shed light on the impact of the Program. The principal findings of the report are:*

1) The penetration[1] of popular sector financial institutions increased markedly between 2004 and 2007. A conservative estimate shows that penetration among households in the surveyed communities increased by 20 percentage points (from 33 percent to 53 percent) over the three years.

2) Among survey households which were unbanked[2] in 2004, households with higher expenditure levels in 2004, and households whose heads have higher levels of formal schooling, were more likely to have opened an account before 2007. This pattern is consistent with the tendencies in the baseline data. That is, in 2004, households with accounts were wealthier (measured by both expenditure levels and ownership of durable assets) and had higher education levels.

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[1] Measured as the opening of new bank accounts.
[2] The term "banked" refers to the existence of at least one household account.

3) There is substantial attrition in the sample, and the attrition is clearly not random. Households with higher income and education levels are more likely to be dropped from the sample. However, when we take the characteristics of the households dropping from the sample in their entirety, we do not find that attrition has a significant impact on the estimated penetration rates.

4) We find that respondents expressing more confidence in neighbors, other Mexicans and various levels of government are more likely to have opened an account between 2004 and 2007. This suggests that if the regulatory scheme of the LACP *was successful in increasing the confidence in popular sector financial institutions, this was likely one channel leading to higher penetration rates. We do not find any association between the measures of risk taking in the survey and opening accounts, though risk appears to have been measured with a significant amount of noise in the survey.*

5) There is a substantial amount of variance in the policies of popular sector financial institutions regarding membership, savings accounts and loans. Institutions also vary in the degree they report serving women, poor households, agricultural communities, and so forth. But we find only weak (and statistically insignificant) evidence that the characteristics of institutions along either of these dimensions is associated with how quickly the branches included in the survey expanded.

6) We find no relationship between opening an account during the 2004-2007 period and starting either an agricultural or non-agricultural business over the same period. We also find no substitution between use of the popular sector financial institutions and informal savings mechanisms. Indeed, we find both those with an account in 2004 and those opening an account before 2007 are more likely to participate in at least one Tanda. *In rural areas, there is no relationship between use of formal financial institutions and ownership of livestock, another common way of holding assets.*

7) The percentage of households in the sample taking a new loan in the 12 months prior to the survey falls between 2004 and 2006, and rebounds only partially in 2007. Three quarters of the loans taken by panel survey households have terms of one year or less. Households most commonly report using the loans for regular expenditures and housing construction or repair, but a significant share of the loans were used for investment purposes. According to household responses, about a quarter of the loans were invested in agricultural or non-agricultural businesses.

The BANSEFI /SAGARPA *panel data set represents one of the richest and most detailed data sets on use of financial services by households in Mexico. This report summarizes some of the patterns in the data, but we are certain that analysts in government, academia, and the financial services sector itself will find the data useful for further analysis.*

—— Key words: Microcredits, Mexico.
JEL classification: G21, O12.

1. Description of the Surveys and Data

The main survey on which the analysis in this report is based is the *BANSEFI / SAGARPA* panel survey of households. The survey was conducted annually between 2004 and 2007. The baseline survey was conducted between March 30 and July 2, 2004. By design, the baseline sample was evenly split between households which were clients of popular sector financial institutions and households which had not had an account in any financial institution at least since 1999. The client sample was selected in two steps.[3] In the first step, branches of popular sector financial institutions were selected randomly with probability proportional to their size (measured by number of accounts). For each selected branch, 30 clients were selected at random from the registry of clients. Then, an equal number of households from the same or a nearby community who were not clients of any financial institution were selected by means of a screening survey. The screen eliminated households where any member had had an active bank account within the 5 years prior to the survey (that is, in 1999 or after). Data on the number of households surveyed in each round is shown on Table 1, broken down by whether the household had an account in 2004 and by subsample (described below).

The 2004 sample included 5,768 households, 2,975 having accounts in popular sector financial institutions and 2,793 having no accounts in any financial institution. In May-July 2005, an attempt was made to resurvey all of the households included in the 2004 survey. Of the original 5,768 households, 4,676 were resurveyed in 2005, implying an attrition rate of 17.6 percent. Some households were added to the survey in the second round. Ninety of the additional households were clients of microfinance institutions (*Promujer, CAME* and *Financiera Compartamos*), and 90 were clients of *Banco Azteca*. These 180 households were resurveyed with some attrition) in 2006 and 2007.

In April and May 2006, the panel households were surveyed for a third time. Of the 4,676 households surveyed in both 2004 and 2005, 3,914 were resurveyed in 2006. The implied attrition rate of 16.3 percent overstates the true attrition somewhat, because *PATMIR* did not attempt to re-interview all of its 2005 households in 2006. Budget limitations reduced PATMIR's target sample size from 1,218 to 738 in 2006.[4] In the final survey round, conducted between September 1 and November 20, 2007, 3,723 of the original sample of households were resurveyed. The target for *PATMIR* households was increased for round 4 to 910 households. As a result, some households not surveyed in round 3 were surveyed in round 4. The *PATMIR* target of 910 households was reached before all of the baseline households had been resurveyed. Therefore, no attempt was made to resurvey 153 of the *PATMIR* households surveyed in the first two rounds.

[3] All four waves of the survey were carried out by Berumen, which produced methodological reports following each wave. The description of the sample and survey methods are based on information from Berumen's methodological reports.

[4] This target was exceeded slightly, so that the total *PATMIR* sample in 2006 was 761 households. We don't have information on the true attrition from this sample for the year, because we don't know how many households the survey firm attempted to survey in order to reach the 761 completed surveys.

In the analysis for this report, we focus primarily on the balanced panel of 3,723 households surveyed in rounds 1 and 4. After eliminating households with key missing data, the balanced panel is 3,473 households. Of these, 268 are *PATMIR* households which were not surveyed in the 2006 round.

The survey instrument used in each of the four waves was modified in only minor ways across the four rounds on the survey. For the baseline survey, questions related to the use of financial institutions—e.g., savings balances, frequency of use, etc.—were asked only of households with accounts. In later rounds, the survey included a screening question asking all households if they had opened or closed an account within the previous year. In the fourth round, a survey module measuring willingness to take risks and confidence in people and institutions was added to the survey. This module was administered to the households remaining in the panel, and to an additional 1000 households.

In general, the data across all four waves appear to have been gathered in a consistent manner allowing for good comparability across waves. One exception to this is that the distribution of savings account balances changes markedly between wave 3 and wave 4. We have not been able to identify any change in the questions across the rounds which might have caused this shift. But more than 75% of households with an account in 2007 either fail to respond to the question on savings account balances or say they have a zero balance on the account, compared with less than 25% in each of the other three rounds. Therefore, we have chosen not to use these data. Additionally, the questions measuring risk aversion appear not to have worked well, as we discuss in more detail later in the report.

1.1 Sample sizes and attrition

The sample was designed to provide information on several distinct segments of the popular financial sector, and to provide representation by size of institution and by geographic region. The distribution of households by type of institution is shown on Table 1. The table shows both the size of the initial sample, and the size of the resurveyed samples in each of the four years. For each year, households are grouped according to whether they were a client of an *SACP* in 2004 or not. Of course, some households which were not clients in 2004 opened accounts after the baseline survey. We discuss these movements in Section 2 of the report. For the purposes of this section, those households remain in the "no account" group.

The sample is divided into seven groups on the table. The largest group is clients of SACPs not associated with *PATMIR* and not including *BANSEFI*. We refer to this group in the report as the "Caja sample." Just over half of the baseline sample (3,076 out of 5,768 households) are clients in the Caja sample, or the matched set of non-client households located in communities which are part of the Caja sample. Clients of *PATMIR* (and unbanked households in the same communities) are the second largest subsample, with 1,496 households in the baseline sample. The third group of regular clients is 319 households are clients of *BANSEFI* branches, or are unbanked households located in those same communities.

Table 1
Number of Households Surveyed by Round and SubSample

		Round 1			Round 2			Round 3			Round 4			Attrition Rate		
		Account	No Account	Total	Account	No Account	Total	Account	No Account	Total	Account	No Account	Total	Account	No Account	Tota
SACP	Interviews	1595	1481	3076	1314	1170	2484	1145	1036	2181	987	941	1928	38.1	36.5	37.3
	Attrited				281	311	592	169	134	303	158	95	253			
	Dropped															
SACP (Oportunidades - Procampo)	Interviews	210	155	365	175	108	283	173	105	278	173	101	274	17.6	34.8	24.9
	Attrited				35	47	82	2	3	5	0	4	4			
	Dropped															
BANSEFI	Interviews	153	166	319	128	137	265	128	128	256	117	106	223	23.5	36.1	30.1
	Attrited				25	29	54	0	9	9	11	22	33			
	Dropped															
BANSEFI (Oportunidades - Procampo)	Interviews	210	182	392	184	139	323	151	117	268	120	110	230	42.9	39.6	41.3
	Attrited				26	43	69	33	22	55	31	7	38			
	Dropped															
Crédito a la palabra	Interviews	60	60	120	58	45	103	55	37	92	53	33	86	11.7	45.0	28.3
	Attrited				2	15	17	3	8	11	2	4	6			
	Dropped															
Banco Azteca	Interviews	-	-	-	90	-	90	78	-	78	68	-	68	24.4	-	-
	Attrited							12	-	12	10	-	10			
	Dropped															
SAGARPA	Interviews	747	749	1496	605	613	1218	436	325	761	449	464	913	30.4	37.6	34.3
	Attrited				142	136	278	-53	30	-23	107	114	221[1/]			
	Dropped							222	258	480						
Total	Interviews	2975	2793	5768	2554	2212	4766	2166	1748	3914	1967	1755	3722	31.5	37.1	34.3
	Attrited	0	0	0	511	581	1092	166	206	372	319	246	565			
	Dropped	0	0	0	0	0	0	222	258	480	0	0	0			

Note: "Account" and "No Account" indicates status at the time of the baseline survey in 2004.
1/ Includes 154 households for which no attempt to resurvey was made because the 2007 target sample size had been reached.

