Full Length Article

Institutional quality and the financial inclusion-poverty alleviation link: Empirical evidence across countries

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Abstract

Institutional quality in the form of extractive or inclusive institutions influences economic outcomes. We examine the positive moderating effect of institutional quality on the relationship between financial inclusion and poverty alleviation over a sample of seventy-five developing and developed countries (2004−2017). We use six different financial inclusion measures together with an informal political institution variable, applying both cross-section and quantile analysis. We find that institutional quality intensifies the beneficial effects of financial inclusion on poverty rates. This effect is more pronounced in poorer economies than in wealthier ones. Our findings yield implications for policy makers seeking to tackle the institutional causes of poverty.

1. Introduction

The notion that "institutions matter" has been defended by economists such as Acemoglu et al. (2005), Nelson and Sampat (2001), and Rodrik et al., 2004). Institutions are known as "the rules of the game" (North, 1990) or the human environment (Dunning, 2006) that influence market participation. Institutions that support the development of markets are crucial for economic growth and poverty reduction (Dollar & Kraay, 2002; Enders & Hoover, 2003; Knack & Keefer, 1995; Ravallion & Chen, 2003; Tebaldi & Mohan, 2010). In particular, Asadullah and Savoia (2018) find that institutional improvement is a major catalyst for social progress and, more specifically, poverty reduction. In estimating the effects of institutions on economic conditions, Acemoglu et al. (2001) argue that it is the *quality* of institutions that matters. They propose the notion of extractive institutions, looking at countries with weak political institutions in the form of insecure property rights and distortionary policies and document that countries with "better" institutions, or inclusive institutions, achieve higher income. Therefore, institutional failures or a lack of institutional development constitute sources of market exclusion, market inefficiency, and misallocation of resources, leading to the incidence of poverty (Bastiaensen et al., 2005; Chong & Calderon, 2000; Grindle, 2004; Rodrik, 2000).

This paper explores the drivers of poverty alleviation. To do so, we depart from prior research, which identifies financial

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inclusion as a tool for mitigation of poverty (Demirgüç-Kunt et al., 2018). We argue that institutional quality can influence the benefits of financial inclusion for poverty alleviation.[1] Because poverty encompasses multiple dimensions (Lipton & Ravallion, 1995) that originate in various institutional failures (Hickey & Du Toit, 2013), we argue that it should be assessed from a multi-institutional perspective. Therefore, we explore the role of institutional quality in the form of controlling corruption, in strengthening the effect of financial inclusion to tackle poverty. Financial inclusion and institutional quality, represented by controlling corruption, are both critical aspects of poverty alleviation: corruption limits the development of other institutions and undermines the overall potential for advancement in ending poverty (Jetter & Parmeter, 2018), whereas limited financial inclusion hinders funding opportunities and affects economic prosperity (Blau, 2018; Mader, 2018; Madestam, 2014). Therefore, we argue that institutional quality can strengthen the role of financial institutions in efficiently fostering a reduction in poverty levels.

Several studies show that institutional quality is associated with economic growth (Acemoglu et al., 2002, 2005; Aghion et al., 2005; Docquier, 2014; Pande & Udry, 2005, p. 928) and income distribution (Altunbaş & Thornton, 2019; Chong & Calderon, 2000), which in turn can indirectly influence poverty reduction (Easterly & Levine, 2003; Klasen, 2008; Knack & Keefer, 1995; Tebaldi & Mohan, 2010). Institutions can also directly affect poverty reduction: for example, good governance structures increase the effectiveness of government expenditure (Grindle, 2004), through the productivity of labor and capital (Tebaldi and Mohan, 2010) and the extent of an entrepreneurial environment (Hasan et al., 2006). However, few empirical analyses consider the institutional influence on poverty by strengthening the positive effects of financial inclusion. As a result, whereas the beneficial impact of financial inclusion on poverty has been widely studied (Beck et al., 2007; Burgess & Pande, 2005; Demirgüç-Kunt et al., 2018; Gupta et al., 2002; Park & Mercado, 2015), the institutional moderators in this key relationship remain unexplored. To fill these important gaps in the literature, this paper examines the influence of institutional quality on the linkage between financial inclusion and poverty alleviation. In addition, we test whether this positive moderating effect is more pronounced in poorer countries than in richer ones. Thus, the innovation presented in this paper is its empirical suggestion that, in the presence of institutional quality, financial inclusion can address poverty more effectively.

We present a sample of seventy-five developed and developing countries over the period 2004–2017 and employ a three-stage methodology based on ordinary least squares (OLS), quantile regressions, with variables for aggregate financial inclusion and aggregate financial inclusion and corruption. Our

results suggest that institutional quality is a relevant condition in the relationship between financial inclusion and the incidence of poverty. Financial inclusion has a larger effect on poverty reduction in the presence of institutional quality. Moreover, we find that this effect is stronger in the poorer countries in our sample. It follows that this effect strengthens the case for enhanced institutional quality, because it can magnify the effect of financial inclusion on poverty reduction.

