

ESTIMATING POTENTIAL MARKET SIZE FOR MICROCREDIT IN PAKISTAN

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MicroNOTE

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BACKGROUND AND INTRODUCTION

Microrfinance Industry in Pakistan has gone through an evolution of sorts. It has grown 6 fold in terms of borrowers and 15 times in terms of outstanding credit in the past 10 years¹. It has seen addition of microfinance practitioners (MFPs) - both banks and non-profit organizations, improved service delivery channels, innovative product designs, regulatory changes (promulgation of a banking regulation (circa 2001), institutional changes (establishment of a dedicated credit information bureau), countless business cycles and a major delinquency crisis. The industry narrative of sustained growth is backed by substantive supply side indicators and a trend of higher average loan sizes¹.

A decade ago, microfinance providers were a sector comprising of a handful of organizations seeking to improve the lives of a niche - the marginalized. This sector has now become a mature industry in its own right that caters to a spectrum of income and occupation segments. The outreach of the industry has grown not only in credit and number of borrowers but spatially as well¹. With a supply side appetite for growth, microfinance practitioners are constantly vying for territory and clients. Industry proponents recently held a summit² to discuss the industry's growth strategy for 2020; how to increase the active customer base of microfinance from 3.3 million in 2015 to 10 million in 2020³. While corporate and non-profit approaches to expansion in outreach may be different, the industry's growth strategy prompts an interesting and important discussion. This discussion is centered around questions such as: which jurisdictions will the industry tap into for this growth?; Which income and occupation segments will be targeted? And, will there be a concentration on specific age groups or a particular gender?

¹ MicroWATCH Issue : 1, 2006(Borrowers: 730,960, GLP: 7.197 million) to Issue: 36, 2015 (Borrowers: 3,507,333, GLP: 80.951 Million)

² September 2015 - Microfinance Growth Strategy Summit in Islamabad

³ Pakistan Microfinance Network: Microfinance Growth Strategy 2020



While there is reliable, up-to-date and periodic information available on industry benchmarks and indicators, there is an information gap related to the potential size of the market. The current figure of 27 million individual borrowers⁴ based on PMN's methodology is dated and has not been revised since 2007. Moreover, this methodology is very basic and while it provides some utility, it requires revaluation for technical reasons that will be discussed in detail in the next section.

A revised, up-to-date estimation provides invaluable information for donors, policy makers and most importantly, practitioners. Stakeholders vested in the sector would be well informed for the purposes of planning and future outlook. Based on their active borrower base, most MFPs are well acquainted with the market in which they operate in terms of the aforementioned segments of gender, age, occupation, geography etc. This exercise constructs a macro-level picture based on some basic information related to borrowing indicators and patterns that can potentially help in identifying untapped segments. Once identified, MFP operations such as product development and marketing can be tailored to tap into those segments.

Third, as a continuation of the point on segmentation, geography holds particular importance in the literature on estimating potential market size and practice of microfinance. There is evidence that shows that saturated markets can lead to undesirable outcomes such as high incidence of multiple borrowing, over-indebtedness and default (Krauss et al., 2012). This relationship is based on the hypotheses that stiff competition to sell credit within a jurisdiction leads to moral hazard on the part of the borrowers. Simply stated, borrowers will take risky decisions if they know that another party will bear the consequences of their decision. An important function of this exercise is to differentiate between markets that are saturated or deeply penetrated from those that where there is potential for MFPs to expand and grow. A better identification of markets that are under served and have a potential for growth will lead to a more even distribution of microcredit.

LITERATURE ON ESTIMATING MARKET SIZE OF MICROFINANCE

There are several quantitative approaches to measuring potential microfinance market in the literature. Two cross-country noteworthy approaches are Kraus et al. (2012) and Javoy and Rozas (2013).

Javoy and Rozas's (2013) model, Microfinance Index of Market Outreach (MIMOSA) is a linear regression equation that uses Human Development Index (HDI), formal savings and semi formal loans as explanatory variables for formal credit demand⁵. This model predicts potential formal credit capacity of a country and compares it to its actual credit capacity. Based on this comparison, each country is assigned a score from 1-5, where 1 denotes a country where retail credit utilization is below the potential (based on predictors of demand) and 5 denotes a country where retail credit has reached its capacity. While a low score invites expansion and growth, a high score warns against over-indebtedness.