The sample also includes households which participate in government social programs, including *PROCAMPO, OPORTUNIDADES,* and *Crédito a la Palabra.* Many of these households were brought into the popular sector financial system when accounts were opened for by government agencies. These accounts allowed the agencies to make regular transfers to the families electronically. Some of these accounts were opened (or were to be opened) in Cajas (365 households in the *PROCAMPO* or *OPORTUNIDADES* programs), and some were opened in *BANSEFI* branches (392 households in the *PROCAMPO* or *OPORTUNIDADES* programs). There were 120 households in the *Crédito a la Palabra* program, half served by *BANSEFI* and half by Cajas. (We do not separate the *Crédito a la Palabra* sample by institution in the sample, because of the small size of this subsample.) The seventh and final group shown on the table is the clients of *Banco Azteca,* 90 of which were added in 2005.

As indicated on Table 1, the original sample was reduced significantly over the four years by attrition and by the intentional dropping of households.[5] Of the 5768 households surveyed in the first round, only 3,473 were surveyed in each of the four rounds. The overall attrition rate measured from round 1 to round 4 is just over 34 percent. The rate is somewhat higher for households without an account in 2004 (37.1 percent) than for those with an account in 2004 (31.5 percent). Among the subsamples of households not in government social programs, attrition was highest in the Caja sample (37.3 percent) and lowest in the *BANSEFI* sample (30.1 percent). Attrition in the *PATMIR* sample was 34.3 percent. In the *BANSEFI* subsample, the difference in attrition rates for those with and without accounts in 2004 was especially large (23.5 percent for those with accounts and 36.1 percent for those without).

Given the high attrition rate, we should ask if households dropped from the survey differ systematically from those that remained in the sample. In other words: Can we call the attrition random? Table 2 shows a few of the characteristics of the households remaining in and dropping out of the sample. The data indicate that the households dropping out of the sample do differ significantly from those remaining in the sample. The attriting households are more urban, have heads with higher education levels, are less likely to have a head who speaks an indigenous language, are less likely to receive remittances. Those dropping out of the survey also tend to have lower home- and land-ownership rates, and to be less likely to own an agricultural and non-agricultural business. Most of these are consistent with a general finding that less mobile households are more likely to remain in the sample. Rural households are less likely to move than urban households, those who own their home, or own a business, are also less likely to move. On the other hand, urban households are more mobile than rural households. The pattern of attrition is not unexpected because more mobile households are likely to be more difficult for the survey firm to relocate.

[5] In the case of *PATMIR*, some households were dropped in round 3 but then re-surveyed in round 4. These households were not considered when computing the attrition rates.

All of the differences shown in Table 2 are significant at the 1 percent level except for receipt of remittances, which is significant at the 5 percent level. Though Table 2 shows the data for the entire sample, the patterns across subsamples are similar. As we discuss in Section 2, we do not find that attrition has a large impact on the estimated penetration of financial services in the sample. The households attriting from the sample have characteristics which give them a predicted probability of opening an account which is similar to the households remaining in the sample during the three years of the panel.

Table 2
Characteritics of Households Attriting from Sample

Number of Observations	Non-Attrited 3205	Attrited 2563
Percentage Rural	51%	40%
Indigenous Language	28%	18%
Schooling of head (max)	6.0	7.6
Receives Remittances	4%	3%
Own Agricultural Business	29%	18%
Own non-ag Business	32%	29%

1.2 Characteristics of households by subsample

How much do the characteristics of households differ by subsample? Table 3 reports mean or median values for individual and household variables by subsample. We show the age and education levels of the household heads and the percentage of households in which both spouses are present. We also show the log monthly expenditures and the log value of household durable goods assets. Because the main purpose in showing these data is to provide characteristics of the types of households in the communities served by popular sector financial institutions, we report first round data based on the entire sample of 5,768 households.

As the table indicates, two-thirds of the Caja and *BANSEFI* samples are located in urban areas, while less than one-third of the *PATMIR* sample households are in urban areas. Given differences in income and education levels in urban and rural Mexico, this difference by itself would lead us to expect the *PATMIR* sample households to have lower schooling and income levels. In fact, that is the case. We report the highest level of schooling attainment of either the household head or spouse. By this measure, the average *PATMIR* household has 6.4 years of schooling, compared with 7.2 in the Caja sample and 7.3 in the *BANSEFI* sample. Schooling levels are even lower among households participating in government social programs: 5.0 years for households in the *Procampo / Oportunidades* samples, and 3.9 for the *Crédito a la Palabra*

sample. The pattern of monthly household expenditures[6] and durable assets[7] is similar. We use monthly expenditures as an indication of household income.[8] The measure excludes expenditures on durable goods and other purchases that are likely to occur less frequently. We multiply this by 12 to obtain an annual expenditure level. The average of the log of annual expenditures by subsample is shown on Table 3. The *PATMIR* sample households have average expenditure levels about 40

Table 3
Summary Data by Type of Institution

	Cajas	PATMIR	BANSEFI	Procampo / Oportunidades	Crédito a la Palabra
% Urban	65.1%	29.9%	66.7%	57.4%	0.0%
Age of Heads (average)	45.2	45.4	44.9	46.6	53.2
Education of Heads (max)	7.2	6.4	7.3	5.0	3.9
Both heads present?	77.8%	78.5%	74.4%	79.2%	70.0%
Receives remittances	2.6%	5.5%	5.2%	5.5%	1.7%
Owns Agricultural business	16.2%	28.6%	16.7%	42.5%	74.2%
Owns Non-ag business	33.2%	38.7%	26.8%	22.3%	24.2%
House has piped water	93.4%	79.6%	90.7%	86.5%	87.5%
Log value of household durables	8.7	8.1	8.3	7.9	8.7
Log monthly expenditures * 12	10.5	10.1	10.5	10.2	10.2
Sample size	3142	1496	246	764	120

[6] The survey asks for expenditures on groceries and other goods purchased regularly by the household over any period of time chosen by the household (daily, weekly, or monthly), and for expenditures on services such as telephone, electricity, water, etc., again over any period chosen by the household. We use these data to calculate monthly expenditures on goods and services which are typically purchased at least monthly. The expenditures do not include rent or imputed rent where the home is owned by household members. The survey also asks for expenditures on items like clothing and durable goods which are purchased less frequently. Non-response rates are higher for these items, so we do not use them in out measure of expenditures.

[7] The survey asks whether the household owns any of 11 household durable goods, including a washing machine, a television, a motorcycle, and an automobile. Households reporting ownership are then asked about the replacement cost of the item in question. The non-response rates on replacement costs are high. We replace missing values with the median response in the asset category given by responding households residing the same state.

[8] We use consumption data rather than income data because income tends to vary much more than consumption, especially in rural areas. Given the more stable monthly pattern, consumption provides a more accurate picture of the economic condition of the household.

log points lower than either the Caja or *BANSEFI* sample households. The expenditures of households participating in government social programs are slightly higher than the *PATMIR* sample households, but again, are well below the Caja or *BANSEFI* sample households. The pattern is generally similar with the estimated replacement value of durable goods owned by the household, though in the case of durable goods, households in the *Crédito a la Palabra* sample have somewhat higher average reported asset levels than do households in the *BANSEFI* sample.

Aside from the government program participants, the *PATMIR* households are most likely to own agricultural and non-agricultural businesses. *BANSEFI* has the lower percentage of households who are business owners. Recall that the table shows the data for both account holders and non-account holders in the baseline survey. Among account holders, the percentage of households with agricultural and non-agricultural businesses is even larger in all of the subsamples.

Table 4 shows the same information for institutions with high and low quality ratings[9] (measured in 2002),[10] households in the north, central and southern regions of Mexico, and

Table 4
Summary Data by Type of Institution
Households in Communities Served by Cajas Only

	Aprobado	B	C/D	North	Central	South	Very Small 1/	Small 1/	Medium 1/	Large 1/
% Urban	84.2%	63.1%	61.3%	83.6%	80.7%	35.0%	54.4%	68.8%	65.7%	77.3%
Age of Heads (average)	0.5	0.4	45.1	47.0	45.4	44.1	46.9	44.7	44.8	43.5
Education of Heads (max)	7.4	7.4	7.0	8.2	7.3	6.7	6.9	7.3	7.4	7.6
Both heads present?	78.1%	75.6%	78.9%	76.2%	78.0%	77.9%	78.9%	76.8%	77.8%	77.5%
Receives remittances	2.3%	2.1%	2.7%	2.1%	1.0%	4.6%	3.2%	3.1%	1.2%	2.4%
Owns Agricultural business	8.6%	8.8%	20.6%	9.2%	9.0%	29.1%	25.9%	14.8%	12.6%	5.5%
Owns Non-ag business	31.3%	34.9%	32.9%	28.3%	30.9%	38.4%	35.8%	32.1%	31.9%	32.2%
House has piped water	95.3%	94.4%	92.7%	95.0%	95.0%	90.4%	92.9%	92.7%	94.7%	93.9%
Log value of household durables	8.8	8.7	8.7	9.2	8.9	8.2	8.7	8.6	8.8	8.8
log monthly expenditures	10.6	10.5	10.5	10.7	10.6	10.2	10.4	10.5	10.6	10.6
Sample size	789	702	1216	528	1448	1110	954	1002	676	510

Note: 1/Size measured by the number of savings accounts in the institution. Categories are: 1) Very Samll, <1500; 2) Small, between 1501 and 10,000; 3) Medium, between 10,001 and 100,000; and 4) Large, > 100,000 accounts.

[9] Quality ratings evaluate the Caja's financial performance (liability, liquidity, capital, etc.) and institutional organization (internal control and governance). A letter is assigned to each Caja according to its evaluation results, ranging from *Aprobada* (Authorized) to B+, B, C or D (the worst possible rating).

[10] The 2002 quality measures are not available for all of the institutions represented in the household sample. More recent data (December 2006) are available. We use these later in the analysis of a separate survey administered to the financial institutions themselves.

households in communities served by institutions are various sizes. The sample on Table 4 is limited to households located in communities served by Cajas. The *PATMIR* sample is almost exclusively in the southern region, and all of the *PATMIR* branches in the sample were rated A (*aprobado*, or approved) or B at the time of the baseline survey. The Caja sample has the best representation across the subgroups used in Table 4.