We contribute to the neoinstitutional literature in several ways. First, we focus on the impact of institutional quality on poverty, in contrast to the large concentration of studies that examine the relationship between institutions and economic growth (Acemoglu et al., 2002, 2005; Aghion et al., 2005; Docquier, 2014; Pande & Udry, 2005, p. 928). Second, by looking at both institutional quality and financial inclusion, we offer a rich approach for addressing poverty, in contrast to existing perspectives with only a single dimension. In particular, we look at corruption, related to informal institutions, in contrast to a narrower view (Casson et al., 2010; Helmke & Levitsky, 2004) in studies focused exclusively on the formal rules of the game, which enables us to enrich existing perspectives on tackling poverty. Third, we assess the positive characteristics of institutional quality in fighting poverty, which to the best of our knowledge has not been addressed to date. Although the relationship between poverty and, alternatively, financial inclusion and institutional quality has been analyzed separately (i.e., Gupta et al., 2002), the potentially beneficial moderating role of the latter remains unexamined. Fourth, we perform a cross-country analysis to account for the heterogeneity of institutions across countries. Finally, we contribute to the literature theoretically by constructing a variable for aggregate financial inclusion and for aggregate financial inclusion and institutional quality. These provide granularity on the effect that progress made in financial inclusion, in the presence of institutional quality, may have on the poverty headcount across different countries and poverty deciles.

The remainder of this paper is organized as follows: Section 2 presents the theoretical background and hypothesis development, followed by the empirical analysis in Section 3 and the results in Section 4. Section 5 discusses the results and ends with concluding remarks.

2. Can institutional quality strengthen the effects of financial inclusion on poverty reduction?

According to the neoinstitutional theory (North, 1990), institutional quality "enhances the effectiveness with which others operate, the economic returns to the system as a whole are greater than its component parts alone would generate" (Hall & Soskice, 2001, p. 27).

A country's institutional quality can be categorized by its extractive or inclusive institutional setting. Extractive political institutions concentrate power in the hands of a few, whereas inclusive political institutions consist in the broad distribution of political power (Acemoglu & Robinson, 2012). Extractive institutions or weak governance structures are often characterized by bureaucratic corruption (Johnson et al., 2002; La

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[1] Although this article refers to absolute poverty as measured according to the World Bank's international poverty line of $1.90 (in 2011 PPP) per capita per day, we refer to poverty mitigation and not to the more optimistic poverty elimination. We agree with Teffo (2008) that only absolute poverty can be eradicated, whereas both absolute and relative poverty can be mitigated.

Porta et al., 1997; Mauro, 1995; McMillan & Woodruff, 2002). Corruption, or the abuse of power for private benefit (Jones and Tarp, 2016; Kaufmann et al., 2010), is the origin of institutional failures through the generation of market inefficiencies and the misallocation of resources (Tebaldi & Mohan, 2010).

In turn, financial inclusion is of crucial relevance because it has been growing globally at twice the rate of other key institutional dimensions, such as education (improvements in adult literacy, quality of education, and school enrollment) and health (i.e., reduction in infant mortality) according to the World Bank over the period 2011–2017 (Demirgüç-Kunt et al., 2018). Financial inclusion refers to how widespread the access and use of formal financial services are (Demirgüç-Kunt et al., 2015, 2018). Because financial inclusion is a means to an end (Demirgüç-Kunt et al., 2018), a substantial body of literature has documented its beneficial effects on reduction in poverty (Beck et al., 2007; Burgess & Pande, 2005; Park & Mercado, 2015), via increased availability of financial instruments (Holden & Prokopeken, 2001). Empirical evidence has shown that financial inclusion can stimulate savings and investment (Demirgüç-Kunt et al., 2015; Jeanneney & Kpodar, 2011), insure against income and health shocks (Honohan and King, 2012), increase productivity (Jalilian & Kirkpatrick, 2002), and generate employment (Fadum, 2013). In other words, financial inclusion establishes a direct link between financial institutions and poverty.

However, extractive institutions, in particular, high corruption rates, might constitute a barrier in the transmission of financial inclusion efforts to poverty reduction. Corruption reflects a lack of institutional quality in a given country (Collier, 2002). Institutional quality is a major determinant of economic prosperity (Acemoglu et al., 2005; Easterly & Levine, 2003) and poverty reduction (Chong & Calderon, 2000; Tebaldi & Mohan, 2010). Several studies show that financial institutions are more effective when certain institutional quality conditions are met (Dutta & Roy, 2011; Honohan, 2004; Ndikumana, 2006). However, and in contrast to prior studies, we examine the role of institutional quality in strengthening the beneficial effects of financial inclusion on reduction in poverty, rather than looking at their simultaneous, yet independent effects. We argue that enhanced institutional quality—for example, a reduction in the discretion of a country's officials—might improve monitoring of borrowers, their ability to satisfy financial requirements, and their risk profile, leading the way for increased financial inclusion, which in turn may help in mitigating poverty.