Kraus et al.(2012) have devised a methodology that is based on concepts of market penetration that are perhaps more applicable to the Pakistani context. They define penetration in terms of borrowers as well as loan amount, and suggest matching supply to expected or potential demand. For the head count or borrower measure, they use the 'working poor' (individuals aged 15 or above) as a starting point where 'poor' is defined according to income or poverty statistics i.e. national poverty line or absolute international measure of \$2 a day. They then filter this number down by the degree of

⁴ MicroWATCH Issue 36: Quarter 2 (Apr-June 2015)

⁵ Credit Demand is measured in the number of adults taking loans from a formal financial institution using data from Global Findex (2012)

“willingness to take a loan” - a measure based on a demand side survey of a cohort of countries. To this basic approach, they apply a number of useful refinements such as urban versus rural, multiple borrowing and households instead of individuals.

A review of some regional or country specific literature shows that most approaches mirror the methodology used in Kraus et al.(2012). The starting point is the number of poor or low-income individuals or households who are assumed to be potential borrowers (Grandes et al., 2013, UNDP: Microfinance in Turkey, 2005 and SANABEL: Microfinance Industry Profile of Egypt). Anand and Rosenberg (2008) have pointed out this number needs to be reduced keeping in view a number of factors to ensure that market demand is not overestimated. Microfinance demand estimates for Pakistan's regional peers like India and Bangladesh are based on these models where a large proportion of the poor are taken to be potential microfinance clients (IFC and KfW Bankengruppe 2009a and b).

The adjustments and parameters that need to be built into an estimation framework are usually tailored to the local context. A study by CGAP (2013) emphasizes the importance of building some of these parameters to guard against over-estimation. For instance, the paper argues that borrowing takes place in cycles, and that borrowers are not active all the time, and hence, this pattern should be taken into account. In another example, on willingness, it states that even though individuals may qualify for loans, only a fraction will be willing to take credit as evidenced in Nicaragua, Panama and Dominican Republic.

Mirroring Javoy and Rozas's (2013) econometric technique, Raza (2014) explores determinants of demand for credit among small farmers of district Mandi Bahauddin in Pakistan. Using data gathered from farmers in a small district in Punjab, he uses econometric models in conjunction with some qualitative techniques to explore the impact of education, household size and income on demand for credit. In a similar vein, Akudugu (2012) shows that demand for credit by farmers and supply of it by Rural Banks in Ghana's Upper East Region are determined by socio-economic and politico-cultural factors, in particular, of farmers' gender and political affiliations. While such techniques may be expansive, they take into account the characteristics of borrowers as well as non-borrowers to determine the factors that are most closely associated with credit demand, and based on the degree of association, can allow for a more statistically robust estimation of the market size.

PMN'S CURRENT ESTIMATION MODEL AND PROPOSED APPROACH

PMN's current estimation framework was devised in 2007 and it resembles the step-by-step or pyramid approach and parameter framework used by Kraus et al.(2012). It is an 8 step methodology that based on data and ratios from Pakistan's 1998 Census. The estimated market size at each step for 2011/2012 is stated in brackets.

Step 1: Each city or district's population in 1998 was inflated by a constant cross-sectional growth rate of 1998 to arrive at 2007's estimated population [192 million]

Step 2: Estimated population in Step 1 was narrowed down to the age bracket of 18-64. The ratio of population aged 18-64 (in 1998) was applied to the estimated population in 2007. [92 million]

Step 3: Total number of potential households in 2007 were estimated by using average household size by district/city in 1998.

Step 4: Households are split by type of roofs: wood/bamboo, cement/iron and superior roofing materials such as Reinforced Cement Concrete (RCC) and Reinforced Brick Concrete (RBC).

Step 5: Households with roofs made of wood/bamboo and cement/iron are assumed to have residents who are more likely to be microfinance clients. Therefore, the ratio of potential microfinance households in 1998 is applied to the total number of households calculated in Step 3.