There are surprisingly few differences in the households served by high- and low-rated institutions. The higher percentage of households with agricultural businesses served by institutions with lower financial ratings suggests that perhaps rural institutions have lower ratings, on average, than urban institutions. On the other hand, the differences by region are quite marked.[11] A much higher percentage of the surveys in the southern region are in rural areas. (Recall that the data on this table exclude the *PATMIR* and *BANSEFI* samples). Consistent with this, almost a third of the households in the south have agricultural businesses, compared with less than 10 percent of households in either the northern or the central regions. Education levels are highest in the north, but higher in the center than in the south. And both household durable asset ownership and expenditures on goods purchased at least monthly are lower in the south than in either of the other two regions. With regard to the size of the institutions, the smallest institutions serve more rural, agricultural households. Education levels, expenditures and durable asset ownership are all somewhat lower among households in communities served by the smallest institutions.

1.3 2007 Module on risk and confidence in institutions

In the 2007 round of the survey, a module measuring attitudes toward risk and confidence in institutions was added to the survey. In each household, the survey was administered to the same person who answered the household survey. Risk attitudes were obtained from a set of seven hypothetical lotteries. In three of the scenarios, the respondent was asked whether s(he) would prefer to receive 500 pesos for certain, or an uncertain payment determined by drawing a number between one and twenty. For example, in one question, the risky option paid nothing if the number 1 was drawn, 50 pesos if numbers between 2 and 16 were drawn, and 1,000 pesos if numbers between 17 and 20 were drawn. In another, the risky option paid zero if the number drawn was between 1 and 4, and 1,000 pesos if the number drawn was between 5 and 20. The expected value of the first gamble if 237.5 pesos, while the expected value of the second gamble is 800 pesos. Nevertheless, a significant minority of the respondents (29 percent) chose the risky option for the first question, and the safe option for the second. These responses suggest that at least some part of the sample may not have fully understood the options presented to them.

[11] The north includes the states of: Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Nuevo Leon, San Luis Potosi, Sinaloa, Sonora, Tamaulipas and Zacatecas. The Central region includes Colima, Distrito Federal, Estado de Mexico, Guanajuato, Hidalgo, Jalisco, Michoacan, Morelos, Nayarit and Queretaro. The south includes Campeche, Chiapas, Guerrero, Oaxaca, Puebla, Quintana Roo, Tabasco, Tlaxcala, Veracruz and Yucatan.

This added module also contained two other sets of questions. The first asked respondents to suppose they had received a windfall gain of between 500 and 1250 pesos, and asked how much of the gain they would put in the bank, how much they would spend on household consumption, invest in animals or equipment, etc. For each of the four amounts, respondents said they would place about 20 percent of the windfall in the bank. Not surprisingly, those with accounts opened by 2006 indicated they would put a larger percentage of the windfall in the bank. But 15 percent of those without accounts said they would put part or all of a 500 peso windfall in the bank, and 25 percent of those without accounts said they would put part of all of a 1250 peso windfall in the bank. These responses suggest that unbanked households are willing to open accounts in at least some circumstances.

The second set of questions asked respondents how much confidence they had in various groups of people (neighbors and other Mexicans) or in institutions (e.g., the press, the church, various government entities, and various financial institutions). These questions are straightforward and easily understood, and the response rates are high. There is a strong pattern in data in that respondents express decreasing confidence in each institution asked. So confidence in the press (asked fifth) is much higher than confidence in commercial banks and *cajas de ahorro* (asked 17th and 18th). This may be because people do in fact have more confidence in the institutions nearer to the top of the list. But it may also represent some fatigue an answering a fairly long series of closely related questions. It does not appear that the ordering of the questions was varied in the surveys, so we are not able to separate these two possibilities. We report more on the responses to the questions included in the risk and confidence module in Section 2.3 below.

1.4 2006 survey of institutions

In 2006, a survey was administered to the institutions in the panel survey. The survey was administered to a total of 134 institutions, and included questions on the organization of the institution, the characteristics of key personnel (age, gender, education level), policies for opening savings accounts and making loans (including fees, use of guarantors, and the like), the characteristics of clients, and the growth of the branch over the preceding five years according the various measures. A statistical appendix asked for detailed balance sheet data. Only about half of the surveyed institutions returned the statistical appendix, and none were completed entirely. (For this reason, we do not use the data from the statistical appendix in this report).

Not all of the institutions with clients in the baseline survey agreed to answer the institutional survey. Those declining to participate were replaced with other institution, where possible in the same communities. Similarly, the branches of *BANSEFI* with clients in the panel survey were not included in the survey because the policies governing accounts in the branches are centralized and cannot be changed at the discretion of the individual branches. These branches were replaced with other cajas in the same geographic areas. In the final sample, then, all of the institutions surveyed are located in or near the communities surveyed, but not all have clients in the survey.

Of the 134 branches targeted for the survey, only 107 completed the majority of the survey. 82 of these institutions correspond to institutions in the household survey. The other 25 are substitutes for *BANSEFI* branches and for other institutions who could not be interviewed. Keeping in mind the small size of the sample, the following section presents some results based on the responses from the institutional survey. Initially, we use data from 107 institutions that responded to the survey.[12] We limit the sample to the 82 institutions which can be matched to the household panel survey when we look at data on penetration rates later in the section. Table 5 presents some of the characteristics of the financial institutions according to their size. Size is measured by the number of savings accounts for the entire institution, regardless of the number in the particular branch which responded to the survey. Very small institutions have 1,500 or fewer accounts; small institutions 1,501 to 10,000 accounts; medium institutions 10,001 to 100,000 accounts; and large institutions more than 100,000 accounts.

There are some patterns in characteristics by size of institution. On average, institutions with more than 100,000 accounts report having higher profits (total earnings minus total expenditures), while both those with fewer than 1,500 accounts and those with more than 100,000 accounts charge lower fees for opening savings or time deposit accounts, pay higher interest rates on savings accounts, and require lower minimum initial deposits to open a savings or time deposit account. Their clients are more likely to own land, work in agriculture, and have had a member of the household migrated to the U.S. Institutions in the medium and large categories (that is, those with more than 10,000 accounts) are more likely to process remittances from abroad. Also, institutions in the largest category have the lowest loans-to-savings ratio and the lowest default rates on loans. Institutions with fewer than 10,000 accounts, on the other hand, tend to have more clients they classify as being poor and more clients who are non-agricultural business owners. The very smallest institutions, those with less than 1,500 accounts, are more likely to be in rural areas and be the only financial institution in their community.

Between 2004 and 2007, institutions of all sizes have increased their penetration rates among households in the panel survey sample. However, the rate of increase is much larger among the smallest institutions (16.7 percentage points), and declines monotonically with the size of the institution. This suggests that the smallest institutions may have benefitted most from the changes brought about by the *LACP*, or simply that they are doing a better job of outreach. We speculate that the *LACP* might have had a greater impact on the smallest institutions for two reasons. First, the increase in the regulatory structure generated by the *LACP* may have led to an increase in confidence, particularly in the smallest institutions. Larger institutions, particularly those operating a large number of branches over a large geographic area, are more likely to have had a sophisticated, electronic, accounting system even before the *LACP* was passed. The smallest institutions generally kept only paper account records, which might have been seen as easier to manipulate. Second, the accounting requirements might have forced the smallest institutions to improve their information systems, allowing them to handle a more rapid growth in accounts. Larger institutions, often operating with multiple branches, might have already had more sophisticated information systems

[12] The patterns in the data are qualitatively identical if the sample is limited to the 82 institutions which can be matched to the household panel survey.

Table 5
Summary of Institutional Survey Data

Size of Institution	Very Small	Small	Medium	Large
Observations	13	46	40	8
Average Size	840	4,671	29,736	474,434
Savings Account Opening Fee (Pesos) [1/]	304	534	551	71
Time Deposit Account Opening Fee (Pesos) [1/]	493	648	779	350
Minimum Initial Deposit Savings Account (Pesos)	63	198	77	28
Minimum Initial Deposit Time Deposit Account (Pesos)	1,225	2,197	2,397	500
Interest Rate Paid Savings Account	4%	3%	3%	4%
Receives Remittances Payments (%)	23%	41%	78%	50%
Change in Percentage of Households with Accounts	16%	10%	8%	9%
Interest Rate Agri-Business Loans	33%	28%	28%	24%
Interest Rate non-Agri Business Loans	33%	29%	31%	23%
Interest Rate Car/Machinery Loans	21%	18%	22%	23%
Interest Rate Mortgage Loans	30%	22%	23%	
Percentage Poor Clients	40%	30%	27%	29%
Percentage Land Owner Clients	67%	70%	63%	76%
Percentage Agriculture Main Activity Clients	52%	41%	28%	53%
Percentage Business Owner Clients	42%	39%	42%	29%
Percentage U.S. Migrant House Member Clients	45%	62%	35%	51%
Percentage Indigenous Language Clients	29%	17%	40%	23%
Assets per Client/Member (000 Pesos)	8.2	10.3	7.2	9.3
Loans per Client/Member (000 Pesos)	3.9	7.1	4.7	6.8
Deposits per Client/Member (000 Pesos)	5.6	7.3	4.7	8
Loans to Savings Ratio	1.3	2.3	1.3	0.8
Default Rate (Default Loans / Total Loans)	12	10.8	9.3	0.1
In a rural community?	54%	33%	20%	38%
Another Financial Institution in the Community?	85%	80%	93%	75%

Note: 1/Fees for opening accuonts include the quota charged to become a member. These fees may be refundable when the account is closed.

prior to the *LACP*. Alternatively, it may be that the largest institutions had already reached a much higher penetration rate in their communities at the time of the baseline survey. Unfortunately, we do not have data to differentiate between these possibilities.

In the Table 6, we show the changes in penetration rates by quality of institution. The data indicates that institutions of all quality levels (measured in December 2005) increased their penetration rates between 2004 and 2007. However, the institutions rated C or D in 2005 actually expanded most rapidly between 2004 and 2007. This may reflect the fact that these institutions experienced the largest improvement in financial practices over this period, something we explore in Table 7. Those rated B in 2005 expanded most slowly. Because larger institutions tend have better quality ratings, this is in part reflected in the size pattern shown on Table 5. What both tables suggest is that smaller/lower quality institutions are growing faster than larger/higher quality institutions.

