

The impact of financial inclusion on economic growth in Kosovo

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Abstract

The aim of this paper is to examine the impact of financial inclusion products in economic growth in Kosovo. The paper tries to indentify if financial retail products or services: bank branches, payment terminals (ATM and POS) and electronic payment instruments and transactions (E-banking), have impact in economic growth, expressed by real GDP in Kosovo. The data used in this paper are taken from the Central Bank of the Republic of Kosovo, over the period 2007-2019. The study is original in nature and makes effort to promote increasing financial inclusion in Kosovo, which creates many possibilities for households and businesses to have better access to financial retail products, increase payments, savings and investments which lead to economic prosperity and growth. The findings of this paper will be of value for institutions in Kosovo in order to develop the financial inclusion products thus contribute to economic growth in country.

Keywords: Financial inclusion, Atm, Pos, E-banking, economic growth.

Introduction

The relationship between financial development and economic growth has remained an important issue of debate since the pioneering work of Goldsmith 1969, Mc Kinnon 1973 and Shaw 1973. Financial systems were identified by financial size or depth, expressed through different indicators, like liquid liabilities and bank assets, deposits and private credit. (Levine,R., 1997).

But, new theories of financial development, except financial depth indicators, emphasize the role of financial inclusion as one important segment of financial development. The pioneers of financial inclusion are authors Galor and Zeira 1993; and Banerjee and Newman 1993, who have created the conceptual background for theory of financial access, as an important segment of financial development (Galor,O.&Zeira,J, 1993).

The researchers of World Bank have developed the new framework for developed financial systems, including financial depth, financial inclusion, financial efficiency and financial stability. According to Global Financial Development Database, financial inclusion, including financial depth, financial efficiency and financial stability, are four measures of financial development, everyone including different financial indicators, both for financial institutions and financial markets. (Cihak,M.,Demirguc-Kunt,A.,Feyen, E.&Levine,R, 2012).

During the last two decades, many countries have engaged in activities to improve financial development and especially financial inclusion products and services. At the country level, about two-thirds of regulatory and supervisory agencies are now charged with enhancing financial inclusion.

So, what is financial inclusion? Financial inclusion is defined as the proportion of individuals, households and businesses that have access or use financial services and products, managing bank risk too. Financial inclusion means that individuals and businesses have access, or use variety of financial products or services, like transaction payments, savings and credit facilities, insurance and pensions and security market, that are delivered in responsible way (Demirguc Kunt, A., Klapper L., Singer, D., Ansar, S., Hess, J., 2018). Authors Beck, et al. 2005, have identified financial access or financial supply indicators: such as Bank Branches, ATM, POS, and E-banking, which are used to measure financial infrastructure services. (Beck, T., Demirguc-Kunt, A. & Perria, M.S.M., 2005). According to World Bank, financial inclusion includes both financial access and financial usage, as a participation of individuals and businesses in financial services. (The World Bank, 2014). Authors Beck, et al. 2007, find that the measurements of financial inclusion in world has been focused on density indicators, respectively Bank Branches or Automatic Teller Machines (ATM) per capita, as a provider or supply indicators. (Beck, T., Demirguc-Kunt, A., & Martinez Perria, S.P, 2008). While the study of Demirguc-Kunt and Klapper 2012, goes further, filling this gap, with releasing Global Financial Inclusion Database (Global Findex), supported by World Bank, measures how adults in 148 economies around the world manage their day to day finances and plan for the future, or shows the demand side of financial inclusion. (Demirguc-Kunt, A. and Klapper, L., 2012).

Does financial inclusion have impact in growth? New development theories emphasize the positive role of financial inclusion for socio-economic development. Financial inclusion can indicate in boosting growth, reducing poverty as well as decreasing income inequality. Inclusive financial systems are considered ones that allocate funds effectively in society and economy, contributing to economic and social development. Inclusive financial systems are those systems with a high share of individuals and businesses that use financial services. Financial services can help people escape poverty through facilitating investments in health, education, and businesses. Poor people can benefit mostly from basic payment, savings and insurance services, while access to finance can help businesses for growth, creation of jobs and innovation. (The World Bank, 2014) .

In other hand, financial exclusion, or lack of access to finance can lead to poverty traps, inequality and will indicate in lower growth. Models of Galor and Zeira 1993; Banerjee and Newman 1993, shows that lack of access to finance can generate persistent income inequality or poverty traps, as well as indicates in lowering economic growth. (The World Bank, 2014).

