Remittances and Financial Inclusion: What Do We Learn from African Countries?

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1 Introduction

2 Literature review

3 Methodology

4 Empirical results

5 Robustness checks

6 Conclusion

Purpose and Definitions

- This study empirically examines the impact of remittances on the level of financial inclusion in selected sub-Saharan African countries over the period 2004-2019.

- Financial inclusion refers to all initiatives that make financial services available, accessible, and affordable to all individuals in an economy.(see Sarma and Pais,2011). It goes beyond improving access to credit to access to savings and insurance products and access to financial education.

- Remittances are the personal transfers of emigrants received by countries of origin. These transfers include either cash or kind sent by migrants and individuals in the country of origin.

Motivations (1)

- Remittances have become a significant source of external financing for developing countries.They reached about USD 548 billion in 2019, exceeding ODA and FDI (WDI,2019).
- Particularly, in SSA Countries remittances accounts overall for 20 percent of GDP and represent the second most important source for external flows after exports, (WDI, 2019).

Motivations (2)

- In addition, following the adoption of the Millennium Development Goals in 2000 by the United Nations and the Sustainable Development Goals in 2015, which have considered financial inclusion as a key foundation for development, Sub-Saharan African governments, have been gradually prompted to work towards a more inclusive financial system.

- Furthermore, it has been recognized that remittances from migrants play an important development role where financial inclusion can be the transmission channel (Global Migration Group, 2017).

- In this context, analysing the link between remittances and financial inclusion would be a subject of particular interest.

Contribution

Our study is complementary to a literature that addresses the impact of remittances on economic development and its interactions with the financial inclusion. We will contribute to this literature by using other indicators of financial inclusion (MFIs indicators) that can provide more informations on the financial system in SSA Countries and can lead to a better interpretation of the impact of remittances on financial inclusion in those countries.

Remittances and Financial inclusion (1)

- Recent developments in the literature have yielded few studies on the determinants of financial inclusion and its relationship with migrant remittances. On the theoretical level, this is insufficiently developed.
- Nevertheless, Anzoategui et al.(2014) theoretically identify two channels through which remittances can affect financial inclusion (revenue and investment).
- The empirical literature follows two strands :

Remittances and financial inclusion (2)

- The first is the analysis of the direct effects of remittances on financial inclusion (microeconomic level). Most of the study conclude that remittances positively impact financial inclusion on the one hand and a negatively or neutral impact on the other. (see,(Gupta wt al.2009; Aggarwal et al., 2011; Demirgüç-Kunt et al., 2014; Ambrosius and Cuecuecha, 2016 ; Ajefu and Ogebe, 2019))

- The second (macroeconomic level) direction taken by the empirical literature is to analyze the effects of financial inclusion in the relation between remittances and economic growth. (see,Orozco and Fedewa, 2006 ; Nyamongo et al.,2012; Chuc et al.,2021).

Data & sources

- Data were extracted from the Financial Access Survey (FAS) for the bank's financial inclusion indicators,
- MFIs financial inclusion indicators comes from the Microfinance Information Exchange, Inc., Market database (named MIX market),
- Drawing from the literature on the determinants of the supply and demand of financial services (see (Zeller,1995; Pal, 2002 ; Gupta et al.,2009)), control variables such as gross domestic product per capita, TTotal population, level of education and trade openness were retained and we collected them from World Development Indicators (WDI) as remittances flows.

Model

- We investigate the impact of remittances on financial inclusion indicators using the following equation :

$$IFI_{i,t} = \theta_1 IFI_{i,t-1} + \beta_1 Rem_{i,t} + \beta_2 X_{i,t} + \alpha_i + \mu_t + \epsilon_{i,t} \quad (1)$$

- Where $IFI_{i,t}$ is a financial inclusion indicator (in this analysis, we mobilize eight financial inclusion indicators) in country i at period t. θ_1 is the coefficient of lagged financial inclusion indicator.

- Rem represents the share of migrant remittances reported to GDP in country i in period t. We are mainly interested in β_1 which is the coefficient of Rem.

- X is the vector of control variables. α_i and μ_t are the country and time fixed effects, and $\epsilon_{i,t}$ an error term.

Empirical strategy

A significant concern when estimating equation(1) is the potential endogeneity.