Table 6
Institutions by Quality 2005 Quality Rating

2005 Rating	B+	B	C/D
Observations	25	75	23
Size	3,695	3,218	1,861
Change in Percentage with Accounts	12%	6%	17%
Is there another institution in the community	81%	85%	79%

Do institutions which grow more quickly also improve their financial indicators? In the table below, we analyze whether increases in quality ratings are correlated with positive changes in penetration levels. The data show that institutions that improved in their quality rating between 2005 and 2008 saw an increase on average in their penetration rate of about 9 percent. This was the same rate of increase as institutions whose quality rating remained unchanged. Only five institutions had lower quality ratings in 2008 than in 2005, but interestingly, institutions with falling quality ratings experienced a drop in penetration levels between 2004 and 2007. Since the quality improvement is measured between December 2005 and September 2008, perhaps the best interpretation of this pattern is that growth which is too rapid can cause financial strains on the institutions.

Table 7
Change in Quality 2005-2008

	Higher Grade	Same Grade	Lower Grade
Observations	73	42	5
Change in Percentage of Households with Accounts	9%	9%	-2%.

In sum, most of the financial institutions represented in the panel survey increased their penetration levels between 2004 and 2007. Although bigger institutions have lower fees and minimum balances and pay higher interest—factors which should allow them to expand more rapidly—they had smaller increases in their penetration levels over the period of the panel survey. The smallest institutions are more likely to serve poorer communities. They also have relatively low minimum deposit requirements and low fees to open a savings account. The smallest institutions expanded most rapidly. In terms of quality ratings, higher quality institutions tend to be larger, have moderate increases in penetration rates and are more likely to retain their initial quality rating, while low quality institutions tend to be smaller and have larger increases in penetrations rates.

2. Evolution of Accounts, 2003-2007

In this section, we analyze the opening and closing of accounts among households in the Panel Survey. While there are no exogenous shocks to financial access during the survey period which allow us to cleanly identify why certain households become banked, the data are well suited to differentiate the characteristics of those households which are banked and those which are unbanked. First, the baseline sample contains nearly equal numbers of randomly selected clients of popular sector financial institutions and randomly selected non-clients residing in the same neighborhoods. Second, between 2004 and 2007, the number of sample households transitioning from unbanked to banked is large. So even though we are not able to identify with great confidence a causal relationship household characteristics and use of financial services, we are able to provide a very clear description of who was banked, and who became banked over this period.[13] In this section, we address the following questions:

- What characteristics differentiate banked households from unbanked households in the baseline (2004) survey?
- Are the same characteristics associated with transition from unbanked to banked over the survey period, that is, between 2004 and 2007, or has the expansion of financial services reached new types of households?
- What role do risk aversion and trust play in determining which households open accounts?
- After controlling for household characteristics, do the characteristics of the financial institutions affect which households become banked?

[13] The number of households with accounts in 2004 who closed those accounts over the three follow-up survey years is much smaller. For this reason, we are not able to say as much about the types of households which are at risk of disconnecting from financial services.

We focus most of the analysis in this section on the balanced panel of 3,473 households surveyed from the first to the fourth round. This includes the 3,205 households surveyed in all four rounds and an additional 268 *PATMIR* households which were surveyed in rounds 1, 2 and 4. These 268 households were not surveyed in round 3 due to budget reasons. The sample of 3,473 households represents 60% of the baseline sample. As we discuss later in the section, the households dropping out of the sample differ in significant ways from the households in the balanced panel. However, the predicted probability of opening a bank account between 2004 and 2007 is similar for those dropping out of and those remaining in the sample. Thus, attrition does not appear to have a large impact on the overall estimates of use of financial services.

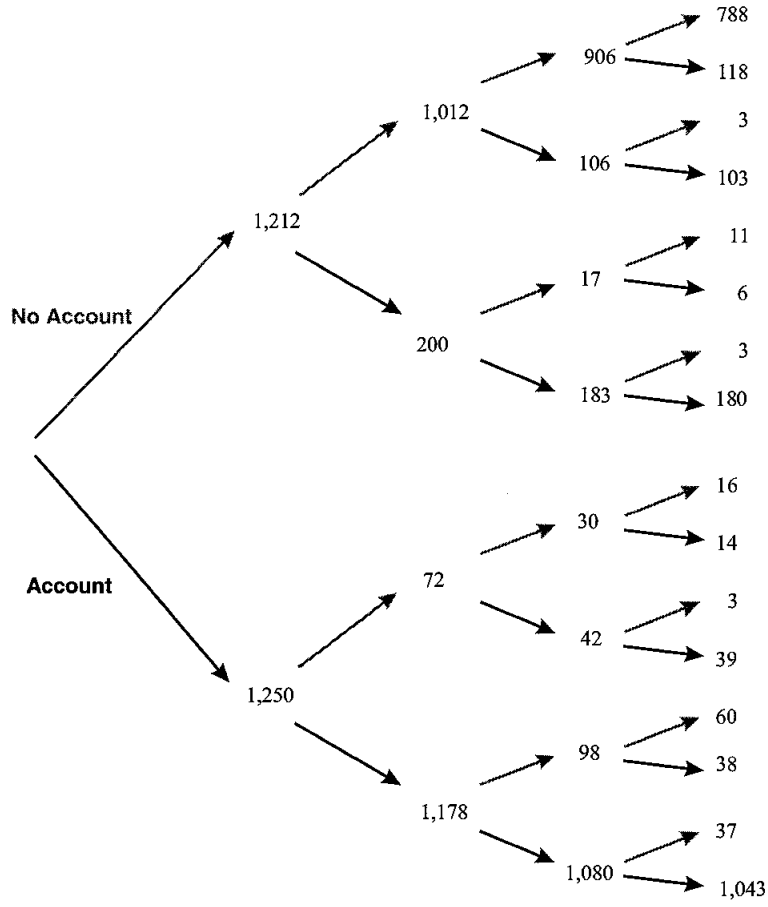
2.1 Changes in financial penetration rates

Figure 1 displays changes in the banking status of households during each of the four years of the survey, defined as whether a household has at least one account with a financial institution. For the figure, we use only households which were surveyed in all four rounds—that is, we eliminate the 268 *PATMIR* households who were not surveyed in round 3. We also eliminate the households in the subsamples of the *Procampo / Oportunidades*, and *Crédito a la Palabra* subsamples, since the timing of opening an account was determined by the programs rather than the households for these subsamples. The remaining sample of 2,462 households comes from communities served in 2004 by Cajas, *BANSEFI* and *PATMIR*.

On the figure, dark arrows indicate movement to banked status, while light lines indicate movement to unbanked status. The top half of the figure shows the households surveyed in each of the four rounds which did not have an account in the baseline survey. For example, of 1,212 households without an account in 2004, 200 (17 percent) opened an account before the 2005 survey. Of these 200 households, 183 continued to have an account in 2006, and 180 continued to have the account in 2007. On the other hand, 17 of the 200 opening an account before the 2005 survey had closed the account by 2006; 6 of those 17 households reopened the account again before the 2007 survey. In general, many more households move from unbanked to banked status than move from banked to unbanked status. Put another way, opening the first account is not as rare as closing the last account for a household.

Overall, the data suggest there was a very substantial increase in the percentage of households with bank accounts. Almost 36 percent of households without an account in 2004 had opened an account before 2007. Only 9 percent of households with an account in 2004 had no account in 2007. The percentage of households in the sample with at least one account increases by 14 percentage points, from 49 to 63 percent. The increase in penetration rate varies markedly by type of institution, and the changes measured in the panel data likely reflect different changes in the underlying population, or several reasons. First, for the Cajas and *PATMIR* branches, the sample was designed to include roughly the same number of clients and non-clients. Inn fact, in most of the sampled communities, clients likely represented less than half of the households in 2004. For households participating in *Procampo, Oportinidades*, or other government programs, the Caja or

Figure 1
Changes in Account Status by Survey Round



BANSEFI branches selected were ones where electronic transfers of monthly payments were planned. We address these issues in more detail below. But before estimating what the panel data imply about the overall increase in use of financial services, we look first at the changes in penetration rates in each of five distinct subsamples of the panel. These are shown on Table 8. This table shows the data from all of the subsamples in the balanced panel, including those for the government programs.

Table 8
Penetration by Sub-sample and Year
by Institution / Program

	2004	2005	2006	2007
Cajas (N=1825)	47.9%	54.8%	55.8%	61.4%
BANSEFI (N=137)	35.8%	44.5%	51.1%	60.6%
PATMIR (N=894)	46.1%	48.6%	1/	48.5%
Oportunidades / Procampo 2/ (N=531)	54.0%	59.4%	55.1%	60.4%
Crédito a la Palabra 2/ (N=86)	3.5%	36.0%	58.1%	73.3%

Notes: 1/Some households in the *PATMIR* survey were not surveyed during 2006. 2/A part of this subsample is served by *BANSEFI*, and a part by *Cajas*.

The largest group of households, representing just over half of the sample, are located in communities served by Cajas. 61 percent of households in these communities had one or more accounts with a financial institution in 2007, an increase of 13 percentage points from the 48 percent which had at least one account in 2004. The change in the penetration rate in the Caja subsample is similar to the change in the full sample. Households in communities served by the *PATMIR* initiative make up just over one-quarter of the sample, and are the second largest group of households. Here, Table 8 shows a much smaller change in penetration between 2004 and 2007. The percentage of households served by *PATMIR* institutions with at least one account increased from 46 percent in 2004 to 49 percent in 2007.

The slower increase in penetration rates among the *PATMIR* sub-sample is offset by a more rapid rate of increase in the three remaining subsamples: *BANSEFI*, *Procampo / Oportunidades*, and *Crédito a la Palabra*. Note that the data shown on the *BANSEFI* line of Table 8 do not include the participants in the *Procampo / Oportunidades*, and *Crédito a la Palabra* programs who are served by *BANSEFI*. Among *BANSEFI* clients who are not participants in these programs, penetration increased quite markedly, from 36 percent to 61 percent over the three years. The two remaining sub-samples are households participating in one or more government social programs.