A first step toward broader financial inclusion is having access to a transaction account (current or payment account), because current account allows people to send and receive payment (bank transfers, e banking), deposit and withdraw money in bank premises and ATM, save money, get loan and use other financial services, like making purchases through POS terminals. In fact, a transaction or current accounts serves as the gateway to other financial services, which ensures that people who have access to a transaction account, have possibility to use other financial services, too. The issue of having increased transaction account in order to increase financial inclusion is in focus of the World Bank Group's Universal Financial Access 2020 initiative.

(Demirguc Kunt, A., Klapper L., Singer, D., Ansar, S., Hess, J., 2018).

In this paper, we will analyze the impact of financial inclusion services or access products: Bank Branches, ATM, POS, E-banking in GDP growth in Kosova, over the period 2007-2019.

Therefore, the aim of this paper is to find whether the financial inclusion products have positive impact in real GDP in Kosovo, over the period 2007-2019. In order to examine the implication of financial inclusion on economic growth, we address the research question: Does financial inclusion products or services, increase real GDP in Kosova? To address the research question we establish the following hypothesis: The increase of financial inclusion products indicate in real GDP increase in Kosova. The contribution of this paper is twofold: First: The study fills the gap about finding the relationship between financial inclusion as a segment of financial development and economic growth in Kosova. Second: the study explore the impact of different indicators of financial inclusion, like Bank branches, ATM, POS and E-banking on economic growth, expressed through real GDP in Kosova.

The paper is organized as in following: Section one includes Introduction, section two describes literature review, section three explain research methodology-data, section four shows results of econometric analysis, in section five are presented discussions of results, section six shows conclusions and recommendations.

2. Literature review

The empirical studies on the impact of financial development on economic growth (King & Levine 1999; De Gregorio & Guidotti 1996; Levine & Zervos 1998; Beck, Levine & Loyaza 2000), used different indicators of financial depth, such as bank assets, private credit, bank deposits and interest rates in order to assess the impact of these financial indicators on economic growth, expressed through GDP.

Recently, some empirical studies are focused on the role of financial inclusion indicators in economic growth or socio economic development. (Beck, T., Demirguc-Kunt, A. & Perria, M. S. M., 2005). One of the first studies of relationship between financial inclusion indicators and economic development, are those of authors: Bruhn et al. 2004, which find that increase of financial services (bank branches) in Mexico, leads to increased of income for low income individuals to about 7%, and also employment growth by 1.4%. Thus, the increase in access to financial services has had a significant impact, both on the labor market and on the level of income, and the increase in GDP per capita (Bruhn, M. & Love, I., 2014; Demirguc-Kunt, A., Klapper, L., & Singer D., 2017).

Authors, Burgess et al., 2005, in study: Do rural banks matter? Evidence from Indian Banks, applying linear regression techniques: OLS, Fix effects models, have analyzed the relationship between the growth of bank branches in rural areas in India and poverty in rural areas. They have found that the increase in financial inclusion in India, through the increase of banking access points in rural areas, has contributed to the reduction of poverty and the increase of productivity in rural areas in this country. (Burgess, R. & Pande, R., 2005; Demirguc-Kunt, A., Klapper, L., & Singer D., 2017). Dabla-Norris et al., 2015, find that increasing financial depth and financial inclusion

affect economic growth and income inequality through two channels. Thus, through efficient distribution of financial funds to more efficient entrepreneurs, financial inclusion enables the growth of overall production and economic growth. The authors find that that increasing financial inclusion by reducing the cost of credit products, can increase the participation of small businesses in lending, and make contribution not only to economic growth, but also can reduce income inequality. (Dabla-Norris, E. Ji, Y., Townsend, R. & Unsal, D. F., 2015). Lenka et.al. 2017, using time series methods, Auto Regressive Distributed Lag (ARDL) and Error Correction Model (ECM), over the period 1980-2014, have analyzed the impact of financial inclusion on economic growth in India. In econometric analysis they have used financial inclusion indicators: number of bank branches, number of deposit account, number of loans, number of bank employees, amount of deposits and loans, in relation to GDP. The results of analysis show that financial inclusion and financial liberalization have positive impact on economic growth in India, in the long and short term. (Lenka, K. S. & Sharma, R., 2017).

While authors Inoue et.al. 2016, applying panel data for 37 African countries, over the period 2004-2012, have analyzed impact of access to finance on economic growth in Sub-Saharan countries. Empirical results show that improving financial access has positive effects on economic growth. (Inoue, T. & Hamori, Sh., 2016). Hasan et.al. 2012, using data from 27 European countries, over the period 1995-2009, have examined the relationship between retail payments and economic growth. They find that electronic retail payments system have positive impact on GDP growth. Card payments, ATM and POS terminals have positive impact on GDP, consumption and trade and contributed positively for whole economy. (Hasan I., Renzis, D. T., Schmiedel H., 2012) The main empirical studies on the relationship between financial inclusion and economic growth have been focused on the analysis of the impact of financial inclusion indicators, like Bank branches, ATM, POS terminals and number of E-banking on GDP growth, mainly using time series data, usually applying linear regression techniques. Most of the empirical studies find positive impact of financial inclusion indicators on economic growth.