We have to take into account those main problems to estimate equation(1) consistently:

1. The error term incorporates unobserved country heterogeneities λ_i, inducing a bias of the omitted variables if correlated with the other explanatory variables.
2. At the same time, the relationship between remittances and financial inclusion may not be one of cause and effect but of reverse causality. (Coulibaly,2015).
3. This equation (1) could generate a dynamic endogeneity bias because of the presence of the lagged value of the financial inclusion indicator among the explanatory variables; it can be correlated with the error term.

Empirical strategy

- We evaluate our dynamic panel model using the generalized moment method (GMM) estimator.

Our preferred estimator is the system-GMM.

It has been highlighted that the lagged values of variables in level as it is done with the difference-GMM estimator are sometimes imperfect instruments for variables in first differences

Impact of remittances on financial inclusion : baseline results

Dependent variable : Financial inclusion index

	ATM	Agency	Deposits	Loans	MFIs	(Log)NAB	Loans MFIs	Deposits
Dep.var(lagged)	0.790***	0.670***	0.878***	0.858***	0.795***	0.612***	0.820***	0.406***
	(0.013)	(0.090)	(0.099)	(0.066)	(0.022)	(0.099)	(0.022	(0.039)
Remittances	0.018*	0.008	0.019	0.152*	0.056***	0.164***	0.060***	0.130**
	(0.010)	(0.014)	(0.019)	(0.083)	(0.009)	(0.048)	(0.007)	(0.058)
GDP_per_capita	0.323***	0.320**	0.070	1.222	-0.101	0.172	0.001	0.352
	(0.057)	(0.130)	(0.067)	(1.452)	(0.138)	(0.139)	(0.143)	(1.192)
Trade_openness	0.001	0.006*	0.000	-0.024	-0.002	0.004*	-0.000	-0.005
	(0.001)	(0.004)	(0.000)	(0.018)	(0.002)	(0.002)	(0.001)	(0.015)
Population (Log)	0.083*	0.233	0.001	0.696	-0.103	0.046	0.147*	0.086
	(0.043)	(0.163)	(0.014)	(0.920)	(0.167)	(0.119)	(0.079)	(1.022)
Education	0.005***	0.007***	0.001	0.004	-0.007	0.002	0.008	0.020
	(0.002)	(0.003)	(0.001)	(0.012)	(0.007)	(0.008)	(0.006)	(0.017)
Constant	-4.180***	-6.984*	-0.329	-17.597	3.675	1.400	-3.874**	-8.212
	(1.204)	(3.913)	(0.547)	(19.069)	(2.352)	(2.619)	(1.531)	(8.188)
Observations	256	294	287	342	263	261	289	206
Groups	26	27	26	29	25	27	25	25
Instruments	17	10	11	15	19	11	22	17
AR1 (p-value)	0.007	0.021	0.003	0.006	0.002	0.001	0.023	0.007
AR2 (p-value)	0.612	0.198	0.334	0.182	0.272	0.232	0.232	0.236
Hansen (p-value)	0.241	0.326	0.900	0.460	0.217	0.529	0.675	0.437