In cooperation with the government agencies managing these programs, *BANSEFI* began paying some recipients through bank accounts opened in a branch of *BANSEFI* or other Caja. The increase in penetration for these subsamples is important to note, but should be viewed as distinct from the organic process of growth arising from the Cajas themselves. For those in the *Procampo / Oportunidades* sub-sample, electronic transfer began before the baseline survey in 2004. The increase in the penetration rate from 54 percent in 2004 to 60 percent in 2007 might therefore be interpreted as growth in addition to that generated by the electronic transfer program itself.[14] But in the case of the *Crédito a la Palabra* sub-sample, only 3 percent of households had an account in 2004. The rapid increase in penetration—to more than 70 percent by 2007—should be interpreted as a result of the electronic transfer program itself.

Table 9 breaks the sample in two additional dimensions. First, we compare changes in urban areas with changes in rural areas. Second, consultants working for *BANSEFI* graded the popular sector financial institutions in 2003 according to their financial balances. Not all of the institutions in the sample were graded, but among those that were, we split the sample into those which were judged to be the most sound (graded *aprobado*), those graded close to being ready to be certified (graded "B") and those which were less sound (graded "C" or "D"). The increase in penetration rates across the four rounds is smaller for those rated "*aprobado*" than for those rated in one of the three lower categories. There is little difference in the change in penetration rates among those rated B, C, or D. In urban areas, penetration in the sample increased 52 percent in 2004 to 61 percent

Table 9
Penetration by Sub-sample and Year
by Rural / Urban and Quality of Institution

	2004	2005	2006	2007
Urban (N=1331)	51.8%	57.5%	57.4%	60.9%
Rural (N=1505)	44.8%	51.6%	57.3%	58.3%
Institution Quality A (N=1203)	46.2%	52.9%	55.9%	53.6%
Institution Quality B (N=1203)	48.7%	56.1%	57.9%	61.8%
Institution Quality C or D (N=690)	53.5%	59.0%	59.6%	65.1%

Note: Sample for 2006 does not include 268 households in the *PATMIR* sub-sample who were not surveyed that year.

[14] We believe the process of bringing social program recipients into the banking system was potentially one of the most important aspects of the *LACP*. However, the panel data are not well suited for analyzing the impact of this part of the banking reforms, because the majority of program participants in the panel survey were banked before the 2004 baseline survey.

in 2007, while in rural areas the comparable increase was slightly larger, from 45 percent to 58 percent. Penetration among households served by higher quality institutions increased from 47 percent to 57 percent over the three years, while penetration among households served by lower quality institutions increased from 54 percent to 65 percent. Neither the urban / rural differences nor the high quality / low quality differences are large in magnitude or statistically significance.

What do the panel data suggest about the overall increase in financial penetration in the surveyed communities? The raw data on Tables 8 and 9 likely understate the increase because households with and without accounts in 2004 each represent 50 percent of the baseline sample (by design). Almost certainly, households with accounts actually represented much less than 50% of all households in the community in 2004. The increase in use of financial services by households which were unbanked in 2004 would therefore represent a process occurring in a larger share of the population. To obtain the estimated change in the penetration of financial services in the community, then, we should weight the households without accounts in 2004 to reflect their larger share of the population. If, for example, only 1 in 10 households in the surveyed communities had an account in 2004, then each surveyed household without an account should be weighted to represent nine times as many households as each surveyed household with an account.

Unfortunately, we have no hard data which allows us to estimate what the appropriate weights should be. Instead, we estimate the change in penetration by popular financial sector institutions using initial (2004) penetration rates ranging from 10 percent to 50 percent. These are shown on Table 10.[15] Assuming that one-third of households were banked in 2004—a percentage

Table 10
Change in Penetration of
Popular Sector Financial Institutions

Assumed Penetration 2004	Estimated Penetration 2007	Change in Penetration 2004-2007
10%	40%	30%
17%	43%	26%
25%	48%	23%
33%	53%	20%
50%	62%	12%

Note: Sample include Cajas, *BANSEFI* and *PATMIR* branches, but excludes participants in the *Procampo / Oportunidades* and the *Crédito a la Palabra* programs.

[15] Twenty percent appears to be a reasonable estimate for the 2004 penetration rate. A *BANSEFI* census of popular sector financial institutions conducted in 2002 indicated there were about 4.4 million separate accounts in these institutions at the time. The 2000 population census in Mexico indicates there were just over 22 million households in Mexico in 2000. Of course, some households will have multiple accounts, and penetration in and around Mexico City (where little of the panel survey sample is located) is particularly high. Offsetting this is the fact that penetration rates in communities with financial institutions in 2004 (like all of those included in the baseline survey) will be higher than penetration rates in communities without financial institutions.

which seems likely to be too high—the panel data suggest that penetration increased from 33 percent to 53 percent, or by 20 percentage points. This represents quite a substantial change. Using lower initial penetration rates results in even higher estimates of the growth of financial services in the surveyed communities.

There are two caveats which should be kept in mind when interpreting the estimates shown on Table 10. First, since every household in the sample is in a community with at least one financial institution, the table may overstate the increase in penetration of financial services for the country as a whole. Households in communities without financial institutions are less likely to have opened accounts. Second, there is a possibility that use of financial services by households in the sample was subject to "Hawthorne effects." By focusing the household's attention on issues of financial services, the survey itself may have increased the probability an unbanked household decided to open an account. Lacking comprehensive national data on the use of financial services over this period, we have no way of knowing how much either of these factors affects our estimates of the increase in penetration rates.

2.2 Characteristics of households using financial service

The observed use of financial services by households implies both that the services were offered by one or more institution and that the household demanded the services. In this section, we analyze the characteristics of households which are associated with having an account in a popular financial sector institution. The design of the baseline survey is well suited to uncovering the factors which differentiate households with and without accounts. Assigning a direction of causation is more problematic. For example, if we find that wealthier households are more likely to have accounts at formal financial institutions, do we interpret this as indicating that wealth increases the demand for financial services, or that access to financial services allows households to accumulate wealth? We alleviate this concern somewhat in the panel data by using characteristics of the households measured at the time of the baseline survey to categorize households adding accounts between 2003 and 2007. But the comparison of characteristics associated with baseline use of financial services and the characteristics associated with the incremental use of financial services is in itself of interest. This comparison tells us something about the nature of the expansion in the popular sector financial sector. With this in mind, we present both the baseline cross section and the intertemporal analyses here.

What are the characteristics of households that had accounts in 2004? We will divide the discussion into factors which are likely to have been determined by the time the account was first opened, and those which are likely to have been determined (at least in part) after the account was opened. The age and education of the household head(s) are examples of the former. Income and business ownership are examples of the latter. Table 11 shows the results of probit regressions for use of financial services. The dependent variable is defined as one if the household has an account with any financial institution, and zero otherwise. The table shows the marginal effect of a change in each independent variable. The first two columns use data from the baseline survey,

and the third column uses data from the 2004 and 2007 surveys. The sample in the third column is limited to households without an account in 2004. Thus, the dependent variable indicates a change in status from unbanked to banked between 2004 and 2007.

Table 11
Characteristics of Account Holders

	Account 2004	Account 2004	Households opening account, 2004 to 2007
6 years of schooling	0.104***	0.068***	0.052*
	(0.023)	(0.024)	(0.031)
7-9 years of schooling	0.156***	0.095***	0.074**
	(0.027)	(0.029)	(0.037)
10-12 years of schooling	0.347***	0.250***	0.188***
	(0.027)	(0.033)	(0.056)
More than 12 years of schooling	0.459***	0.365***	0.248***
	(0.022)	(0.034)	(0.090)
Average age of heads	0.030***	0.021***	0.006
	(0.004)	(0.004)	(0.004)
Average age of heads squared	-.0002***	-.0002***	0.000
	(0.00003)	(0.00004)	(0.000)
Head speaks indigenous language	0.124***	0.177***	0.005
	(0.020)	(0.021)	(0.028)
Female head in labor force		0.041*	0.042
		(0.022)	(0.029)
Household receives remittances (International)		0.058	-0.102*
		(0.043)	(0.051)
Own agricultural business		0.052**	0.095***
		(0.021)	(0.027)
Own non-agricultural business		0.056***	0.039
		(0.020)	(0.027)
Log durable assets (value)		0.067***	0.030***
		(0.007)	(0.009)
Log expenditures		0.065***	0.051***
		(0.016)	(0.020)
Number of observations	3472	3464	1815
R-square	0.07	0.11	0.03

Notes: Robust standard errors in parentheses. *Means significant at 10% level. **Means significant at 5% level. ***Means significant at 1% level.

Several demographic characteristics are strongly associated with being banked. Recall that the sample is limited to households located in communities with popular sector financial institutions, so these differences can be interpreted as being driven by demand for financial services, or by the effect of marketing efforts by the financial institutions. Households whose heads have higher levels of formal schooling are more likely to be banked.[16] The excluded education group is households where both the head and spouse (if present) have less than 6 years of formal schooling. Compared with this low-schooling group, households where the head or spouse has at least six years of schooling are 10 percentage points more likely to have an account, and those with seven to nine years of schooling are 16 percentage points more likely to have an account. The effect of high school or some post-high school education is even larger. Households where at least one head has completed high school are 35 percent more likely to have an account, and those where at least one head has some post-high school education are 46 percent more likely to have an account. More than 83 percent of households in the highest education group had an account in 2004.

There is also a strong pattern with respect to age. The probability of having an account in the baseline survey is increasing in the age of the household head until about age 75. The impact of an additional year of age decreasing as the head grows older. Note that since few households close accounts once they are opened, a similar pattern with respect to age could be generated by a hazard function with some random probability of opening an account in each year. Alternatively, since income and wealth increase with age, on average, the pattern may reflect an increase in demand for financial services as families age. Finally, a somewhat more surprising result is that the likelihood of having an account in the baseline is about 12 percentage points higher if the head or spouse speak an indigenous language.