Conversely, financial exclusion, together with a lack of institutional quality in the form of prevailing corruption, might oblige poor households to ask for credit from informal sources at a higher cost and at higher risks (Beck & de la Torre, 2007, p. 4026; Malbon, 2005). In fact, a rise in predatory lending (Carr & Kolluri, 2001; Honohan, 2004) is strongly associated with the intensity of poverty (Cartaya, 1994; Gasparini & Tornarolli, 2007). In turn, weak institutional quality, as shown by high corruption rates, constitutes a barrier to financial inclusion efforts. Where corruption prevails, greater informality exists (Shleifer & Vishny, 1999), hindering access to formal financial services (Demirgüç-Kunt et al., 2008) and leading to less effective financial institutions in terms of fund availability and its costs (Straub, 2005). In addition, corrupt governments lack credibility, which restrains entrepreneurs from investing (Roe & Siegel, 2011) and limits the potential impact on poverty reduction of enhanced financial inclusion. Thus, a decent level of financial inclusion in the presence of weak institutional quality might achieve little in terms of poverty alleviation. We therefore argue that the functioning of formal financial institutions (financial inclusion) and informal political institutions (control of corruption) might complement and reinforce each other in poverty reduction.

Hypothesis 1. *Institutional quality positively moderates the relationship between financial inclusion and poverty alleviation.*

The positive moderating effect of institutional quality between financial inclusion and poverty may be more pronounced in poorer countries than in wealthier ones. Beck et al. (2007) and Demirgüç-Kunt and Levine (2009) document that improvements in financial access disproportionately help the poorest deciles of the income distribution. Moreover, Ndikumana (2006) shows that weak institutional quality, represented by high corruption levels, has adverse distributional effects on the poor. Because richer countries show higher levels of financial inclusion and institutional quality (Demirgüç-Kunt et al., 2018), an improvement in both institutional settings might have a lower marginal impact on them than on poorer countries. Nevertheless, the different effects of financial inclusion that are conditional on institutional quality in richer and poorer countries remain unknown. Therefore, we argue that poorer countries with higher-quality institutions might benefit more than richer countries from the enhanced poverty alleviation arising from financial inclusion.

Hypothesis 2. *The positive moderating effect of institutional quality in the relationship between financial inclusion and poverty alleviation is stronger in poorer countries.*

3. Empirical analysis

3.1. Sample and description of variables

We propose an unbalanced panel with yearly data from 2004 to 2017 obtained from the World Bank— World Development Indicators dataset. Our sample is built for all the countries with data availability for the dependent variable *Poverty* (P_{it}) measured at the international poverty line of $1.90 per capita a day in 2011 purchasing power parity (PPP). Although we agree with Edward (2006) that income poverty lines can oversimplify the complexity of poverty, we also acknowledge, in line with the World Bank, that this methodology provides a globally standardized measure of poverty, suitable for our research purposes. Supplementary Table 1

shows the regional distribution of the observations in our sample for the dependent poverty variable, grouped following World Bank categories of country income levels.

Our key independent variables relate to financial inclusion from two perspectives: usage and access. Usage is captured by deposit accounts (deposit accounts with commercial banks per 1000 adults, DA_{it}), debit cards (total number of debit cards, D_{it}), lenders (with commercial banks per 1000 adults, L_{it}), and borrowers (at commercial banks per 1000 adults, Br_{it}). Access is measured by the number of automated teller machines per 100,000 adults (ATM_{it}) and the total number of branches (of commercial banks per 1000 sq. Km., B_{it}). All the financial indicators are lagged one period to capture the time needed for financial inclusion to affect poverty rates.

Institutions (I_{it}) constitute another key independent variable in our model. This dummy variable takes a value of 1 for countries with weaker institutions and 0 for countries with better institutional quality. The quality of institutions is measured by perceived corruption, or perceptions by individuals of the extent to which public power is exercised for private gain, according to the Worldwide Governance Indicators (WGI) (Ahlin and Pang, 2008). The values range from -2.5 for weaker to $+2.5$ for stronger institutions. We consider a country to have weak institutions if its WGI value is below the threshold of 1. The moderating effect of institutional quality on the relationship between financial inclusion and poverty is captured by the interaction between deposit accounts and institutional quality ($DA_{it} \times I_{it}$). This variable uses deposit accounts as an accurate proxy for financial inclusion because it constitutes a homogeneous financial product across countries, and it can be used for payments and credit (Allen et al., 2012, p. 6290). Later, for a robustness check, we use the other measures of financial inclusion in our dataset to create different interaction variables. A negative (positive) sign in the coefficient of the interaction terms implies stronger (weaker) influence of institutional quality on the link between financial inclusion and poverty.

We control for macroeconomic conditions by including annual GDP growth ($GDPg_{it}$), which captures the effect of short-term economic performance on poverty rates; GDP per capita ($GDPpc_{it}$) measured in constant dollars at the end of each year, which controls the effect of per capita income on poverty incidence across countries (Hasan et al., 2006; Honohan, 2004); and foreign direct investment as a percentage of GDP, both net inflows ($FDIin_{it}$) and outflows ($FDIout_{it}$), which measures the role of the external sector on poverty rates.

