Measuring Financial Inclusion in Mexico through a multidimensional index

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Abstract

The paper measures the degree of financial inclusion of individuals using a multidimensional index using data regarding access to and use of financial services.

Using a two-step principal component analysis to construct the index based on data from the 2012 wave of the Mexican National Financial Inclusion Survey, results indicate that the access dimension is the main determinant of inclusion, and that there are important inclusion gaps between rural and urban dwellers.

From a public policy perspective, the findings suggest that efforts should focus on fostering access to financial services in rural areas.

Introduction

There is a growing body of evidence suggesting that through the opportunity to safely accumulate assets, leverage available assets to invest in human and physical capital, and manage risk; financial inclusion has the potential to strengthen individual's capacities to improve their wellbeing (Beck, Levine and Loayza, 2000; Beck, Demirguc-Kunt and Levine, 2004; Giuliano and Ruiz-Arranz, 2009). As a result, recent years have seen a dynamic public policy drive, at the national and international level, to foster financial inclusion.

Despite the absence of a single definition for financial inclusion, there is a consensus regarding its three basic dimensions (Government of Mexico, 2011; Demirguc-Kunt and Klapper, 2012; OECD / INFE, 2012; Demirguc-Kunt, Klapper, Singer, and Van Oudheusden, 2015). The first is access, and refers to the availability of a wide array of regulated financial services in a particular location. The second dimension is use, and refers to the demand for available financial services. The third dimension is quality and refers to the capacities of financial institutions to offer services which are tailored to the characteristics of the populations they aim to serve; the capacities of users to evaluate the alternative services on offer, and make responsible use of them; as well as the capacities of regulators and supervisors to find the appropriate balance between systemic sustainability, consumer protection and inclusion goals. Reflecting data availability, this version does not account for the quality dimension.

Considering the multidimensional nature of financial inclusion, a composite index of its evolution is useful from a policy perspective to measure its progress and identify its determinants. Available measures tend to focus on a single dimension, exogenous selection and weighting of variables to be included, as well as problems of collinearity.

Building upon the work of Camara and Tuesta (2014), this paper uses a two-stage Principal Component Analysis to construct a multidimensional index of individual's financial inclusion in Mexico. The proposed index's advantages include the incorporation of financial inclusion's relevant dimensions, the endogenous selection and weighting of variables, and the possibility to incorporate binary and categorical variables within the model.

Methods

The Individual's Index of Financial Inclusion (IIFI) is built in two stages. In the first one, intermediate indices are estimated for each inclusion dimension:

$$H_i^u = \sum_{k=1}^{K} P_{kj} * X_j^*$$

where H_i^u, is individual i's inclusion along dimension u, P_{kj} is the weight assigned to the jth standardized variable X_j^*. In a second stage the final IIFI is estimated:

$$\text{IIFI}_i = \sum_{u=1}^{U} P_i^U * H_i^u$$

To compute the individual dimension indices, a mapping between available data and the Alliance for Financial Inclusion's core set of indicators (FIDWG 2013) was used.

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	Bank branches	Microfinance Institutions	Bank Correspondents	ATMs	POS
Urban	37	2,7	66,3	125,6	1.893,3
Rural	0,4	0,0	1,4	1,1	9,7

Table 1. Mexico 2012: Access indicators (per 10,000 persons)

Data

The IIFI uses data from the 2012 wave of the Mexican National Survey of Financial Inclusion (SHCP, CNBV and INEGI, 2012), as well as records of the National Banking and Securities Commission (CNBV, 2012). Survey data includes information from 6.113 individuals aged between 18 and 70 years old, which represent around 64% of total population of Mexico (CONAPO, 2008).

As can be seen in table 1, access indicators provide evidence of a substantial gap in the supply of financial services between urban and rural areas.
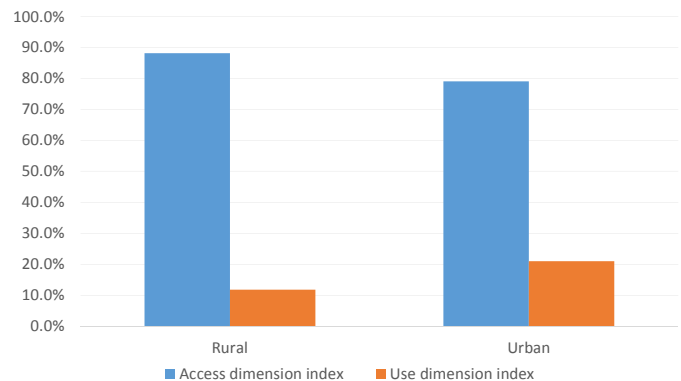

Chart 1. Mexico 2012: Financial inclusion weights composition.

Results and Conclusions

Results indicate that whereas access in rural areas is driven by bank correspondents, the main access determinants in urban areas are the availability of bank and microfinance institution branches in addition to bank correspondents.

Regarding the use dimension, the findings indicate that inclusion in rural areas is heavily influenced by demand for insurance products, perhaps reflecting the higher risks faced. In contrast, in urban areas the use dimension is explained by a more balanced demand for financial services, with credit and the use of electronic distribution channels accounting for the largest shares of observed variation.

Overall, results suggest that the access dimension is relatively more important in explaining the fluctuations of individuals' level of financial inclusion, implying that further inclusion is predominantly constrained by supply-side factors. This situation is more acute in rural areas (see chart 1)

From a public policy perspective, the findings suggest that efforts should focus on fostering access to financial services in rural areas. Specific measures could include incentivizing the development of alternative distribution channels, such as through correspondents and electronic means, of non the non-bank financial institutions which specialize in servicing rural populations.

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