The second column adds several variables for which the direction of causation is much harder to discern. Of note, we find that those who own an agricultural or non-agricultural business, and households with higher expenditure levels and more assets, are more likely to have an account. Households operating an enterprise are about 5 percentage points more likely to have an account. Expenditures and assets have somewhat larger effects. A one standard deviation increase in expenditures (about 3 log points) is associated with a 20 percentage point increase in the probability of having an account. A similar increase in household assets (2.5 log points) increases the likelihood of having an account by 16 percentage points.[17] Indicators of whether the female head works and whether anyone in the household receives remittances from outside of Mexico are positively associated with having an account, but the effects are statistically much weaker. We note that both education and age are still strongly associated with having an account, though both effects are reduced in magnitude by 20-30 percent. This is likely because education and age are positively

[16] We define schooling as the maximum of the schooling attainment of the household head and spouse when both are present.

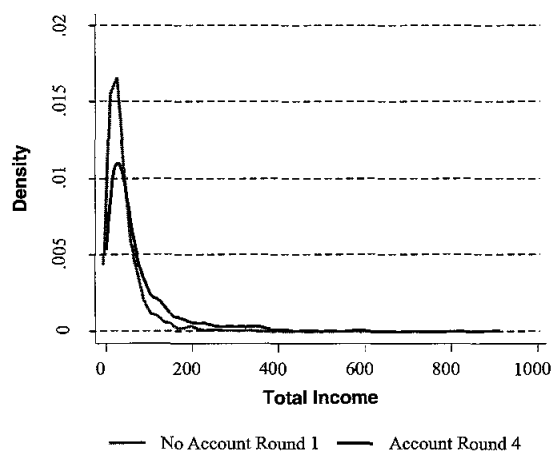
[17] Assets are valued at replacement costs by the respondents. Where the value is missing, we use the median response from households owning and reporting a value for the asset. Even so, assets are missing for 7 percent of the households. To retain the observations, we replace the missing data with zeros and include in the regression a dummy variable indicating the asset data are missing. We follow a similar procedure for the nine percent of the households which have missing expenditure data.

correlated with income and assets. Failure to control for the latter in the first regression may result in an upward bias on the coefficients.

In the third column, we examine the factors associated with households which did not have an account in the baseline sample, but which opened an account before 2007. This regression can be interpreted as telling us something about the nature of the expansion in the sector. In the baseline survey, we find that wealthier, higher educated households are more likely to have accounts. Among those without accounts in the baseline, are the wealthier, more highly educated households also more likely to open an account during the panel period? Or did the financial institutions reach further down the education and income spectrum to acquire new clients? The probit reported in Column 3 of Table 11 suggests an affirmative answer to the first question. Opening an account is positively associated with education, assets and expenditures (both measured at the baseline). The coefficients are somewhat smaller in Column 3 than in Column 2, but the mean of the dependent variable is also smaller. Only about a third of those with an account in 2004 had one in 2007, while half of the baseline sample had an account. Relative to the dependent mean, then, the impact of education, expenditures, and wealth are similar in the baseline sample and the sample measuring new clients.

Figure 2 shows the relationship between income and opening an account in a slightly different way, but tells a similar story. The figure shows the kernal density of the distribution of income among households without an account in either 2004 or 2007, compared with the distribution of income among households opening an account between 2004 and 2007. The latter is shifted to the right, and the former has much more mass in the left-hand tail. This confirms the fact that new clients came disproportionately from among the higher income households without accounts in 2004.

Figure 2
Kernel Density Estimate



kernel = epanechnikov, bandwidth = 5.6229

We find similar patterns when the sample is split between urban and rural areas (see Table 12). Age, wealth, and expenditures all have strong positive associations with baseline accounts in both urban and rural areas. The association with education is much stronger in urban areas than in rural areas. Business ownership has no significant effect, and a lower measured effect, in rural areas. In terms of accounts opened between 2004 and 2007, only education and household assets have any significant association in urban areas. Wealth, expenditures, and especially ownership of an agricultural business are all significantly associated with opening an account among rural households.

Finally, a note on the effect of attrition on the estimates of changes in financial penetration discussed in Section 2.1 above. As we saw in section 2, there was a substantial amount of attrition from sample over the four survey waves. Moreover, the attrition was not random. More educated, higher wealth households were more likely to drop out of the sample. Since these characteristics are associated with higher probabilities of opening an account, this suggests that attrition might lead to an upward bias in the change in financial penetration estimated from the balanced panel. However, since business owners were less likely to drop out, and more likely to open an account, this suggests that the estimate might be biased downward. We estimate the net effect of attrition on the estimated increase in financial penetration by using the regressions coefficients from Column 3 of Table 11 to predict whether the households who dropped from the sample opened accounts between 2004 and 2007. We find that the attriting households were slightly more likely to open an account than were the households remaining in the sample for the fourth round. The difference was small—34 percent of attriting households are predicted to open an account compared with 33 percent of non-attriting households. It is important to note that this estimate is based only on measured characteristics. There may be unmeasured characteristics associated with both opening an account and dropping out of the sample. Nevertheless, the measured variables suggest that attrition did not have a large impact on the increase in penetration estimated from the data.

2.3 The role of trust and attitudes toward risk

Depositing money in a financial institution requires trust in the institution. The *Ley de Ahorro y Crédito Popular* was designed in part to increase the security of deposits and hence the level of trust in popular sector financial institutions by providing a regulatory structure for the sector. How much should we expect an increase in the trustworthiness of institutions to increase the demand for financial services? Since the law was rolled out all at once, there is no direct way to measure that. However, households participating in the panel survey were asked how much they trust friends, neighbors and various local and national institutions. The relationship between these measures of trust and the use of financial services is interesting because that relationship provides indirect evidence on the importance of trust in the institutions. Of course, we should expect account holders to have more trust in financial institutions themselves. They have more experience dealing with them, and personal experiences on which to base that trust. Moreover, they have indicated at least a minimal level of trust by choosing to open an account. So their responses to questions related to generalized trust (friends, neighbors) or trust of government institutions are arguably more interesting in this context than the responses related to trust of financial institutions.

Table 12
Characteristics of Rural and Urban Accout Holders

	Urban		Rural	
	Account 2004	Households opening account, 2004 to 2007	Account 2004	Households opening account, 2004 to 2007
6 years of schooling	0.056	0.085	0.045	0.037
	(0.041)	(0.054)	(0.036)	(0.045)
7-9 years of schooling	0.139***	0.102*	0.020	0.006
	(0.046)	(0.059)	(0.043)	(0.054)
10-12 years of schooling	0.297***	0.238***	0.101	0.172**
	(0.045)	0.086	(0.062)	(0.086)
12+ years of schooling	0.353***	0.231*	0.316***	0.176
	(0.049)	(0.143)	(0.060)	(0.133)
Average age of heads	0.026***	0.005	0.015***	0.003
	(0.006)	(0.007)	(0.006)	(0.007)
Average age of heads squared	-.0002***	0.000	-0.0001**	0.000
	(0.00006)	(0.00007)	(0.000)	(0.000)
Head speaks indigenous language	0.274***	0.066	0.137***	0.017
	(0.037)	(0.060)	(0.029)	(0.038)
Female head in labor force	0.034	-0.036	0.091**	-0.001
	(0.039)	(0.051)	(0.039)	(0.053)
Household receives remittances (International)	0.025	0.085	0.181***	-0.152*
	(0.084)	(0.115)	(0.058)	(0.072)
Own agricultural business	0.109**	0.024	0.013	0.096***
	(0.043)	(0.063)	(0.029)	(0.036)
Own non-agricultural business	0.087***	0.036	0.046	0.054
	(0.033)	(0.047)	(0.031)	(0.041)
Log durable assets (value)	0.084***	0.035**	0.056***	0.037***
	(0.013)	(0.017)	(0.011)	(0.014)
Log expenditures	0.070**	0.039	0.055***	0.096***
	(0.031)	(0.037)	(0.024)	(0.030)
Number of observations	1329	641	1502	828
R-square	0.17	0.04	0.08	0.05

Notes: Robust standard errors in parentheses. *Means significant at 10% level. **Means significant at 5% level. ***Means significant at 1% level.

What do the data suggest? Table 13 shows the average responses of the full sample, and then splits the sample of those without account in 2004 into those who opened an account between 2004 and 2007 and those who did not.[18] Respondents were asked to report trust on a scale of 1 to 5, with 1 representing "much confidence" and 5 representing "no confidence." Confidence in neighbors, other Mexicans and government institutions are uniformly higher among those who opened accounts between 2004 and 2007 than among those who did not. The differences are not large in magnitude, but they are statistically significant. For example, those opening account given and average score of 1.37 in trust of neighbors, while those not opening account have an average score of 1.48. Confidence in local government appears to be more important than confidence in national government.

Table 13
Confidence in People and Institutions

Trust in:	Full Sample	Without Account 2004: Account, 2007	Without Account 2004: No Account, 2007	p-value, difference
Neighbors	1.44	1.37	1.48	**0.01**
Other Mexicans	1.75	1.70	1.81	**0.04**
The Church	1.99	1.92	2.03	**0.05**
The Press	2.52	2.55	2.47	0.28
The National Government	3.29	3.25	3.34	0.20
The State Government	3.44	3.36	3.52	**0.02**
The Local Government	3.60	3.69	3.50	**0.01**
The Bureaucracy	4.07	4.01	4.11	*0.09*

Note: Question asked: "How much confidence do you have in...". Numbers shown are average responses, with 1 representing "much confidence" and 5 "no". p-values shown for t-test of difference between Columns 2 and 3. Bold indicates significance at the .05 level or better, italics significance at the .10 level.

The fact that trust is correlated with opening an account suggests that potential depositors see some risk in using financial institutions. Are those who are more willing to take risks therefore more likely to open an account as well? The 2007 round of the survey asked respondents whether they preferred certain payoffs or gambles in a variety of scenarios. For example, respondents are asked whether they prefer 500 pesos with certainty, or a gamble based on drawing a random number between 1 and 20. The gamble would pay nothing if the number 1 were drawn, 50 pesos if

[18] The table shows data from the sample of unbanked households in all of the survey communities. But the results are very similar if the sample is limited to households in communities served by Cajas.

a number between 2 and 16 were drawn, and 1,000 pesos if a number between 17 and 20 were drawn. Note that the expected value of this gamble is 287.5 pesos, less than the certain prize. Yet 43 percent of the respondents reported a willingness to take the gamble, suggesting that almost half of the respondents are not risk averse, but risk loving. (Or, alternatively suggesting that some respondents did not fully understand the choices being offered to them.[19]) The evidence that attitudes towards risk, as measured by the seven choices offered, matters for opening an account is weak. Only one of the seven gamble correlates with opening an account between 2004 and 2007. In that gamble, respondents were offered 500 pesos for certain, or a 75 percent chance of winning 1,000 pesos. Among those without an account in 2004, 44 percent accepted the gamble. Those accepting this gamble were 6 percentage points more likely to open an account between 2004 and 2007 (40 percent vs. 34 percent, p=.03).