3.2. Methodology

The main specification captures the relationship between poverty rates and the selected determinants of financial inclusion and institutional quality. We include country and time controls to simulate fixed effects. We estimate the model using two different techniques: OLS and quantile regressions. Quantile regressions help to check the stability of the OLS results for the entire distribution across poorer and richer

countries. Finally, we construct two variables for aggregate financial inclusion. The primary regression specification is as follows:

$$P_{it} = \gamma_1 DA_{it} + \gamma_2 D_{it} + \gamma_3 ATM_{it} + \gamma_4 Br_{it} + \gamma_5 B_{it} + \gamma_6 L_{it}$$
$$+ \gamma_7 I_{it} + \gamma_8 GDPg_{it} + \gamma_9 GDPpc_{it} + \gamma_{10} FDIin_{it}$$
$$+ \gamma_{11} FDIout_{it} + \gamma_{12} DA{*}I_{it} + \alpha_i + \beta_t + u_{it}$$

Supplementary Table 2 presents the summary statistics, and Supplementary Table 3 lists the correlations, which shows that the model is not affected by multicollinearity issues.

4. Results

4.1. OLS estimations and robustness checks

Table 1 lists the results from the OLS estimation of the main model (Model 1). The variable *Institutions*, when considered alone, shows a positive relationship with the dependent variable, which indicates that the perception of corruption, that is, weak institutional quality, is associated with increased poverty rates. Moreover, model 1 suggests a negative and significant association between poverty rates and the interaction term, implying that institutional quality strengthens the beneficial effect of financial inclusion on reduction in poverty. These results support H1. The variables for financial inclusion also show a negative relationship with poverty rates, although only the variable for borrowers is found to be significant. This follow the McKinnon (1973) "conduit effect," in which financial inclusion has a positive effect on poverty rates, even when greater credit availability is not tapped, but savings are enhanced.

To check the robustness of our results, we develop several complementary analyses to rule out the possibility that the findings are driven by a particular submeasure of financial inclusion. Models 2, 3, 4, and 5 test whether the moderating effect of institutions on financial inclusion, proxied by deposit accounts, holds for the remaining variables for financial inclusion. In all models, the interaction term that shows the moderating effect of institutions is consistently negative and significant, which further confirms H1 and the robustness of model 1.

4.2. Quantile regressions

We estimate quantile regressions (Koenker & Bassett, 1978), to test whether the relationships suggested by our main model are constant for the entire distribution of poverty rates. Quantile regressions enable us to detect whether the independent variables influence the poorest deciles of the poverty distribution differently from the mean or from the richest deciles. This methodology is consistent with the OLS approach because it makes no assumptions about the distribution of the residuals.

Figs. 1 and 2 illustrate the coefficients for financial inclusion and for the interacted variables with institutional quality, respectively (y-axis), from poverty decile 0.1 to 0.9 (x-axis); a

Table 1
The beneficial moderating effect of institutional quality on the financial inclusion-poverty link.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Deposit accounts	−0.0612 (0.055)	−0.0652 (0.055)	−0.0940* (0.049)	−0.1018* (0.051)	−0.0776 (0.054)	−0.0842 (0.053)
Debit cards	0.0147 (0.020)	0.0193 (0.020)	0.0079 (0.017)	0.0099 (0.017)	0.0136 (0.018)	0.0110 (0.017)
ATMs	−0.0006 (0.006)	−0.0038 (0.007)	−0.0038 (0.006)	−0.0014 (0.006)	0.0007 (0.006)	−0.0012 (0.006)
Borrowers	−0.0165*** (0.005)	−0.0173*** (0.005)	−0.0143*** (0.004)	−0.0109*** (0.004)	−0.0157*** (0.005)	−0.0146*** (0.004)
Branches	−0.0066 (0.028)	0.0084 (0.027)	0.0314 (0.026)	0.0280 (0.027)	0.0125 (0.023)	0.0036 (0.024)
Loans	0.0043 (0.015)	0.0021 (0.016)	−0.0128 (0.015)	−0.0151 (0.016)	0.0050 (0.015)	0.0014 (0.016)
Institutions	2.1382* (1.167)	1.7330 (1.122)	0.7985 (1.097)	0.8638 (0.970)	2.0693* (1.096)	1.3479 (1.019)
GDP growth	−0.0121 (0.034)	0.0029 (0.032)	0.0065 (0.030)	0.0046 (0.027)	−0.0136 (0.033)	−0.0099 (0.030)
GDP per capita	−0.0003** (0.000)	−0.0002** (0.000)	−0.0003** (0.000)	−0.0002* (0.000)	−0.0002** (0.000)	−0.0002* (0.000)
FDI Inflows	−0.0313 (0.055)	−0.0186 (0.054)	−0.0026 (0.051)	−0.0287 (0.050)	−0.0331 (0.056)	−0.0192 (0.053)
FDI Outflows	0.0134 (0.054)	0.0029 (0.054)	−0.0116 (0.050)	0.0114 (0.049)	0.0226 (0.057)	0.0068 (0.051)
Institutions * Deposit accounts	−0.1189* (0.070)	−0.0970 (0.069)	−0.0633 (0.061)	−0.0672 (0.063)	−0.1203* (0.067)	−0.0824 (0.062)
Institutions* Debit cards		−0.0525* (0.027)				
Institutions * ATMs			−0.0284*** (0.010)			
Institutions * Borrowers				−0.0079*** (0.002)		
Institutions * Branches					−0.0515** (0.025)	
Institutions * Loans						−0.0369** (0.015)
Constant	16.8326*** (4.496)	25.8924*** (5.351)	29.9193*** (5.122)	29.9312*** (5.671)	13.9831*** (4.586)	28.1615*** (5.803)
Observations	115	115	115	115	115	115
R-squared	0.968	0.970	0.974	0.976	0.970	0.973

