

Remittances and the Use of Formal and Informal Financial Services

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Summary. — While recent literature has pointed to a positive effect of migrants' remittances on the financial development of receiving countries, findings with respect to access to and the use of loans have been ambiguous. This paper investigates the effect of remittances on the use of formal and informal financial services using Mexican household data and finds positive and statistically significant effects of remittances on the ownership of savings accounts, the existence of debts, and on recent borrowing. The fact that the effect of remittances on borrowing is driven by informal finance rather than by traditional bank loans points to deficiencies of the formal financial sector in addressing the financial needs of remittance-receiving households. We address methodological concerns of selection bias and reverse causality through household fixed effects and an instrumental strategy that exploits distance to train lines and labor market conditions in the US as exogenous determinants of remittances.

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1. INTRODUCTION AND RELATED LITERATURE

Remittances—the money migrants send home, usually to their families staying behind—are today the second most important source of foreign finance for the group of developing countries. Their continuous increase over the last two decades, interrupted only through a 5.8% decline of remittances to developing countries in 2009 following the global financial crisis (World Bank, 2010), has raised interest on their impact on economic development both in policy and academia. A large number of studies have addressed their impact on poverty and inequality (Acosta, Calderón, Fajnzylber, & Lopez, 2008; Adams & Page, 2003; Jones, 1998; Koehlin & León, 2006), spending behavior (Adams & Cuecuecha, 2010; Cox Edwards & Ureta, 2003; Massey & Parrado, 1998; Woodruff & Zenteno, 2007; Yang, 2008) and macroeconomic effects (Acosta, Fajnzylber, & Lopez, 2007; Amuedo-Dorantes & Pozo, 2004; Buch & Kukulenz, 2010; Sayan, 2006). More recently, the effects of remittances on access to and the use of financial services has gained attention and become a primary focus in development policy. It is usually argued that linking remittances with additional financial services has important benefits by providing households with additional tools of risk management and asset accumulation and because the saving of remittances at financial institutions allows channeling savings from remittances toward the demand for credit elsewhere (see for example Orozco, 2004; Orozco & Fedewa, 2006; Terry & Wilson, 2005). However, the effect of remittances on access to and use of financial services is not straightforward. The literature on remittances and financial access has put forward two views: one view claims that remittances function as a substitute for credit. Different behavior of spending by remittance-receiving households is often explained within a theoretical framework of imperfect credit markets, where remittances help poor households overcome liquidity constraints that restrict investment in human or physical capital (Calero, Bedi, & Sparrow, 2009; Taylor & Wyatt, 1996). More explicitly, Woodruff and Zenteno (2007) refer to the substitution between remittances and credit as an explanation for their empirical findings that credit-constrained Mexican microenterprises with transnational ties invest more than micro

entrepreneurs without such ties. Along a similar line of argument, Giuliano and Ruiz-Arranz (2009) find a larger impact on growth in countries with low levels of financial development because—as they argue—remittances can substitute for the lack of access to credit and enable households and enterprises to increase their investment in human and physical capital in countries with larger credit constraints, which translates into higher growth. Ambrosius and Cuecuecha (2013) find that remittances respond to households' demand for financing emergencies and make them less reliant on debt-financing when they suffer from health-related negative events.

A different line of research claims that remittances may function as a 'catalyst' for financial development. A number of empirical studies have found positive effects of remittances on savings indicators at the cross-country level (Aggarwal, Demirgüç-Kunt, & Martínez Pería, 2010; Gupta, Pattillo, & Wagh, 2009) and for case studies on Mexico (Demirgüç-Kunt, López Córdova, Martínez Pería, & Woodruff, 2011) and El Salvador (Anzoategui, Demirgüç-Kunt, & Martínez Pería, 2014). Several reasons are given for a positive impact of remittances on the amount of deposits: on the side of institutions, banks may have an interest in capturing remittances for the financial system and therefore target receivers specifically. On the side of receivers, the lumpiness of remittances may create a demand for savings options. In the case where migrants transmit 'financial knowledge' together with remittances, the knowledge of financial products could be higher. In this sense, remittances might reduce information asymmetries from the demand side and mistrust toward the banking sector that is especially widespread in Latin America (Bebezcuk, 2008; Roa, 2015). Others have argued that financial institutions might include remittances in the evaluation of creditworthiness of clients (Cuecuecha & Da Rocha, 2011; Orozco & Fedewa, 2006). In a randomized control trial among Salvadoran migrants, Ashraf, Aycinena, Martínez, and Yang

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(2015) find that senders of remittances in general have a strong demand for savings accounts, and that this demand increases when the design of products allows migrants to retain control over the use of remittances. However, while all the mentioned empirical studies on remittances and financial development have identified an impact on savings and deposits, the effect of remittances on credit from formal financial institutions is either weak (Aggarwal et al., 2010; Demirgüç-Kunt et al., 2011) or has not been confirmed (Anzoategui et al., 2014).

