Financial inclusion and growth

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Keywords
Financial inclusion, Growth and Development, Economic performance

Abstract

Most of developing economies have made recently tremendous efforts to formalize financial services to the young generation and a lot of studies have been made to see the importance of financial inclusion in the development and growth of economies. Only few of them succeeded in demonstrating the channels that will lead directly from financial inclusion to growth. While we agree that financial inclusion is an important problem in our modern economy, few improvements have been done as to spread financial literacy and financial intermediaries are still at the primary stage limited to microcredit in many developing countries.

This paper studies the impact of financial inclusion on the growth of the economies in developing countries such as the MENA and the BRICS region and try to identify the channels of transmission between financial literacy, financial intermediaries and growth. Even though recent findings show that the impact of financial inclusion on economic performance was far below expectations and did not contribute to reach some goals, this paper will try to introduce new nuances to the findings of this contribution to growth through direct and indirect contribution and check if financial inclusion matters in terms of development and growth.

This paper uses a VAR regression in order to quantify the relationship between financial inclusion in terms of financial activities, financial literacy and growth and to study its impact on the economic growth in the MENAregion. Our Finding showed the importance of financial inclusion in this part of the world however our data are limited.

1. Introduction

Early in 1911 Joseph Schumpeter stated that services provided by financial intermediaries are essential for technological innovation and economic development, financial education should be considered as an essential tool and a vital component of the financial system in general and for the financial intermediaries in particular.

Later on and in the year 2011, Ben Bernanke stated almost the same thing:*"In our dynamic and complex financial market place, financial education must be a life-long pursuit that enables consumers of all ages and economic positions to stay attuned to changes in their financial need and circumstances and to take advantage of products and services that best meet their goals. Well-informed consumers who can serve as their own advocates, are one of the best lines of defense against the proliferation of financial products and services that are unsuitable, unnecessarily costly, or abusive"* Former U.S Federal Reserve Board Chairman Ben Bernanke (2011:2).

Studies showed that many countries, both developed and developing, do face the same issues in terms of financial inclusion. However the implications between high and low income countries differ. A study done for the World Bank by Lisa XU showed that in high income countries financial literacy is correlated with retirement planning, a sophisticated investment behavior and has macroeconomic implications while in low income countries financial literacy is correlated with having a bank account and affects insurance take-up.

As to the impact of financial growth and development, an analysis done by Douglas Pearce for the World Bank showed that financial inclusion is a crucial element for the competitiveness of the whole MENA region, for increasing income, decreasing poverty and creating employment. However and based on the same study the access of the Middle East and North Africa (MENA) to financial services is limited andtheir financial inclusion is characterized by NGO-dominated microcredit sectors .Also improvements made in terms of financial literacy is still limited to few countries mainly Morocco with promises done by Egypt and Lebanon to improve this sector is still preliminary.

2. Literature review

Different studies on the relationship between financial intermediaries and growth pointed out to non-linearities while others like Arcand, Berkes and Panizza (2011) find out that the finance and growth relationship turns negative for high income countries. De Gregorio and Guidotti (1995) show that in high-income countries financial depth is positively correlated with output growth over the 1960-1985 period but that the correlation between financial depth and growth becomes negative for the 1970-85 period. They suggest that high income countries may have reached the point at which financial depth no longer contributes to increasing the efficiency of investment while financial literature is still young and the effects and consequences of its importance on growth is not yet confirmed.

Lusardi and Mitchell (2014) endogenized financial knowledge and noticed that it has important implications for welfare. Authors like Delavande, Rohwedder and Willis (2008) begun to examine the decision to acquire financial literacy and to study the links between financial knowledge, saving and investment behavior. Sharma (2015) studied the nexus between the vast dimensions of financial inclusion and economic development of the emerging Indian economy and his results suggested that there is apositive association between economic growth and financial inclusion specifically banking penetration and availability of banking services. According to his finding financial inclusion plays a key role in developing a strong and efficient financial structure which facilitates the growth of an economy.

The National Strategy for Financial Literacy published in 2006the " Taking ownership of the Future" and reached some conclusions on the how consumers can be more efficient if they are well equipped in terms of financial literacy saying that consumers can become efficient managers of credit if they are equipped with a solid understanding of and comfort level with the credit system.

Based on the review of financial literacy studies done by Capuano and Ramsey(2011) they categorized various benefits of financial literacy into three main categories of beneficiaries: individuals, financial system ,the economy and the community. They noticed that the benefits of financial literacy on the economy can be translated by a greater competition, a market discipline and a coverage of risk.Sarva (2014) also underscored the necessity and importance of financial literacy for the growth of the economy arguing that better informed consumers make more effective choices.
Engelbrecht(2011) showed that there are evidences that lack of financial literacy in the population affected the realization of poverty reduction and welfare improvements programs.