Step 6: Half of the estimated households in Step 5 are removed based on the rationale of prudence and willingness to borrow.

Step 7: Number of individuals are calculated by using the average household size by district [67.5 million].

Step 8: The number of individuals in Step 7 is refined by applying the age bracket (18-64) filter [32.6 million].

Based on this 8-Step approach, the estimated market size of microfinance is approximately [32.6 million borrowers].

Although this approach uses the total population, unlike Kraus et al.(2012) who use the 'poor' as the starting point, it is not very different from the latter in that it builds some basic parameters or filters into the framework based on some industry and country specific assumptions e.g. household types and age brackets.

We have evaluated this model based on three criteria; a) the data source, b) the relevance of the parameters to the present day outlook of the industry and c) validity of some of the underlying assumptions that form the basis of the model's parameters.

Census 1998 is one of the reliable and comprehensive socio-economic data source. It is also the most recent census of Pakistan. It passes the credibility test, however, its data are quite dated. Due the limitations of this data set, the simplicity of some of the assumptions in PMN's model are stretched e.g. constant growth rate of the population by district/city and other ratios such as the proportion of 18-65 year olds, household size by district and household type.

While some of the parameters or filters such as age bracket and household size are valid and relevant, the characterization of potential clients based on residence quality needs rethinking. The average loan size has grown from 10,286 in 2007 to Rs 30,604 in 2014.⁶ Moreover, the upper limits to loan sizes can go as high as Rs 70,000 - 80,000⁷, making it quite possible that people living in homes made out of superior roofing materials are potential borrowers.

PROPOSED APPROACH

The proposed approach is based on the structure in Kraus et al.(2012) - a base or starting point in terms of a sub-set of population with supporting parameters or contextual filters. These parameters are supported by some rationale or underlying assumptions. Finally, the potential market is then sliced by different segments such as occupation, labour market status and gender. A good replication of this approach was done by Grandes and Carballo (2013) for Argentina. Using socio-economic data from the Survey of Argentinean Social Debt (ESDA), they have built a pyramid model based whose main parameters that include willingness to demand a loan in the past or propensity to borrow in the future, income range (of clients that typically qualify for microfinance loans) and credit worthiness.

Our conceptual framework mirrors the work of Grandes and Carballo (2013). We think that the most appropriate starting point for our model be willingness or propensity to

⁶ MicroWATCH issue:7, 2008 and MicroWATCH issue:34, 2015

⁷ Industry Sources

take a loan given the emphasis in literature. Johnston and Morduch (2007) surveyed households in Indonesia (2002) and found that less than 25 percent of creditworthy poor households had borrowed from a microfinance institution or other formal lenders in the past 3 years. Magill and Meyer (2005) found that around 49 percent of the microenterprises interviewed in Ecuador were interested in obtaining loan. Taking heed from the CGAP study that advises on caution when estimating potential microcredit market size, we think incorporating 'willingness' is quite essential to have a concrete foundation for an estimation framework.

We also wanted to ensure that this methodology is built around a data set that contains information on socio-economic indicators that were up-to-date, periodically available, reliable and credible, easily accessible and had the level of detail that would allow segmentation. For these reasons, we chose the data from the Household Integrated Economic Survey (HIES). This survey is carried out by the Pakistan Bureau of Statistics (PBS) every alternative year and contains information on socio-economic factors such as income, expenditure and employment status. It fulfills all the aforementioned criteria and information on households that obtained loan over the last one year can be obtained from the HIES [2004-05, 2005-06, 2007-08 and 2011-12 round from Section 9M-Part B of the questionnaire]. For this exercise, we have used the last available dataset at the time of writing - HIES 2011/12. The estimated market size at each step is stated in brackets.