The two perspectives on remittances and financial services are not contradictory: research based on financial diaries has shown that poor households mix and combine different financial tools and instruments to cope with expected and unexpected financial gaps (Collins, Morduch, Rutherford, & Ruthven, 2009; Rutherford, 2003). Since migration and financial services are both asset-building and risk-management tools, remittances and financial services may, in some cases, substitute for each other—for example, when family members in the US function as a source of capital from outside the regular household to cover emergency spending, or when remittances finance investment in human or physical capital in the context of absent or rudimentary financial markets in the countries of origin. In other cases, remittances and financial services may complement each other because the reception of remittances may pave the way for additional financial services such as savings accounts or function as collateral for loans.

A better understanding of how households combine formal and informal strategies of risk management and asset building is important both from a theoretical and a practical standpoint of designing adequate policy instruments. Yet, although the relationship between remittances and financial services ranks high on the development policy agenda, there are still surprisingly few systematic studies on the topic. In particular, research so far failed to provide a clear picture on whether remittances have a positive impact on access to and the use of credit. In this paper, we test the hypothesis that remittances have an effect on the use of formal and informal financial services using Mexican household data.

A positive impact of remittances on loans may operate both through a demand-driven and a supply-driven channel. From the demand side, a more flexible budgetary constraint among remittance-receiving households might reduce their risk aversions and increase the propensity of potential borrowers to take up debt. From the lenders' point of view, an additional and relatively stable source of income from outside the local economy enhances the creditworthiness of borrowers. In Mexico, 37% of the labor force was self employed in 2005 (INEGI, 2014a). Because the income of these households is not easily verifiable, they are perceived as high-risk customers. On the other hand, 97% of all remittances are received through electronic transfers (Banxico, 2013) which makes them an easily traceable source of income. The fact that remittances markets on the Mexican side are dominated by banks (i.e. Banco Azteca, Banamex and BBV Bancomer) should provide formal lenders with an information advantage when working with remittance-receiving households. The offering of savings accounts to receivers of remittances might therefore lead to the provision of additional financial services in a second step, including loans. In principle, the same argument applies to informal lenders: A printed receipt, which households could later use with informal lenders as proof of income, typically accompanies the transfer of remittances. Everything else being equal, we therefore expect to find a positive impact of remittances on borrowing by households compared to a household with equal observable characteristics and no remittances.

Because poor households have limited access to formal loans and usually rely on various formal and informal sources for taking up credit, we do not restrict this hypothesis to loans from formal financial institutions. Whether remittances have effects on formal or informal lending is of high policy relevance. A positive effect on formal lending would be proof that remittances help deepening access to financial services. On the other hand, a positive effect only in informal lending indicates that although the demand for financial services rises with remittances, access to the banking sector in Mexico is limited; informing on the need for banks and regulators to find ways how to cater to receivers of remittances.

Putting forward this hypothesis does not exclude the possibility that remittances may also function as a substitute for credit, as argued elsewhere (Ambrosius & Cuecuecha, 2013). Rather, we claim that households mix and combine different formal and informal financial instruments. Although remittances function as insurance that may protect households from over-indebtedness in the face of negative events (Ambrosius & Cuecuecha, 2013), we expect that remittances and loans may also be complementary. Hence, our hypothesis implies that the collateral effect of remittances is not crowded out by a substitution effect.

The rest of the paper proceeds as follows: in the following Section 2, we introduce the Mexican case and describe our data sources. Section 3 explains our empirical strategy. Studying the effect of migration and remittances on the use of formal and informal financial services faces methodological challenges of selection bias (the observed and unobserved characteristics of remittance-receiving households differs from non-receiving households) reverse causalities (debt might itself be causal to migration, for example if migration is financed through debt or when migration is a strategy of escaping from debt, or remittances and debt may both respond to a third variable (e.g., health shocks, see Ambrosius & Cuecuecha, 2013), and specification bias (the complexity of migration and remittance decisions makes it difficult to select a reduced form equation free of it). As explained in more detail in Section 3, we employ several strategies in order to address these concerns. First, the detailed household panel data of the Mexican Family Life Survey allows us to follow the same households over time and to control for time-constant household fixed effects additional to a large number of time-varying socioeconomic characteristics and the shock history of households. Second, we employ an instrumental variable strategy, where we combine two instruments. We use exogenous variation in the labor market conditions in the US as an exogenous determinant of remittances (used similarly by Adams & Cuecuecha, 2010; Anzoategui et al., 2014; Yang, 2008 and others). As a second instrument, we follow previous studies (Demirgüç-Kunt et al., 2011; López Córdova, 2005; Woodruff & Zenteno, 2007) using distance to train lines as an instrument for migration and remittances between the US and Mexico. Access to transportation systems has been an important determinant of migration to the US during early migratory movements from Mexico. Due to the persistence of network effects, still today the migration intensity across Mexican regions is highly correlated with distance to train lines (Woodruff, 2007; cp. Demirgüç-Kunt et al., 2011, p. 230). In order to test the robustness of our results, we also employ alternative dependent variables. Section 4 presents the results. We confirm a strong effect of remittances on the ownership of savings account. Moreover, we find a strong and significant effect of remittances on the existence of debt and on recent borrowing. The instrumental strategy also reveals that the overall effect on borrowing is driven by

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