Notes: Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. Country and time controls included.

lower decile indicates lower poverty rates. The gray lines show the 95% confidence intervals. Fig. 1 suggests that the relationship between the variables for financial inclusion and poverty rates is not constant over the entire sample; financial inclusion has a stronger impact in alleviating poverty rates in poorer countries than in wealthier ones.

The coefficients of the interactions between institutional quality and debit cards, ATMs, branches, and loans with poverty rates fall as they move from the initial quantiles of the poverty distribution to the final ones. However, the interaction with borrowers and deposit accounts is more stable across the different deciles. The moderating effect of institutional quality between financial inclusion and poverty alleviation is stronger in countries that already have high poverty rates. Thus, financial inclusion in the presence of qualitative institutional contexts seems to have an impact on narrowing the gap between the poorest and the richest deciles, supporting H2.

4.3. Aggregate effect of the institutional quality moderation

We illustrate the aggregate (models 1 to 6) strengthening effect of institutional quality on the linkage between financial inclusion and poverty deciles (Figs. 3 and 4) using mean average deviation (Markowitz & Todd, 2000). Following Markowitz and Todd (2000), we develop a mean-variance variable: $H = (\sum_i^n C_i^2)^{1/2}$, where H is the total value, and C are the coefficients of each variable in our model. This measure should be more effective than just using absolute values because it eliminates more outliers thanks to the use of squared parameters. The y-axis in Fig. 3 captures the evolution of the coefficients for the independent variables in the main model (model 1) for every poverty decile on the x-axis. Fig. 4

shows the evolution of the aggregate coefficients of the independent variables and the interacted ones (models 2 to 6). The use of squared parameters also explains the transformation from negative coefficients (Figs. 1 and 2) to positive coefficients (Figs. 3 and 4).

Our aggregate variable enables us to examine cross-country information on seventy-five countries (both developed and developing) with different financial variables related to usage and access. This aggregate variable should be more accurate than using absolute values because it eliminates more outliers because of the use of squared parameters. Prior literature has proposed composite variables for financial inclusion (Yorulmaz, 2018) and financial development following the same rationale (Arora, 2012).

The findings further confirm the strength of the positive moderating effect of institutional quality in the financial inclusion-poverty nexus, especially for the poorer countries in our sample, in line with our hypotheses. The value of both variables increases for all quantiles above decile 0.5, which suggests that financial inclusion and its effect in the presence of high institutional quality plays a stronger role in determining poverty rates in poorer countries than in the most developed ones.

5. Discussion and conclusion

This paper argues that the influence of financial inclusion on poverty alleviation is related to the degree of institutional quality. Following the notion that "institutions matter" (Acemoglu et al., 2005; Nelson & Sampat, 2001; Rodrik et al., 2004), we suggest that an inclusive institutional setting strengthens the effects of financial inclusion in reducing poverty rates. Compared to the extensive body of evidence on the impact of institutions on economic growth, the influence of