Table 14 shows that both the trust measures and the one measure of risk do remain even after controlling for education, age and household wealth. We run the same regression shown in Column 3 of Table 11, but display on the table only the additional variables measuring trust and risk. We show the results for trust in neighbors and trust in local government, but the significance of the trust measures in the regression is the same as for the t-tests shown in Table 13, except that trust in the bureaucracy is not quite significant at the .10 level. Similarly, no measure of attitudes toward risk is significant in a regression controlling for other household characteristics except the 75 percent gamble reported in Table 14.

Table 14
Trust and Risk

	Households opening account, 2004 to 2007	Households opening account, 2004 to 2007	Households opening account, 2004 to 2007
Trust in Neighbors	-0.050*** (0.019)		
Trust in Local Government		-0.031*** (0.012)	
Would take 75% gamble			0.060** (0.027)
Number of observations	1333	1330	1312
R-square	0.04	0.04	0.04

Notes: Trust is measured on a scale of 1 to 5, with 1 indicating "much confidence" and 5 indicating "no confidence." The gamble indicates respondents expressed a preference for taking an option of 75% chance of receiving 1,000 pesos and a 25% chance of receiving nothing rather than an option of receiving 500 pesos for certain. *Means significant at 10% level. **Means significant at 5% level. ***Means significant at 1% level.

[19] More than a fifth of respondents (22 percent) say they would take the gamble with an expected value of 287.5 pesos, but not take the gamble with an expected value of 750 pesos. This combination is difficult to interpret without assuming that some respondents did not fully understand the choices being offered.

In sum we do find evidence that individuals who express more confidence in the trustworthiness of people and institutions are more likely to have opened an account between 2004 and 2007. This suggests that the regulatory structure established under the *LACP* might have played a role in increasing the demand for popular sector financial services among households in the survey communities. By improving the operation of the financial institutions, the regulatory structure might have lowered the threshold of trust required for a household to open an account. The evidence that attitudes toward risk matter is much weaker. Only one of seven questions related to risk is able to divide those who opened accounts and those who did not in a significant manner. Given the pattern of responses in the data, it is not clear whether these questions are measuring the effect of risk, or alternatively measuring numeracy and the ability to understand a gamble tilted heavily in ones favor.

2.4 Controlling for the policies of local financial institutions

Did the policies of the institutions affect the likelihood that unbanked households opened an account? For example, did institutions with lower account fees, or lower minimum savings balances expand more rapidly during the panel period? We examine this by combining the institutional data with the household panel data. In doing so, we focus on the sample of households without an account in the baseline sample. Note that these households may open an account with an institution other than the one serving the households with accounts in the baseline. The institutional survey did not attempt to cover all of the institutions in a community. So there will be some noise in the data on institutional features, except in communities served by only a single institution.

Table 15 shows the results of regressions including several institution-level variables.[20] The sample is limited to households in communities served by Cajas, which are those most likely to be included in the institutional survey. The standard errors are clustered at the community level, to reflect the fact that the institutional data are measured at a more aggregate level. The regressions include all of the variables included in the regression of Table 19, Column 3, though these are not shown on the table. Finally, note that the sample sizes are reduced substantially because we have no information on institutions in many of the *municipios* which are part of the panel survey.

While the institutional characteristics generally have expected signs, none are significant at conventional levels. Institutions with fees above the median level add fewer new accounts (among the households in the panel survey) during the 2004-2007 period. Those whose managers have higher schooling levels—at least some college—add more accounts, and larger institutions add

[20] We tested for the importance of several other institutional characteristics as well, including the number of steps potential clients must complete before becoming a member, training of managers since 2000, and changes in loan policies since 2000. As with the ones shown in the table, the characteristics generally have the expected signs, but none were statistically significant.

fewer accounts. Given that these variables are measured with considerable noise—ideally, we would have information on every institution in the community—these results suggest that the policies of institutions may affect their ability to add accounts. But the lack of significance prevents us from reaching more definitive conclusions.

Table 15
Controlling for Institutional Policies

	Households opening account, 2004 to 2007	Households opening account, 2004 to 2007	Households opening account, 2004 to 2007
Institution has above median fees	-0.050		
	(0.049)		
Schooling of general manager		0.052	
		(0.048)	
Institution has more than 7,500 accounts			-0.064
			(0.054)
Number of observations	661	661	633
R-square	0.03	0.03	0.03

Notes: Regression includes variables shown on Table 11, Column 3. Fees are those required in order to open a savings account, including the membership fee. The variable measuring the schooling of the manager is 1 if the manager has at least some college, and zero otherwise. All standard errors are clustered at the level of the *municipio*.

2.5 Is the use of formal financial institutions associated with business ownership or informal savings?

If financial services are important for small scale enterprises, then perhaps there is a correlation between opening account and opening a business. Using the formal financial system may also be associated with less use of informal financial services. We examine the correlation between opening an account on the one hand and participation in *Tandas* and ownership of livestock on the other.

As the regressions above indicate, ownership of both agricultural and non-agricultural businesses is associated with use of formal financial services in the baseline data, and having an agricultural business in 2004 is associated with opening an account between 2004 and 2007. But are households who open an account between 2004 and 2007 also more likely to start a business during this period? We find little correlation between opening an account and opening either an agricultural business (6.7 percent vs. 5.9 percent, p=0.50) or a non-agricultural business (11.5 percent vs. 9.5 percent, p=0.23).

We find that participation in *Tandas* is positively associated with use of formal financial services. Those with an account in the baseline survey are more likely than those without an account to say they participate in at least one *Tanda* (18.7 percent vs. 13.4 percent, p<.01). The

association between participating in a *Tanda* and having an account holds for clients of all of the surveyed types of popular sector financial institutions. For example, 20 percent of Caja clients participate in at least one *Tanda*, compared with 15 percent of non-clients living in communities served by Cajas ($p<0.01$). The comparable percentages for clients and non-clients of *PATMIR* institutions are 20 percent and 12 percent, respectively ($p<0.01$). Moreover, among those without an account in round 1, households opening an account are more likely to participate in at least one *Tanda* in round 4 (17.3 percent vs. 13.7 percent, $p=.04$). Thus, there is no evidence that formal financial services substitute for *Tandas*. Rather, the use of both formal financial institutions and Tandas may both respond to demand for financial services.

Among rural households, livestock is a common means of saving. Does opening a savings account in a formal financial institution reduce the likelihood a rural household keeps livestock? We examine this in among relationship in rural households without an agricultural business, since we might expect financial services and livestock to be positively correlated in agricultural businesses. In fact, we find no association, either in the baseline data or in the sample of those without accounts in 2004 between opening savings accounts and keeping livestock. In the baseline data, those with accounts are slightly more likely to own some livestock, but the difference is not significant (36.2 percent vs. 31.9 percent, $p=0.31$). Among those without accounts in 2004, livestock ownership in 2007 is equally likely among households opening and account and households not opening an account before that year (33.5 vs. 33.2 percent). Similarly, we find no relationship when we limit the livestock to chickens and other fowl, which might be seen as the easiest form of savings through livestock, or when we use reported values of livestock in place of ownership.

In sum, we find no relationship between opening an account and starting a business. We find that informal savings mechanisms are, if anything, positively correlated with the use of formal financial services. In particular, those with an account in 2004 and those opening an account before 2007 are more likely to participate in at least one *Tanda*. In rural areas, there is no relationship between use of formal financial institutions and ownership of livestock.

3. Loans

A substantial portion of households with accounts at popular sector financial institutions also take loans from those institutions. In the 2004 baseline survey, for example, just over 60 percent of households with accounts in Cajas report having taken out a new loan sometime during the 12 months leading up to the survey. Among those with accounts in institutions affiliated with the *PATMIR* program, 43 percent of account holders had taken a loan during the same period of time.[21] The panel survey gathered information on up to three loans in each household. The data include the stated use of loan funds, the size of the loan, the interest rate and the term. In this section, we

[21] The *BANSEFI* households are excluded from this section because *BANSEFI* does not currently make loans. Participants in the *Procampo / Oportunidades* programs are also excluded from the main analysis, because there are too few of those households with Caja accounts to undertake a detailed analysis.

examine the distribution of loans in each of the four years of the panel survey. We address the following questions:

- How has the proportion of households taking loans changed during the period following the passage of the *LACP*?
- Have the terms of loans changed?
- For what purposes do households take loans?

3.1 Evolution of loans

The percentage of households in the sample reporting a new loan in the year prior to each survey is much larger in the 2004 than in any other survey year. In both the Caja and *PATMIR* sub-samples, one-third fewer households report having a new loan in 2006 compared with 2004. In both subsamples, the percentage taking loans rebounds in 2007, but in the Caja communities, the percentage of sample households reporting new loans is lower 2007 than in 2004. Table 16 shows these patterns, and also breaks each of these samples into households with and without accounts in 2004.

Not surprisingly, very few households without accounts in 2004 report having loans from formal institutions in 2004. Recall, however, that a third of households without accounts in 2004 opened an account before 2007. The data in Table 16 suggest that these households not only opened savings accounts, but also took out new loans. One in six households without an account in 2004 reported taking a new loan in the year before the 2007 survey in Caja communities, while 1 in 8 similar households did so in the *PATMIR* communities. On the other hand, the proportion of households having accounts in 2004 who took a new loan declines over the three years. In the Caja communities, 61 percent of the 2004 account holders reported a new loan in 2004, but only 38 percent reported a new loan in 2007. In the *PATMIR* communities, the fall was less dramatic, but 44 percent of 2004 account holders had a new loan in 2004, while 35 percent of these households had a new loan before 2007.