Also education can be quite influential in the financial behavior of individuals and can contribute to a better performance of the economy, research showed that educated people are more likely to own stocks and less prone to use high cost borrowing (Haliassos and Bertaut 1995- Lusardi and de BassaScheresberg 2013). Also studies done by Bernheimand Scholz (1993) showed a very strong positive correlation between education and wealth holding. Klapper,Lusardi and Panos(2012) found that financial literacy affect a variety of economic indicators including having a bank account ,using bank credit and having spending capacity.

As to the importance of financial intermediary on economic growth, a well-established literature showed that financial deepening could be considered as a critical part of the development process in a country. Also the literature provided some insights on the channels through which finance can foster growth. The literature affirms a positive effect of the financial sector on economic growth at the industry and country levels (king and Levine (1993) and that the purpose is to reduce income inequality Beck, Levine andLoayza 2010 said that finance has an important impact on growth through productivity growth and resource allocation. Kai and Hamori (2009) analyze 61 developing countries and give evidence that microfinance works through easing credit constraints and hence reduce income inequality.

Although there is by now a large literature showing that financial literacy plays a positive role in promoting economic development there are also a few papers that question the robustness of the finance-growth nexus. Demetriades and Hussein (1996) find no evidence of a causal relationship going from finance to growth. Arestis and Demetriades (1997) and Arestis et al. (2001) discuss how institutional factors may affect the relationship between finance and growth. Demetriades and Law (2006) show that financial depth does not affect growth in countries with poor institutions and an interesting finding by Rousseau and Wachtel (2002) showed that finance has no effect on growth in countries with double digit inflation. . Finally Rousseau and Wachtel (2011) find a vanishing effect of financial depth on GDP growth over the 1965-2004 period.

Finally little is known about the direction of causality between financialinclusion and growth andon how can financial inclusion be transferred to growth. If in some studies evidence showed some Granger causality running directly from financial inclusion to economic growth, the transfer mechanism remains doubtful and no final conclusion could be done about the causality direction.
A study done by Maksudova (2010) showed that the transfer mechanism differ by income group and therefore by the development stage of the country. Many scenarios are possible in any finance and growth analysis and the main concern is to handle simultaneity and identify the direction of causality between financial inclusion and macroeconomic fundamentals.

3. Methodology

A study done by Shan, Morris and Sun (2011) uses a granger causality procedure to investigate the relationship between financial development and growth. The authors estimate avector auto regression (VAR) model for nine OECD countries and china. They argue that a time series approach is superior to a cross-sectional one and the VAR framework avoids technical problems common in other time series models. Evidence is presented of bidirectional causality between financial development and growth in half of the countries and reverse causality in three others. There is little support for the hypothesis that finance" leads" growth, and caution must be exercised in making general conclusions about the relationship.

A study done by Saab and Al Daia (2015) on micro financing and growth using the same VAR on the MENA region do not confirm a relationship between micro financing and growth. Also, we couldn't obtain a robust answer whether microfinance matters. The direction of causality remains ambiguous as shown by extending the analysis of multivariable causality through the technique of vector auto regression (VAR). The study shows that there is no clear dynamic between the variables.

A report by Mc Kinsey &co, "estimated the impact of technology on growth to be 6% i.eadding $3.7 trillion to the GDP of emerging economies by the year 2025.

Our model uses a similar approach to Shan, Morris and Sun (2011) (VAR) however the data are limited and not all the MENA region has reliable statistics. Our focus will be mainly on Lebanon, Egypt, Jordan and Morocco and Tunisia. As to quantify the benefits of technology and digital finance on the GDP growth we took the BRICS countries as an example since data for the MENA region are not sufficient. Mobile phones will be used as a variable in the case of the BRICS economies. Quantifying the benefits of digital financing will include some other variables like Debit card, credit card for people above the age of 15years old.

4. Data

The discrepancy among the MENA market occurs at their development level as some are showing high levels of outreach and scale like in Egypt and Morocco while some others are still at the early stages like in Iraq, Sudan and Syria. The latest data (dates) showed good improvements in terms of the amount borrowed as well as the number of borrowers. If Morocco and Egypt have the biggest number of MFI we can notice that Morocco is ranking first in terms of number of borrowers as well as the Gross loan portfolio. In terms of percentage of number of borrowers to population, Morocco exceeds Egypt by far, which highlight the importance of the role of MFI in the economy of Morocco. However this region continues to be one of the smallest markets in terms of MFI and loan portfolio. Its financial literacy is still at an early stage and only Morocco showed some improvement since 2013. Other Countries like The Palestine Monetary authority, Egypt and Lebanon did some promises however no particular results showed up till now.