(a) Deposit Accounts

(b) Debit Cards

(c) ATMs
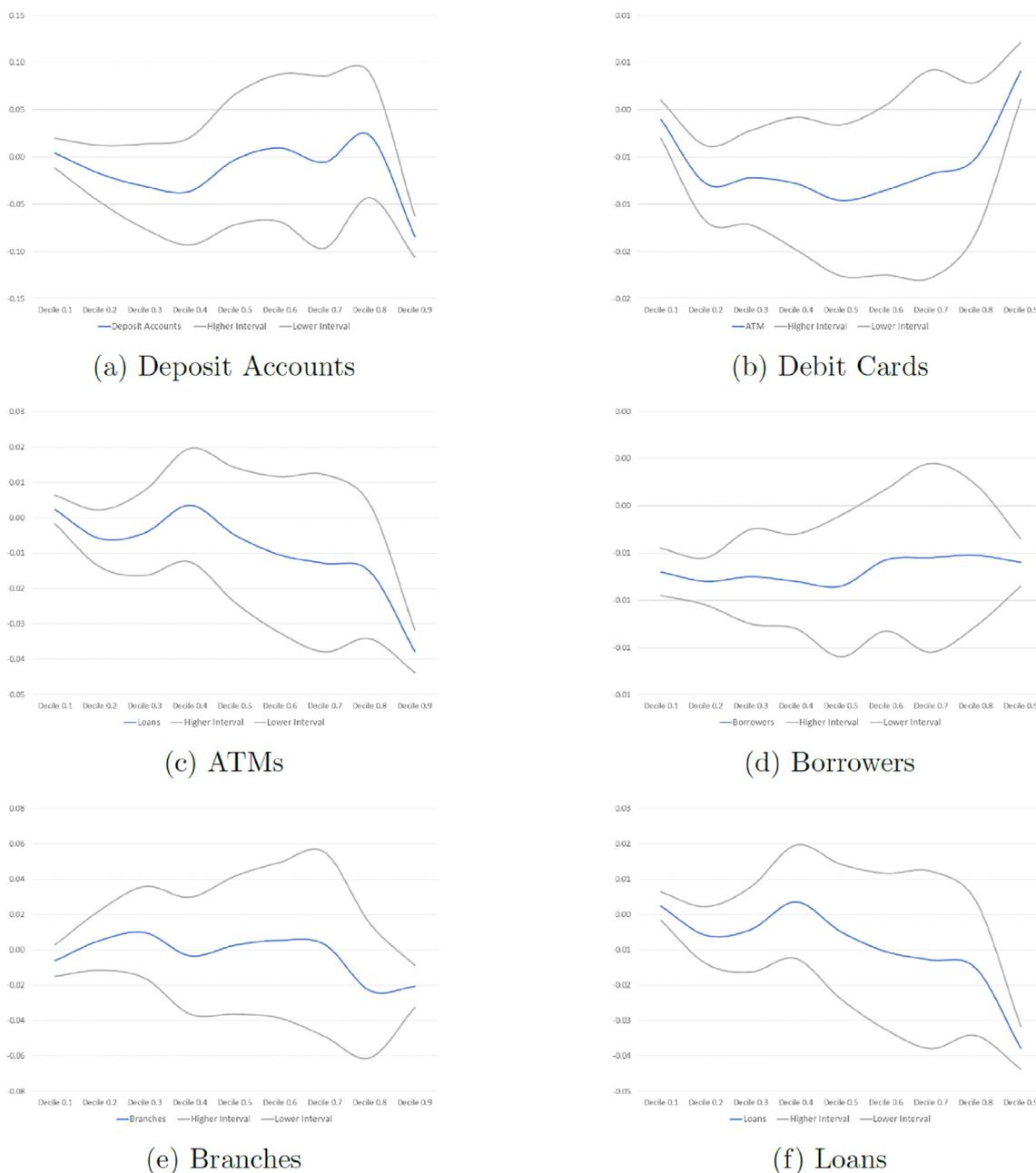
(d) Borrowers

(e) Branches

(f) Loans

Fig. 1. Quantile regression: The effect of financial inclusion on poverty alleviation across poverty deciles. *Note:* Gray lines show the 95 percent confidence intervals.

institutions on poverty has been underexamined (Law et al., 2013). Moreover, its conditional effect on the financial inclusion-poverty nexus is absent in the literature. We find that a qualitative-inclusive-institutional setting strengthens the effects of financial inclusion on reducing poverty rates. We provide evidence based on two different econometric methods with unbalanced panel data from a wide range of backgrounds, covering seventy-five developed and developing countries for the period 2004–2017. In addition, we propose two aggregate variables for the influence on poverty of financial inclusion individually and in combination with institutional quality, respectively. The result is robust to several alternative measures of financial inclusion and different econometric

techniques. We caution that these results are associational, but they still provide better understanding of an important institutional contingency that affects the financial inclusion–poverty nexus. In other words, policy initiatives that improve financial inclusion can have a wider effect on poverty alleviation when governments ensure an inclusive institutional framework. The reasons for this relationship include the fact that extractive institutions (Acemoglu & Robinson, 2012) hinder the effective functioning of financial inclusion in poverty reduction because a large proportion of economic activity occurs in the informal sector. Therefore, extractive institutions are critical barriers to benefiting from the effects of financial inclusion on poverty alleviation.