Our framework is a four-tiered framework with the following steps:

Step 1: Individuals who have an outstanding loan from any source at the time of survey or have borrowed in the year immediately before. [90 million]

Step 2: Individuals in the Age Bracket of 18-65. We would have preferred having an age bracket that captured the working age population, however, the age at which an individual can qualify for a loan from a formal financial institution is 18. HIES 2011/12 data show that most individuals with loans are between the ages of 20 and 60. Even though the proportion of individuals aged 18-20 and 60-65 with loans is small, we have included them in our age bracket. Teenagers and (in some cases) seniors are active farm hands and apprentices in local businesses, and have access to sources of informal loans such grocery store and acquaintances. Although the same argument could be extended for 15-18 year olds, we chose to exercise some caution in this regard. [43 million]

Step 3: Average Loan Range of Rs 20,000 - Rs 150,000 (and Rs. 10,000 to Rs. 150,000 as a sensitivity analysis) [17 million and 20.5 million respectively]

Step 4: Segmentation by socio-economic indicators

The above information on loans is available at the household level. Our question of interest - "outstanding loan or loan taken in the year before" is asked at the household level, from the household head. We have assumed that all individuals aged 18 and over that live in our target households are part of the potential market.

Since our computation is based on the last available HIES dataset - 2011/12, we have used the average loan size in the sector from that time period⁸ i.e. Rs. 20,000. The rationale behind upper range of Rs.150,000 relates to the loan ceiling imposed by State Bank of Pakistan (SBP) on Microfinance Banks. For simplicity we have used this ceiling for the entire industry that includes NGOs and Rural Support Programs.

The section in HIES that has the question on 'loan taken by the household' also has information on households' net saving during the last one year that can help in as-

⁸ MicroWATCH Issue 22, Oct-Dec 2011 (average loan size :Rs. 21,126) and MicroWATCH issue 26, OCT-DEC 2012 : (average loan size Rs. 24,131)

sessing demand for micro saving products also, thus extending the potential estimates to microfinance services, as opposed to just micro-credit as done in most market demand studies. A detailed discussion on some of the other factors considered in devising this methodology can be found in the Appendix.

Estimation Results

Using the framework described in the previous section, the total estimated market size is 20.5 million going by the loan size range of Rs. 10,000 to Rs. 150,000, and 17 million using the loan range of Rs. 20,000 to Rs. 150,000. The following tables show the split by different segments.

Table 1: Segmentation by Gender

Potential Market	Loan Size (Rs 10,000 - Rs 150,000)	Loan Size (Rs 20,000 - 150,000)
Male	9.7 Million	8.0 Million
Female	10.8 Million	9.0 Million
Total	(20.5 Million)	(17.0 Million)

Table 2: Segmentation by Province

Potential Market	Loan Size (Rs 10,000 - Rs 150,000)	Loan Size (Rs 20,000 - 150,000)
Punjab	12.6 Million	10.5 Million
Sindh	2.4 Million	1.8 Million
KP	5 Million	4.2 Million
Baluchistan	0.5 Million	0.5 Million
Total	(20.5 Million)	(17.0 Million)

Table 3: Segmentation by Urban & Rural

Potential Market	Loan Size (Rs 10,000 - Rs 150,000)	Loan Size (Rs 20,000 - 150,000)
Urban Borrowers	5.0 Million	4.2 Million
Rural Borrowers	15.5 Million	12.8 Million
Total	(20.5 Million)	(17.0 Million)

Table 4: Segmentation by Labor force

Potential Market	Loan Size (Rs 10,000 - Rs 150,000)	Loan Size (Rs 20,000 - 150,000)
Part of Labor Force	11.3 Million	9.3 Million
Out of Labor Force	9.2 Million	7.7 Million
Total	(20.5 Million)	(17.0 Million)

Table 5: Segmentation by Labor force

Potential Market (only includes the employed)	Loan Size (Rs 10,000 - Rs 150,000)	Loan Size (Rs 20,000 - Rs 150,000)
Agriculture, Forestry & Fishing	4.60 Million	3.70 Million
Mining & Quarrying	0.03 Million	0.03 Million
Manufacturing and Repair	1.20 Million	1.00 Million
Construction, Trade and Transportation	3.00 Million	2.40 Million

Continued on next page

Business, Public Admin and IT	0.50 Million	0.40 Million
Social and Community Services	1.50 Million	1.20 Million
Total	(11.00 Million)	(9.00 Million)