As to the measurement of Financial literacy many studies have be done focusing mainly on test-based and self-assessed measures . Other approaches tried to construct an index of financial sophistication showing if individuals with some knowledge succumb to different types of financial "mistakes"like Calvet et al (2009). Our analysis will take into consideration some variables that can show a certain sophistication as to the use of financial instruments and if they have access to some lending facilities.

Financial inclusion data on the MENA region comes mainly from the Mix market.org, the World Development Indicators (WDI) and the Global Findexdata base of the World Bank (2014). We will study the impact of Interest rate spread, Credit to GDP on the Gross loan to the MFI and the average loan size compared to the growth rate in order to see if the performance of these institutions helped to promote growth in the MENA region .Some variables related to financial literacy like account at a financial institution, borrowing money from a financial institution, use of a credit card, and mobile account will be used to see if financial sophistication matters in terms of development and growth.

5. MODEL

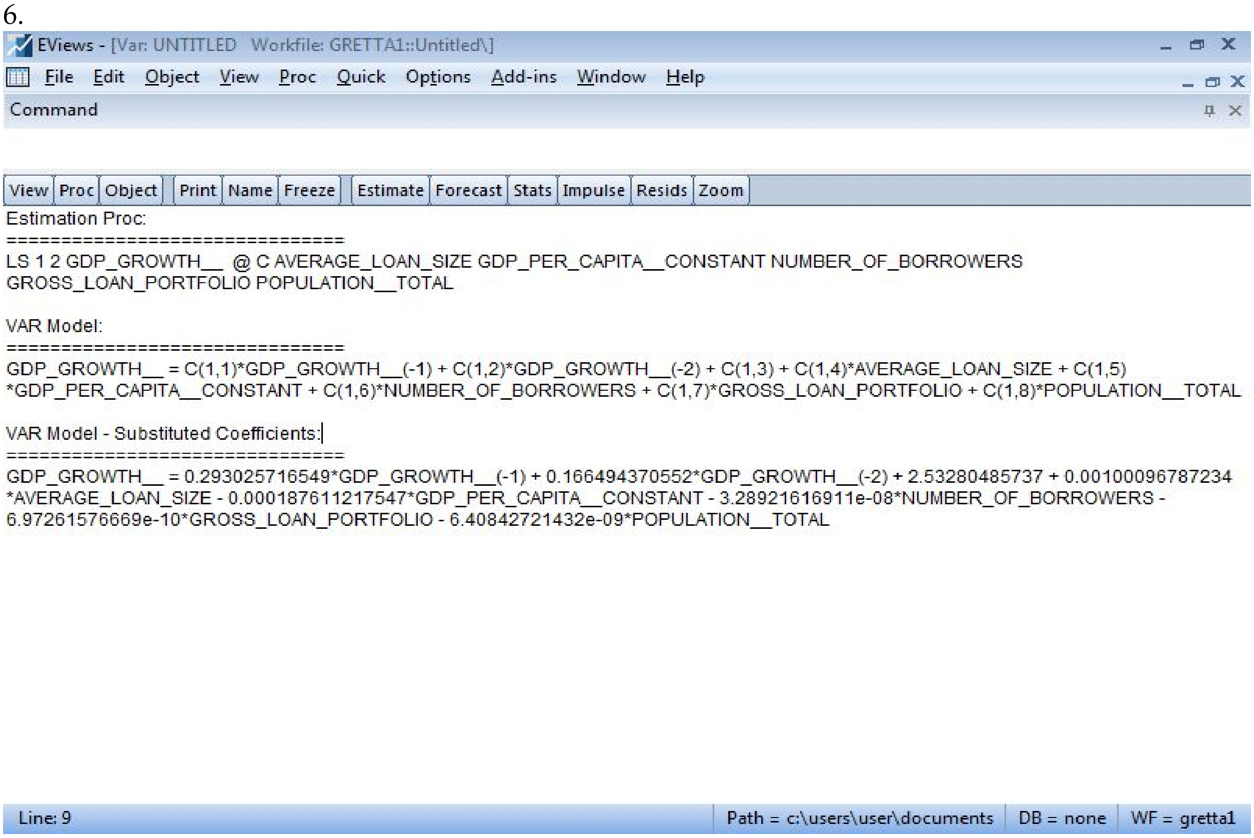
The first part of the model is a VAR analysis using variables such as credit, borrowing, average loan size and their impact on economic growth. While the second part will take into consideration other variables with other countries (data are missing for the sample of countries under scrutiny)