Robust standard errors in parentheses
*** p¡0.01, ** p¡0.05, * p¡0.1

Robustness checks : Adding more controls variables

Dependent variable : Financial inclusion index

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Dep.var(lagged)	0.786***	0.981***	0.866***	0.968***	0.781***	0.821***	0.772***	0.731***
	(0.028)	(0.038)	(0.091)	(0.039)	(0.059)	(0.028)	(0.035)	(0.029)
Remittances	0.001	-0.053*	0.003	-0.027	0.037***	0.062***	0.865***	0.125***
	(0.008)	(0.030)	(0.012)	(0.093)	(0.011)	(0.009)	(0.030)	(0.020)
GDP_Per_Capita	0.331***	-0.372**	0.008	-0.623	0.246	0.222***	0.087***	0.071
	(0.063)	(0.182)	(0.068)	(0.657)	(0.421)	(0.039)	(0.012)	(0.113)
Trade_openness	0.006***	-0.001	0.001	-0.058***	0.001	0.007	0.004	-0.061***
	(0.001)	(0.004)	(0.001)	(0.021)	(0.002)	(0.007)	(0.005)	(0.011)
Population(Log)	0.244***	0.326	0.023	-1.339***	-0.332	0.043	0.561**	-1.627***
	(0.043)	(0.305)	(0.031)	(0.434)	(0.245)	(0.277)	(0.275)	(0.430)
Education	0.003	0.015**	0.000	-0.001	-0.002	-0.001	0.017**	-0.002
	(0.002)	(0.006)	(0.001)	(0.015)	(0.004)	(0.007)	(0.008)	(0.013)
Inflation	-0.002	0.034***	0.005	0.006	0.036**	-0.040	-0.050**	0.013
	(0.006)	(0.005)	(0.012)	(0.019)	(0.016)	(0.075)	(0.021)	(0.018)
Financial_opneness	0.156	1.892***	0.003	-0.821	0.372	-0.281**	-0.108	-0.526***
	(0.114)	(0.587)	(0.026)	(0.947)	(0.254)	(0.129)	(0.076)	(0.126)
Corruption	0.226***	0.376***	0.049	0.529	0.034	-0.945*	-1.071	0.085
	(0.052)	(0.111)	(0.077)	(1.453)	(0.103)	(0.562)	(0.740)	(0.354)
Political_Stability	0.009	0.026	0.001	0.081	0.104***	0.119	0.306	0.524*
	(0.038)	(0.141)	(0.020)	(0.326)	(0.033)	(0.458)	(0.211)	(0.271)
Constant	-6.278***	-2.244	-0.416	31.057***	2.964*	0.324	-10.385***	17.249**
	(0.991)	(5.114)	(0.622)	(11.255)	(1.604)	(5.674)	(3.749)	(6.795)
Observations	235	257	242	388	321	255	281	202
Groups	22	24	23	27	26	22	24	21
Instruments	18	22	13	13	19	18	14	12
AR1 (p-value)	0.045	0.000	0.008	0.085	0.001	0.020	0.006	0.029
AR2 (p-value)	0.615	0.393	0.336	0.164	0.235	0.494	0.110	0.256
Hansen (p-value)	0.344	0.246	0.725	0.466	0.156	0.187	0.292	0.526

Robust standard errors in parentheses
*** p¡0.01, ** p¡0.05, * p¡0.1

Robustness checks : FDI and ODA

Dependent variable : Financial inclusion index

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Dep.var(lagged)	0.806***	0.910***	0.931***	1.007***	0.885***	0.809***	0.602***	0.717***
	(0.024)	(0.017)	(0.029)	(0.026)	(0.095)	(0.074)	(0.055)	(0.076)
Remittances	0.015**	-0.053*	0.025	0.144**	0.037***	0.185***	0.135***	0.179***
	(0.007)	(0.030)	(0.029)	(0.073)	(0.011)	(0.042)	(0.041)	(0.057)
ODA	-0.006	0.001	-0.003	-0.099**	-0.014	-0.006	0.050*	-0.006
	(0.005)	(0.025)	(0.005)	(0.044)	(0.020)	(0.009)	(0.029)	(0.024)
FDI	0.001	0.008*	-0.003**	-0.003	-0.004	-0.012**	0.012	0.023**
	(0.001)	(0.005)	(0.001)	(0.019)	(0.008)	(0.005)	(0.008)	(0.010)
Constant	-6.278***	-2.244	-0.416	31.057***	2.964*	0.324	-10.385***	17.249**
	(0.991)	(5.114)	(0.622)	(11.255)	(1.604)	(5.674)	(3.749)	(6.795)
Observations	218	255	248	305	321	281	255	213
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Groups	23	24	23	27	24	25	22	19
Instruments	17	19	13	19	13	13	14	12
AR1 (p-value)	0.045	0.000	0.008	0.085	0.002	0.017	0.024	0.087
AR2 (p-value)	0.615	0.393	0.336	0.164	0.126	0.469	0.319	0.239
Hansen (p-value)	0.344	0.246	0.725	0.466	0.691	0.826	0.927	0.360