Table 6: Segmentation by Monthly expenditure

Potential Market	Loan Size (Rs 10,000 - Rs 150,000)	Loan Size (Rs 20,000 - Rs 150,000)
Quintile 1 (Rs. 900)	4.4 Million	3.2 Million
Quintile 2 (Rs. 13,600)	5.0 Million	4.0 Million
Quintile 3 (Rs. 18,200)	4.3 Million	3.6 Million
Quintile 4 (Rs. 25,700)	4.1 Million	3.6 Million
Quintile 5 (Rs. 286,300)	2.7 Million	2.6 Million
Total	20.5 Million	17.0 Million

ESTIMATING MICROENTERPRISES

Framework for Estimating Non-Agriculture Microenterprises

In 2012, State Bank of Pakistan increased the microloan ceiling for microenterprises from Rs 150,000 to Rs. 500,000 for Microfinance Banks (MFBs). This was done to provide impetus to enterprise lending by the MFBs and increase outreach. There is ample evidence that highlights the role of enterprises in economic growth, poverty reduction and job creation [(Edinburgh Group (2012, p.1-43), (Dalberg (2011, page.1-48) and Abe et al. (2012, p.1-216)].

Their importance to Pakistan's economy and labour force was also documented in a PMN report authored by Aslam (2013):

"According to a World Bank study, MSMEs in Pakistan account for 30 percent of the GDP (Nenova & Niang, 2009), contribute to 25 percent of export earnings (Afraz et al, 2013) and employ 80 percent of the non-agricultural labor force (Gal-lup, 2004)"

The aforementioned reasons were our motivation behind including microenterprises into the broader estimation framework. For simplicity, we distinguish between individual borrowers and microenterprises in our framework and calculations, however, this was not accomplished without any challenges.

The lines between a microenterprise borrower and an individual borrower are quite fuzzy in Pakistan. For example, in most cases of self employment, loans are applied for and disbursed to an individual who may or may not be an entrepreneur borrowing for business operations. The MFI, depending on its operational procedures, may account for the loan either as a microenterprise loan or a loan to an individual (for their enterprise). Unfortunately, the accounting and reporting practices in the industry are not standard to allow for clear separation between the types of loans.

Generally, [based on popular products by MFIs] the industry focuses on loans for productive uses and those meant for job creation. Our task would have been easier if there was a loan threshold separating the size of individual loans (or loans taken out by an individual) and enterprise loans. However, based on a small sample of supply side data, we can conclude that a natural threshold does not exist. The average loan size for the year 2015 for an individual borrower was Rs. 31,563 and a microenterprise was Rs. 57,120.

Table 7: Average Loan Size in Pakistan's Microfinance Industry (2015)

	Individual Borrowers	Microenterprises
Average Loan Size	Rs. 31,563	Rs. 57,120

Source: MicroWatch issue: 36 and Industry Average based on a sample of Microfinance Institutions (2015)

Estimation Results

Our proposed framework for estimating microenterprises is also built around the HIES data set - Section 11M(part A & B). This section contains data on household heads who are either a proprietor or partner in a non-agricultural, non-financial establishment, business or shop (mobile or fixed) that employed less than 10 persons any given time during the year. Information in HIES is limited to enterprises that are related to manufacturing, mining and quarrying, service related businesses, (such as real estate, legal, accounting, advertising) transportation, wholesale and retail trade, hospitality and construction. Agriculture, livestock and fisheries related microenterprises are not captured in HIES.

Table 8: Non-Agriculture Enterprises without the loan filter

	Potential
Manufacturing	654,000
Construction, Trade	4.1 million
Accommodation, informal	317,000
Professional	59,000
Administrative, public	0.2 million
Arts and other services	1.1 million
Total (approximate)	6.5 million

Figures rounded to the nearest million or thousand.

Table 9: Non-Agriculture Enterprises with the loan filter

Potential Market	Loan Size (Rs 60,000 - Rs 500,000)	Loan Size (Rs 200,000 - Rs 500,000)
Manufacturing	70,000	38,000
Construction, Trade	529,000	184,000
Accommodation, information and real estate	32,000	4,600
Professional	2,000	2,000
Administrative, public	14,000	3,000
Arts and other services	108,000	29,000
Total	0.7 million	0.3 million

Figures rounded to the nearest million or thousand.