Though not shown on the table, we also have a small sample of 254 households in Caja communities which are participants in the *Procampo* or *Oportunidades* program. The percentage of these households taking loans remains quite low and flat between 2004 and 2006, increasing from 2.4 percent to 3.1 percent during this period. However, there is a notable increase in the percentage of these households taking loans between 2006 and 2007, when 9.8 percent of the households report a new loan.

As with estimating the increase in financial penetration measured by savings accounts, we need to assign weights to the samples with and without accounts in 2004 in order to estimate the change in penetration of loans. The weights affect the estimated loan penetration because households with accounts in 2004 have falling loan penetration between 2004 and 2007, while

Table 16
Loans in Caja Communities

	2004	2005	2006	2007
Any formal loan	31.7%	24.5%	19.5%	26.0%
Any formal loan, with baseline account	60.5%	41.0%	31.5%	37.7%
Any formal loan, no baseline account	5.2%	9.4%	8.4%	15.2%

Loans in PATMIR Communities

	2004	2005	2006	2007
Any formal loan	21.0%	18.6%	12.1%	22.7%
Any formal loan, with baseline account	43.9%	34.0%	20.3%	35.2%
Any formal loan, no baseline account	1.5%	5.3%	5.0%	12.0%

Notes: The data represent any formal loan in the past 12 months from a popular sector financial institution, commercial bank, or *SOFOL*. More than 90% of loans are from *SACP* institutions. The Caja sample is a balanced panel of 1,825 housheolds, 875 of which had accounts in 2004. The sample excludes the Caja households participating in the *Procampo / Oportunidades* program. The *PATMIR* sample is a balanced panel of 894 households.

households without accounts in 2004 have rising loan penetrations between 2004 and 2007. The sample was designed so that half of the surveyed households had accounts in the 2004 survey. But the actual penetration of financial institutions in the surveyed communities was almost certainly less than 50 percent in 2004. Therefore, the part of the sample with falling penetration rates was almost certainly oversampled in 2004 relative to the part of the sample with rising penetration rates. Assuming a very high initial penetration rate of 33 percent, the data on Table 16 suggest that the percentage of all households in Caja communities which took loans was almost the same in 2007 (22.7 percent) as in 2004 (23.6 percent). In *PATMIR* communities, the percentage of all households taking loans increased from 15.6 percent in 2004 to 19.3 percent in 2007 even under this assumption. At what is perhaps a more reasonable penetration rate of 20 percent, the percentage of households in the served communities taking loans would increase from 16.3 percent to 19.7 percent in Caja communities and from 10.0 percent to 16.6 percent in *PATMIR* communities. Thus, while the most casual look at the data suggests falling loan portfolios over the 2004-2007 period, the data actually suggest that loans made to households by popular sector financial institutions were increasing over this period.

3.2 Loan terms and uses

Most loans made by popular sector financial institutions are short term loans, with terms of one year or less. Table 17 shows the distribution of loan terms, and Table 18 shows the purpose of the loans, as reported by households for both 2004 and 2007.

Table 17
Distribution of Formal Loan Terms (%)

	2004	2005	2006	2007
≤ 3 months	8.4%	9.2%	7.6%	9.9%
>3 months, ≤ 6 months	17.8%	21.1%	21.6%	24.6%
>6 months, <1 year	14.6%	13.4%	10.9%	8.5%
1 year	31.1%	32.5%	32.2%	31.2%
>1 year, ≤ 2 years	23.6%	18.3%	18.1%	17.4%
>2 years	4.6%	5.6%	9.6%	8.2%
Loans with reported terms	760	607	459	695

Note: Data on all reported loans from formal financial institutions.

Table 18
Uses of Formal Loan

	2004	2005	2006	2007
Medical emergencies	11.9%	12.7%	12.3%	13.9%
Household spending	21.4%	28.4%	19.4%	20.5%
Home construction / repair	21.7%	18.2%	21.6%	20.7%
Vehicles	5.4%	4.3%	4.6%	3.3%
Agriculture	11.1%	9.2%	6.9%	7.8%
"Invest" / Non-ag business	14.4%	17.6%	20.2%	15.1%
Study	4.4%	5.8%	4.6%	10.4%
Percent of all loans categorized	90.3%	96.2%	89.6%	91.7%

Note: Data on all reported loans from formal financial institutions.

The first obvious pattern from the tables is that the vast majority loans made by popular sector financial institutions are short-term loans. A quarter of the loans in 2003 and more than a third of loans in 2007 are for periods of six months or less. Three quarters of loans in both years have terms of 12 months or less. Even where the stated purpose of the loan is housing construction

or repair, the median term is 12 months, and only 11 percent of loans are for periods of three years or longer. The data do suggest, however, that longer term loans are becoming more common. While only 4-5 percent of loans made during 2004 and 2005 were for periods exceeding 2 years, 8-9 percent of loans made in 2006-2007 had terms of more than 2 years.

What do households say the loans were used for? About a third of those with loans say they used the proceeds for "household expenditures" or medical emergencies. In another quarter of the cases, households report using loans for investment in either agriculture or non-agricultural businesses. Housing construction or repair is the purpose for another quarter of the loans. Purchase of vehicles, education and other miscellaneous uses make up the rest of the loan uses. Table 18 shows some movement in the purpose of loans from year to year, but there appears to be no clear trend across time.

There is similarly little trend in the interest rates reported by households. The median interest rate is 30 percent per year in 2004 and 24 percent per year for each of the other three years. At the 25th percentile, households pay between 14 and 18 percent annually, while at the 75th percentile, households report paying 36 percent per year. There appears to be some noise in the reported interest rates, so the mean interest rates are less meaningful.

Finally, in Table 19, we report the results of regressions which indicate the extent to which loan terms – the length of the loan and the interest rate charged—varies according to the characteristics of the households. These regressions are limited to data from rounds 2 through 4. The independent variables are measured at the baseline. While the regressions suffer from the familiar issues of endogeneity, they do suggest that the characteristics of individual households matter. More educated borrowers have loans for longer terms, and appear to pay a lower interest rate on those loans. (The latter effect is statistically weak). Wealthier borrowers, measured by ownership of household durable assets, also borrower for longer periods at lower interest rates. Agricultural loans are made for shorter terms, but also carry somewhat lower interest rates.

In sum, loans from popular sector financial institutions are generally very short-term loans. They are most commonly used to cover emergencies or for regular household expenditures. But a significant minority of loans are used for investment in either agricultural or non-agricultural businesses. While loans are generally given for very short periods, the frequency of loans made for periods of longer than 2 years increased somewhat between 2004 and 2007.

Table 19
Term of Loans

	Number of Months	Interest Rate
	Round 2-4	Round 2-4
6 years of schooling	0.094*	5.00
7-9 years of schooling	2.88***	-0.33
10-12 years of schooling	4.29***	-5.76*
12+ years of schooling	5.82***	-4.05
Own agricultural business	-1.25***	-1.69
Own non-agricultural business	0.533	1.55
Log durable assets (value)	0.67***	-1.27*
Log expenditures	0.043	-0.37
Number of observations	1728	1010
R-square	0.15	0.04

Notes: Robust standard errors in parentheses. Sample for term limited to households with formal loans of 36 months or less; sample for interest rates trimmed at the 5th and 95th percentil. Both regressions control for the stated purpose of the loan. *Means significant at 10% level. **Means significant at 5% level. ***Means significant at 1% level.

4. Conclusions

The *BANSEFI / SAGARPA* panel survey data allow a household level view of changes in the use of popular sector financial services following the passage of the *LACP* in 2001. From the initial sample of 5,768, there are 3,478 households surveyed at least three times, including both 2004 and 2007. The data indicate an important increase in the percentage of households using popular sector financial services between 2004 and 2007. Using a reasonable assumption that 25 percent of households in the surveyed communities had an account in 2004, we estimate that penetration almost doubled, with 48 percent of the households represented by the sample having accounts by 2007.

The sampling frame is well designed to answer questions related to the characteristics of households with and without accounts. We show that households with accounts in 2004 have higher levels of formal schooling, are wealthier, and are more likely to own agricultural or non-agricultural businesses. Was the expansion of popular sector financial institutions evolutionary, or revolutionary? That is, did the institutions expand by incorporating more of the same types of households, or by incorporating households with different characteristics? The data indicate the expansion was evolutionary. Among the households which were unbanked in 2004, most of these same characteristics are associated with opening an account before 2007. Those becoming banked

between 2004 and 2007 are more educated, have higher levels of wealth and expenditures, and are more likely to own an agricultural business. This suggests that even with the rapid expansion in the use of financial services between 2004 and 2007, an important segment of the population is still being left out of the financial services sector.

Reaching the poorest segments of the communities remains an important policy challenge. The data suggest that two government-supported programs have made some impact in bringing these lower-income households into the financial services sector. First, the *PATMIR* program appears to be reaching notably lower income households in lower income communities. Second, the program to make electronic transfers to recipients of the *Procampo / Oportunidades* and *Crédito a la Palabra* programs are also bringing these households into the system. With regard to this program, the data are somewhat limited in their ability to determine whether these program recipients are using the institutions only to receive program payments, or are also using the institutions to build savings or access loans. We believe gaining a better understanding of how the electronic transfers programs have changed use of financial services is an important area for future research. This is likely to require gathering additional data.

Finally, two findings have additional implications for policies designed to increase the reach of the financial services sector. The first is that the smallest institutions are serving poorer communities, and poorer households. The second is that households expressing more trust in government and non-government institutions are also more likely to have accounts in financial sector institutions. The smallest institutions are likely to be the most opaque to potential users. They are more likely to operate from a single branch, and less likely to have sophisticated accounting and information systems. The data suggest that increasing the level of trust in these institutions may be particularly important for expanding access among lower income households. Programs which improve their information systems and controls, and which encourage the institutions to communicate that information in a clear and transparent manner will help to increase the level of trust in the institutions.

The *BANSEFI / SAGARPA* panel data indicate important advancements in the expansion of financial services in Mexico in the years following the passage of the *Ley de Ahorro y Crédito Popular.* But the fact that the poorest segments of the population appear not to have participated in this expansion suggests there is space left of policies designed to reach these low-income households.