Institutional Quality * Deposit Accounts

(b) Institutional Quality * Debit Cards

(c) Institutional Quality * ATMs

(d) Institutional Quality * Borrowers

(e) Institutional Quality * Branches
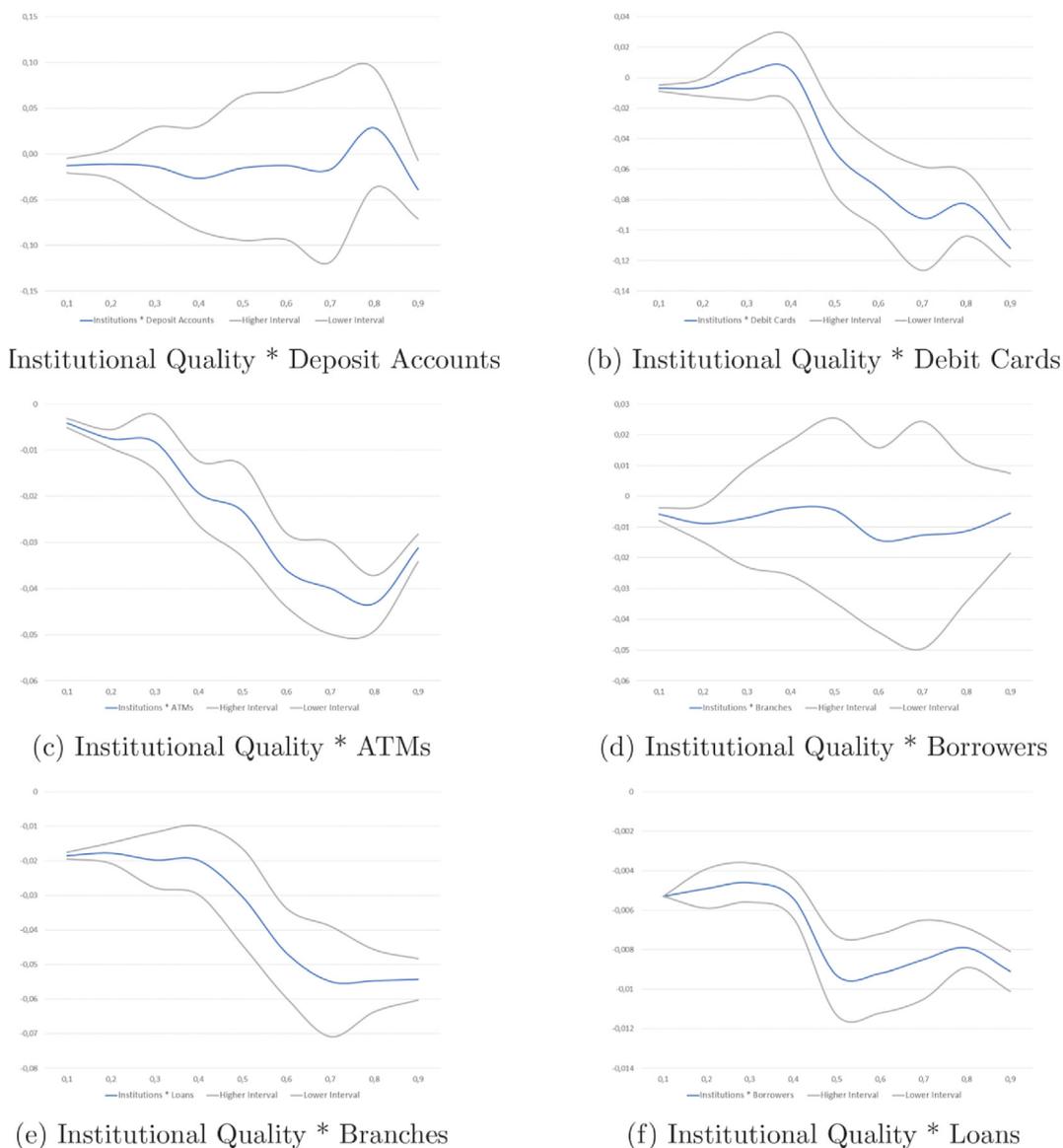
(f) Institutional Quality * Loans

Fig. 2. Quantile regression: Institutions' strengthening effect on financial inclusion-poverty alleviation across poverty deciles. *Note:* Gray lines show the 95 percent confidence intervals.

We also find that the influence of institutions on enhancing the positive effects of financial inclusion on poverty relief is not constant across countries but, rather, accrues to the poorest deciles. The poorer the host country is, the greater the relevance of institutional quality to benefiting fully from the positive effects of financial inclusion on poverty reduction. This might be due to the fact that institutional quality in the form of corruption affects the poor disproportionately (Ndikumana, 2006). In this context, the poorest deciles tend to experience larger improvements in both financial inclusion and institutional quality than the richest deciles, and the marginal effect on improved institutions decreases along with the level of a country's development. Therefore, the efforts to improve institutional quality by fighting corruption, combined with increased financial inclusion, can alleviate poverty in the poorest economies to a greater extent than the improvement of institutional quality alone.