Framework for Estimating Agriculture Enterprises

Agricultural activities in Pakistan mostly take place in the form of farming and livestock rearing. These activities typically are carried out at the household level, with household members involved in the entire range of activities such as plantation, harvesting and fertilization. Since the activities carried out on the farm by household are indivisible and Pakistan hasn't reached a level of mechanization that would enable specialization to take place at a scale, we propose that the unit of measurement to be the farm size under any of three predominantly prevalent land tenure arrangements in Pakistan namely owner cultivated, share cropped and tenant farming types.

The Federal Land Commission⁹ has defined the threshold of subsistence, economic and above-economic land holdings in all four provinces of Pakistan, which are shown in table below. For our framework, we have proposed that subsistence and economic land holdings across all four provinces are classified used as a cutoff for small/micro agricultural farms.¹⁰

Table 10: Classification of Land Holdings by Province

Province	Subsistence holdings	Economic holding	Above economic holding
Punjab	Up to 12.5 acres	Above 12.5 acres to 50 acres	Above 50 acres
KPK	Up to 12.5 acres	Above 12.5 acres to 50 acres	Above 50 acres
Sindh	Up to 16 acres	Above 16 acres to 64 acres	Above 64 acres
Baluchistan	Up to 32 acres	Above 32 acres to 64 acres	Above 64 acres

Source: Categories of Land Holdings: Definitions. Federal Land Commission, Pakistan

Estimation Results - Farm Micro Enterprises

Table 11: Potential Market Size of Microenterprises in Punjab

	Potential
Punjab	0.55 million
Sindh	0.22 million
KP	0.17 million
Baluchistan	0.05 million
Total	1 million

⁹ Federal Land Commission April 1972

¹⁰ Part A of Section 10-M from the PSLM/HIES 2011-12 has been used.

APPENDIX

Poverty Scorecard Approach to Estimate Market Size

Government of Pakistan established the Benazir Income Support Program (BISP) in 2008 to provide unconditional cash transfers to chronically poor families that were living below the poverty line. The immediate objective of the program is to help approximately 7.2 million families (currently 5.2 million) afford basic necessities such as food and fuel and moderate the effects of inflation on their daily living. Subsets of beneficiaries from this program were also chosen for subsidiary programs namely Waseela-e-Haq (entrepreneurship scheme), Waseela-e-Rozgar (technical and vocational initiatives) Waseela-e-Sehat (health insurance program) and Waseela-Taleem (child education program), with only the last program currently operating.

The program's administration adopts a systematic approach to indentify eligible households by using a poverty scorecard approach. This approach involves assigning a 'score' to each household based on some measureable characteristics such as consumption, demographics and asset accumulation. The scorecard method is implemented through a periodic survey conducted by BISP and a score threshold is marked for qualifying households.

The program and its methodology allow certain groups to be tracked over time and target the cash transfer scheme accordingly. A study by Masim (2013) for PPAF shows that going by BISP's scorecard, microcredit clients lie (both interest free and conventional microcredit) above a score of 23, corresponding to upwards of the top portion of the transitory poor bracket.

Poverty Estimates by Masim (2013)

Non-poor	Poverty Score 51 - 100	Social Protection/Poverty Alleviation Programs <i>Score range >23: Microfinance</i> <i>Score range <23: All PPAF Grants</i> <i>Score range 0 - 16.2: BISP beneficiaries</i> <i>Score range 0 - 18: PPAF asset transfer beneficiaries</i>
Transitory Non-poor	Poverty Score 35 - 50	
Transitory Vulnerable	Poverty Score 24 - 34	
Transitory Poor	Poverty Score 19 - 23	
Chronically Poor	Poverty Score 12 - 18	
Extremely Poor	Poverty Score 0 - 11	

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To use the finding from the Masim's (2013) study on microfinance clients for an estimation framework, we used beneficiary data from BISP's 2010-13 survey. However, these data have certain limitations and all ensuing estimations should be interpreted with caution. BISP provided us with data on the distribution of beneficiary households by score brackets and districts of Pakistan. Our calculations are summarized in the following steps:

Step 1: Microfinance Clients lie in the 26-50 score bracket. (26-61+ as a measure of sensitivity)

Step 2: Average Household Size by District from PSLM (2012-13)

Step 3: Age filter at 18 years.