Robust standard errors in parentheses
*** p¡0.01, ** p¡0.05, * p¡0.1

Robustness checks : Heterogeneity

Dependent variable : Financial inclusion index

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Dep.var (Lagged)	0.808***	0.816***	0.919***	0.939***	0.826***	0.535***	0.736***	0.602***
	(0.013)	(0.016)	(0.047)	(0.023)	(0.020)	(0.099)	(0.044)	(0.085)
Remittances	0.016**	0.012***	0.016	0.099***	0.027***	0.199***	0.071*	0.175***
	(0.006)	(0.005)	(0.014)	(0.023)	(0.010)	(0.033)	(0.037)	(0.028)
GDP_per_capita	0.354***	0.086	0.032	0.687	-0.395***	-0.365	0.365	0.363
	(0.052)	(0.057)	(0.027)	(0.713)	(0.092)	(0.422)	(1.031)	(1.222)
Trade_Openness	-0.022	0.133**	0.000	-0.025***	0.042	0.004*	-0.004	-0.030**
	(0.039)	(0.053)	(0.000)	(0.004)	(0.082)	(0.002)	(0.010)	(0.014)
Population (Log)	0.015	0.007	0.005	-0.401**	0.181***	0.078	-1.604	-0.356
	(0.022)	(0.025)	(0.020)	(0.197)	(0.057)	(0.244)	(1.033)	(0.761)
Education	0.005***	0.005***	0.000	-0.009	0.001	0.006	0.047*	0.007
	(0.002)	(0.001)	(0.000)	(0.019)	(0.001)	(0.014)	(0.027)	(0.008)
Constant	-3.157***	-1.577**	-0.151	4.579	0.033	5.165	18.530*	2.600
	(0.849)	(0.786)	(0.335)	(5.277)	(0.943)	(3.199)	(10.931)	(5.811)
Observations	182	214	207	262	214	144	199	115
Groups	20	21	20	24	21	18	20	17
Instruments	17	18	11	20	19	12	12	14
AR1 (p-value)	0.03	0.015	0.014	0.039	0.004	0.036	0.043	0.032
AR2 (p-value)	0.575	0.236	0.284	0.337	0.310	0.642	0.196	0.331
Hansen (p-value)	0.328	0.269	0.589	0.453	0.549	0.784	0.369	0.482

Robust standard errors in parentheses
*** p¡0.01, ** p¡0.05, * p¡0.1

Transmissions Channels validity checks

Scenario 1

	[Banks]	[Deposits]	[MFIs]	[Deposits]
Dep. var (lagged)	0.909***	0.811***	0.924***	1.007***
	(0.041)	(0.039)	(0.064)	(0.026)
Gdp_per_capita	0.719*	0.099**	0.471***	0.708***
	(0.390)	(0.046)	(0.166)	(0.236)
Investment	0.993**	0.004	0.010	0.580**
	(0.441)	(0.005)	(0.011)	(0.236)
GNI_coef.	-0.439	-0.004**	-0.520***	-0.007
	(0.515)	(0.002)	(0.154)	(0.010)
Observations	279	272	305	235
Groups	26	25	25	20
Instruments	14	19	13	18
AR1 (p-value)	0.062	0.003	0.001	0.100
AR2 (p-value)	0.342	0.199	0.116	0.291
Hansen (p-value)	0.247	0.984	0.007	0.628

Scenario 2

	GDP_per_capita	Investment	Gni_coef.
Dep. var (lagged)	0.971***	0.798***	0.870***
	(0.012)	(0.022)	(0.037)
Remittances	0.990***	0.043	-0.010**
	(0.776)	(0.091)	(0.004)
Observations	450	406	405
Groups	30	28	28
Instruments	14	14	11
AR1 (p-value)	0.009	0.029	0.092
AR2 (p-value)	0.672	0.207	0.331
Hansen (p-value)	0.975	0.117	0.521

Conclusion (1)

- This study analyzes the impact of remittances on financial inclusion in SSA countries over the period 2004-2019. In particular, we analyzed the impact of remittances on the level of financial inclusion by highlighting heterogeneities depending on the service provider (banks versus microfinance institutions).

- Overall, we find that remittances have a positive impact on financial inclusion in its various dimensions with amplified effects on the indicators of use and access of financial services with MFIs rather than those concerning banks.

Conclusion (2)

- Our findings allow us to suggest significant recommendations.
  - To benefit from remittances, governments will need to implement a policy of attracting remittances to formal channels by removing barriers and reducing transaction costs.
  - In order to lead these remittances flows to productive sectors, government should established a regulatory environment that fosters the development of financial institutions which offer services adapted to the needs of the population, such as MFIs.

Thank you for your attention