The contextualization of poverty across institutional environments enables us to depict a comprehensive framework of its underlying causes, instead of its symptoms. By doing so, we respond to Keenaghan and Reilly's (2017) call for papers that provide critical thinking on the causes of poverty. Therefore, our findings can help in designing interventions that treat the causes of poverty, rather than the most common approach used in raising funds for charity, which focus on its symptoms. In other words, understanding the components of development is key in the effective implementation of development measures (Ahlin and Pang, 2008). Our results contribute to the debate, which calls for prioritizing the institutional domain in the fight against poverty: favoring either the development of financial inclusion or the promotion of strong governance. We find that governments should not rely solely on financial reforms; rather, they should target both
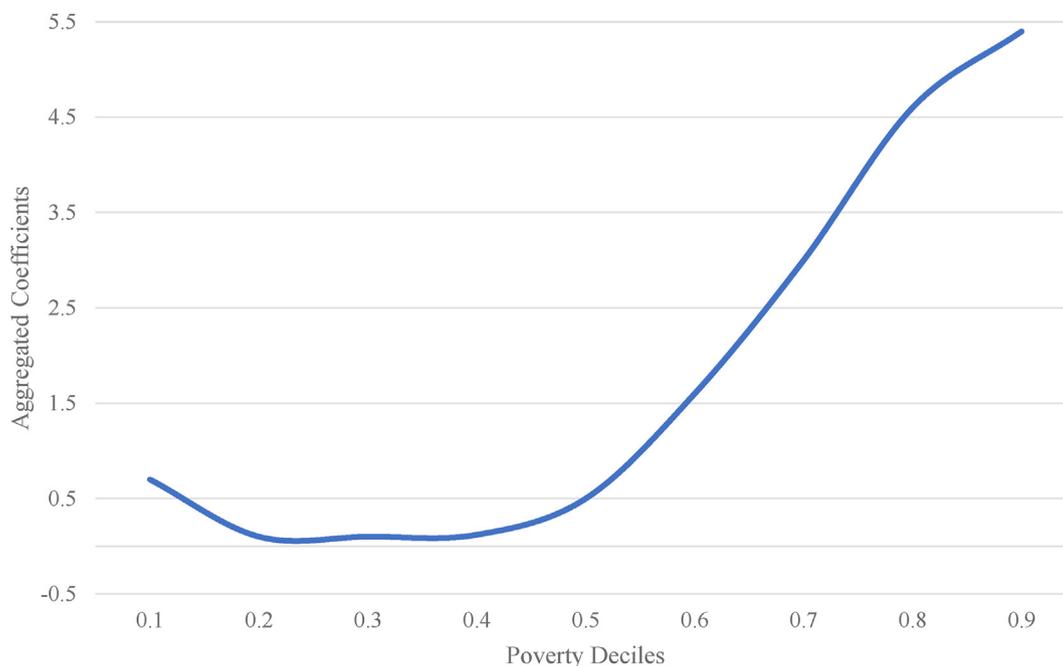
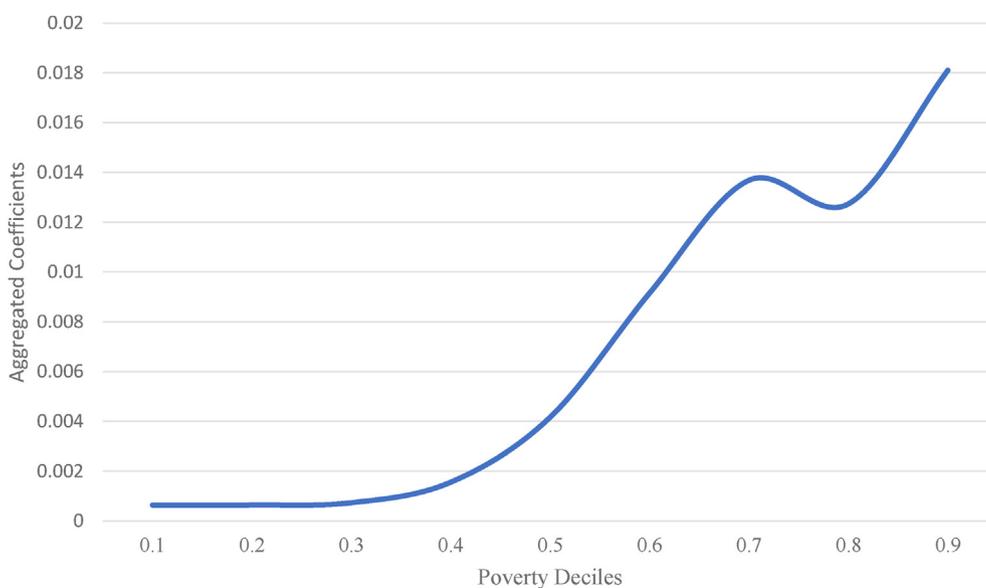Fig. 3. Aggregate financial inclusion indicator across poverty deciles.

Fig. 4. Aggregate indicator of institutions' strengthening effect on financial inclusion-poverty alleviation across poverty deciles.

institutional areas simultaneously. Alternatively, if only financial inclusion is promoted, the best results in terms of poverty alleviation are likely to be achieved in countries that already control corruption well. For example, policy initiatives that improve financial inclusion, such as allowing correspondent banking, exempting some individuals from onerous documentation, and facilitating government payments to bank accounts, can have a wider effect on poverty alleviation when governments ensure a supportive institutional framework aimed at reducing bureaucratic corruption. Another policy implication of our results is

related to the relevance of cross-sector involvement and public-private partnerships in mitigating institutional failures aimed at effectively reducing poverty. Financial inclusion can be addressed by the private sector (banks and nontraditional banks, i.e., fintech), whereas the source of institutional quality, reflected in the incidence of corruption, is public and private inefficiency (Nwabuzor, 2005).

Future research should explore the fit between institutional quality and other dimensions of financial development in combating poverty. Other interesting lines of research could depart from Rostow's (1959) modernization theories and the

wealth potential in countries that embrace technological development, extending Ozili's (2018) findings on digital financial inclusion for the purpose of poverty alleviation.

Our findings empirically illustrate and extend the neo-institutional assumptions regarding the interplay between institutions and poverty as a great social challenge (Buckley et al., 2017). To tackle poverty "we need to do more than just rely on economic growth" (Edward, 2006, p. 381). Therefore, becoming aware of the influential effects of institutional quality can help in prioritizing institutional reforms to better reap the benefits of financial inclusion for mitigating poverty.

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Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.bir.2021.03.006.

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