Step 4: Segmentation by Province

It should be noted that we don't propose this as an alternative methodology and the estimations should not form a point of comparison with the framework stated the main body of the paper. This is because the base or the starting point for BISP is a poverty score whereas for the methodology built around HIES, it is borrowing history. Further, the parameters and the year of reference also differ slightly.

As mentioned before, we intended to devise a framework that could be built around data that were easily and periodically available so that our estimation steps are easily replicated. BISP is supposed to conduct a periodic survey every 4-5 years, making our proposed dataset superior. BISP does not make its survey data readily available for academic or commercial use. However, there have been increasing efforts from the organization to provide data for research purposes and development of a special protocol to cater for the requests in future.

Table 12: BISP estimates

Potential Market	Score range (26-50)	Score range (26-61+)
BISP total estimates	31 Million	44 Million

Table 13: Split by Provinces

Potential Market	Score range	Loan Size (Rs 200,000 - Rs 500,000)
Punjab	19,149,318	26,681,866
Sindh	5,484,791	8,153,705
KP	3,767,084	5,625,236
Balochistan	995,577	1,448,267
AJK	765,508	1,082,631
FATA	223,811	359,978
GB	158,119	238,717
ICT	295,204	464,868
Total	31 Million	44 Million

¹¹ This survey captured approximately 27 million households (bisp.gov.pk)

¹² Even though poverty is calculated at the household level, the grant is disbursed to one and some cases, more than one individual in the household.

PROPOSED METHODOLOGY - ADDITIONAL DISCUSSION

Individual Borrowers

In devising this methodology, we considered building other parameters such as including only those household heads who are economically active i.e. part of the labour force. Further, among the employed, we gave some consideration to removing unpaid family workers from the potential market because even if they were to obtain a loan, their repaying capacity would be limited. These conditions were not built into our model because regardless of the labour market status of an individual, given Pakistan's cultural context (and assuming an individual has exposure to work), we can presuppose a psychological willingness to find employment or self-employed, and relatives or friends that can act as guarantors for a microloan. Moreover, given the high incidence of seasonality in the informal sector (that forms the bulk of Microfinance Industry's clientele), we think that the boundaries can become blurry between the 'economically active' and 'economically inactive' statuses.

We also gave some consideration to inserting a cut-off point at the last stage to separate the low-income households that are likely to be microfinance clients from the economically well-off households that may not require microfinance services. We considered a range 50-200 per cent of household expenditure per capita borrowing from Grandes and Carballo's (2013) income range that was between one and two poverty ranges. This range was defined keeping in view the limited available evidence on the poverty profile of microfinance clients in Pakistan. Haq and Farooqi (2009) using poverty scorecard data for 9,035 clients of four MFPs in Pakistan, found that 70-86 percent of the surveyed clients of these four MFPs were above the official poverty line. We deemed this filter or cut-off to be infeasible as the poverty line in Pakistan is calculated at the national level, not at the regional level and this would have made it difficult to accurately make spatial inferences about the potential market.

Agricultural Enterprises

In Pakistan, livestock rearing is indivisible activity that takes place alongside farming especially in the rural areas. Household members are often simultaneously engaged in both for subsistence. We considered including livestock for the agricultural microenterprises farming to somewhat accurately reflect the landscape. Given the fact that HIES has a dedicated section on livestock, data challenges would not have been a barrier. However, we saw two main limitations to including it in our estimation approach.

First, without any evidence, it is difficult to determine a value threshold for animals or place an emphasis on the ownership of animals in HIES - buffalo, cow, sheep, poultry, mule, horse. For instance, the total rupee value or count of animals (in different categories) at which a household ownership of livestock becomes a microenterprise is a value judgment without any empirical evidence. Second, in the absence of a follow-up question in HIES that asks the household whether any revenue is derived from the ownership of the livestock, it is difficult to distinguish between livestock ownership as a store of wealth or a means of generating income. Ideally, we would want enterprises to be defined as entities that create employment (or self employment) and generate income, however, data are inadequate to use this definition. Perhaps, the same argument could be applied to farm microenterprises as well - Is lands a means of subsistence, generating employment or both? However, with clearly defined land ownership thresholds by state authorities, a case can be made for classifying small farmers as owners of small microenterprises.