Vector Autoregression Estimates
Date: 03/06/17 Time: 11:48
Sample (adjusted): 1999 2014
Included observations: 75 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	GDP_GROWTH__
GDP_GROWTH__(-1)	0.293026
	(0.11637)
	[2.51801]
GDP_GROWTH__(-2)	0.166494
	(0.11407)
	[1.45957]
C	2.532805
	(1.19791)
	[2.11435]
AVERAGE_LOAN_SIZE	0.001001
	(0.00081)
	[1.22914]
GDP_PER_CAPITA__CONSTANT	-0.000188
	(0.00021)
	[-0.89299]

NUMBER_OF_BORROWERS	-3.29E-08
	(1.0E-07)
	[-0.32658]
GROSS_LOAN_PORTFOLIO	-6.97E-10
	(1.6E-09)
	[-0.43256]
POPULATION__TOTAL	-6.41E-09
	(1.7E-08)
	[-0.37746]
R-squared	0.192704
Adj. R-squared	0.108360
Sum sq. resids	352.8592
S.E. equation	2.294898
F-statistic	2.284732
Log likelihood	-164.4922
Akaike AIC	4.599791
Schwarz SC	4.846990
Mean dependent	4.429846
S.D. dependent	2.430348

6.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View Proc Object Print Name Freeze Estimate Forecast Stats Impulse Resids Zoom

Estimation Proc:
===============================
LS 1 2 GDP_GROWTH__ @ C AVERAGE_LOAN_SIZE GDP_PER_CAPITA__CONSTANT NUMBER_OF_BORROWERS GROSS_LOAN_PORTFOLIO POPULATION__TOTAL

VAR Model:
===============================
GDP_GROWTH__ = C(1,1)*GDP_GROWTH__(-1) + C(1,2)*GDP_GROWTH__(-2) + C(1,3) + C(1,4)*AVERAGE_LOAN_SIZE + C(1,5) *GDP_PER_CAPITA__CONSTANT + C(1,6)*NUMBER_OF_BORROWERS + C(1,7)*GROSS_LOAN_PORTFOLIO + C(1,8)*POPULATION__TOTAL

VAR Model - Substituted Coefficients:
===============================
GDP_GROWTH__ = 0.293025716549*GDP_GROWTH__(-1) + 0.166494370552*GDP_GROWTH__(-2) + 2.53280485737 + 0.00100096787234 *AVERAGE_LOAN_SIZE - 0.000187611217547*GDP_PER_CAPITA__CONSTANT - 3.28921616911e-08*NUMBER_OF_BORROWERS - 6.97261576669e-10*GROSS_LOAN_PORTFOLIO - 6.40842721432e-09*POPULATION__TOTAL

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In the second part and in order to quantify the impact of financial sophistication on the GDP growth of a sample of the MENA economies, we will use variables such as mobile account, credit card for people above 15 years old. A causality run will help to see if there is causality between the GNI per capita and financial sophistication.

Dependent Variable: GNI_PER_CAPITA__ATLAS_ME
Method: Least Squares
Date: 03/13/17 Time: 11:52
Sample (adjusted): 3 15
Included observations: 3 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MOBILE_ACCOUNT____AGE_15	1238.333	1963.993	0.630518	0.6419
CREDIT_CARD____AGE_15___	749.3848	224.0450	3.344796	0.1849

R-squared	0.848616	Mean dependent var	5736.667
Adjusted R-squared	0.697233	S.D. dependent var	3618.595
S.E. of regression	1991.106	Akaike info criterion	18.26549
Sum squared resid	3964503.	Schwarz criterion	17.66456
Log likelihood	-25.39823	Hannan-Quinn criter.	17.05755

Pairwise Granger Causality Tests
Date: 03/13/17 Time: 11:44
Sample: 1 19
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
GNI_PER_CAPITA__ATLAS_ME does not Granger Cause CREDIT_CARD____AGE_15___	1	NA	NA
CREDIT_CARD____AGE_15___ does not Granger Cause GNI_PER_CAPITA__ATLAS_ME		NA	NA
MOBILE_ACCOUNT____AGE_15 does not Granger Cause CREDIT_CARD____AGE_15___	0	0.00000	0.0000
CREDIT_CARD____AGE_15___ does not Granger Cause MOBILE_ACCOUNT____AGE_15		0.00000	0.0000
MOBILE_ACCOUNT____AGE_15 does not Granger Cause GNI_PER_CAPITA__ATLAS_ME	2	0.00000	0.0000
GNI_PER_CAPITA__ATLAS_ME does not Granger Cause MOBILE_ACCOUNT____AGE_15		0.00000	0.0000

7. Findings

Our results show some interesting points like the VAR analysis which is explaining the impact of financial intermediaries on growth. While the second part showed no particular significance for the credit cardalso the Mobile account is not significant. Causality is important since it shows that it is bidirectional between Credit card, mobile account and GNI- all of them significant.

Availability of data is limited as well as the number of years taken into consideration. A future study will focus on Financial literacy through a questionnaire to be distributed in the MENA region

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