BIBLIOGRAPHY

Market estimates

Grandes, Martin, and Ignacio Esteban Carballo. *The Potential Demand for Microcredit in Argentina* (n.d.): n. pag. Web.

Rating, Planet. *MIMOSA Microfinance Index of Market Outreach and Saturation* (n.d.): n. pag. Web.

Krauss, Annette, Laura Lontzek, Julia Meyer, and Maria Frommelt. "Lack of Access or Crowded Markets? Towards a Better Understanding of Microfinance Market Penetration." *SSRN Electronic Journal SSRN Journal* (n.d.): n. pag. Web.

Aslam, Amal. Comp. Pakistan Microfinance Network. *MOVING TOWARDS MICRO & SMALL ENTERPRISE LENDING* (n.d.): n. pag. Web.

Haq, Aban, and Maheen Saleem Farooqi. *POVERTY PROFILE OF MICROFINANCE CLIENTS IN PAKISTAN (2009)*: n. pag. Web.

Karlan, Dean S., and Jonathan Zinman. 2008. "Credit Elasticities in Less-Developed Economies: Implications for Microfinance." *American Economic Review*, 98(3): 1040-68

SANABEL. *Sanabel_Profile_Egypt_EW* (n.d.): n. pag. Web.

Microfinance in Turkey. Ankara: United Nations Development Programme, 2005. Web.

Brandsma,, J. "Microfinance In the Arab States : Building Inclusive Financial Sectors." *UN Capital Development Fund*, Oct. 2004. Web.

Cheema, Iftikhar Ahmed. *OPM Working Paper 2010-02 Tracing the Spatial Dimensions of Poverty* (n.d.): n. pag. Web.

Schreiner, Mark. "A Simple Poverty Scorecard for Pakistan." *Journal of Asian and African Studies* 45.3 (2010): 326-49. Web.

"Are We Overestimating Demand for Microloans?" *PS: Political Science and Politics* 44.3 (2011): 688-89. CGAP Brief, Apr. 2008. Web.

Rozas, Daniel, and Micro Opus. "Is There a Microfinance Bubble in South India?" N.p., 17 Nov. 2009. Web.
IFC, and KfW Bankengruppe. "Bangladesh: Microfinance And Financial Sector Diagnostic Study(Final Report)." N.p., Mar. 2009. Web.

IFC, and KfW Bankengruppe. "India: Microfinance And Financial Sector Diagnostic Study(Final Report)." N.p., June. 2008 Web.

Sebageni, Grace. "Assessing the Demand for Microinsurance in Uganda." N.p., May-June 2002. Web.
Ayayi, Ayi Gavriel, and Nurmukhammad Yusupov. "A Methodology for the Assessment of Potential Demand and Optimal Supply of Entrepreneurial Microcredit." N.p., 18 June 2012. Web.

Prof. He Guangwen. *An Analysis of Microfinance Demand in China* (n.d.): n. pag. Web.

Matul, Michal, Justyna Pytkowska, and Marcin Rataj. "Developing the Microcredit Market in Poland." (n.d.): n. pag. Web.

Afzal, Uzma, Giovanna D'Adda, Marcel Fafchamps, Simon Quinn, and Farah Said. "Two Sides of the Same Rupee? Comparing Demand for Microcredit and Microsaving in a Framed Field Experiment in Rural Pakistan." N.p., n.d. Web

Publisher: Asian Economic And Social Society, Issn (P): 2304-1455, Issn (E): 2224-4433, and Volume 2 No. 2 June 2012. *Estimation of the Determinants of Credit Demand by Farmers and* (n.d.): n. pag. Web.

Raza, Ali. "Demand for Credit among Small Farmers: A Case Study of District Mandi Bahauddin, Pakistan." (n.d.): n. pag. 2014. Web.



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