3. Research methodology- data

The data used for this paper are taken from secondary data of the Central Bank of Republic of Kosovo. The study uses time series data for Kosovo, over the period 2007-2019, linear regression OLS model, based on quarterly data of financial inclusion indicators and real GDP in Kosovo. Based on empirical studies (King & Levine 1993 a,b; De Gregorio et.al. 1995; Demetriades & Hussein 1996; Arestis et.al. 1997; Levine 1998; Beck et.al 2000), the most well known indicator in literature for measuring economic growth is: real Gross Domestic Product – GDP, which is a dependant variable, while the independent variables for measuring financial inclusion indicators are: Bank Branches, ATM, POS, E-banking (Bruhn et.al. 2014, Burges 2005, Sharma 2016, Sharma 2016).

3.1. Empirical model

In this section, we develop an empirical econometric model to assess the relationship,

respectively the impact of financial inclusion indicators on economic growth in Kosova. For this purpose, we have used different econometrics techniques: linear regression OLS model, Fixed and Random effects, in order to empirically assess the impact of financial inclusion in economic growth. Applying OLS regression model, we find the model is as follows:

$$Y(GDP)_t = \beta_0 + \beta_1(\text{BankBranches}) + \beta_2(\text{ATM}) + \beta_3(\text{POS}) + \beta_4(\text{E_Banking}) + e$$

where: Y_t is dependant variable which represents economic growth, expressed by real GDP in Kosova; t represent years; e is error term; while explanatory or independent variables include, Bank Branches, which is number of bank premises in Kosovo; ATM is number of ATM terminals; POS is number of POS terminals, and E-banking is number of e-banking account holders in Kosovo.

3.2. Empirical results

In this section, we present the empirical results through OLS Regression techniques, Fixed and Random effects for impact of financial inclusion or independent variables on real GDP, as a dependant variable. The endogenous variable is real GDP in Kosovo. While exogenous variables are: Bank Branches, ATM, POS, and E-banking. A positive value of explanatory variables means a positive impact on real GDP increase, while a negative value of the variables means a negative impact or decrease of real GDP. Based on high significance of regression results, we can interpret results of linear regression models.

Tab.1. Regression results

Variables	Pooled OLS	Fixed Effects	Random Effects
GDP			
Bank Branches	-2.763291 (0.125) **	.1538388 (0.968) **	-2.763291 (0.118) **
ATM	1.863105 (0.011) *	1.747901 (0.293) **	1.863105 (0.008) *
POS	.1857819 (0.000) *	0.452688 (0.578) **	.1857819 (0.000) *
E-banking	.0033389 (0.002) *	.008098 (0.002) *	.0033389 (0.001) *
Constant	3173.911	2948.071	3173.911
Nr. of Observation	52	52	52
R-squared	0.9891	0.5185	0.4563
F	1063	9.42	-
Chi 2	-	-	4252.89

Notes: *statistically significant at 5 % level; **statistically significant at 10%

Source: Author calculations based on Central Bank of Kosova data over the period 2007-2019

The first explanatory variable we set Bank Branches, and it has a negative coefficient -2.763291, which means that Bank Branches have negative relationship with real GDP. However, the p- value for Bank Branches is (0.118), higher than the common

alpha level of 0.05, which indicates that it is not statistically significant. Number of Bank branches in Kosovo, during last decade, was in negative trend, decreasing from year to year. ATM indicator has positive coefficient for 1.863105, which means that increases in ATM terminals in Kosovo have positive impact on real GDP in Kosovo, p-value is statistically significant (0.008), lower than alfa level of 0.05, and results indicate positive impact of ATM increase on real GDP in Kosovo. (Sharma,2016). POS terminal has positive coefficient for .1857819. P-value is of high significance (0.000), which indicates a strong relationship and positive impact of ATM on real GDP growth in Kosovo. E-banking has positive impact on real GDP in Kosovo, with positive coefficient of .0033389, while the p-value is 0.0001 (0.05). Based on empirical results we can see that financial inclusion indicators, ATM, POS and E-banking have strong positive relationship and indication on real GDP in Kosovo.

Conclusions

The purpose of this research paper is to assess the impact of financial inclusion indicators on economic growth in Kosovo, over the period 2007-2019. Applying different linear regression techniques, we have examined whether the financial inclusion indicators have impact on GDP increase in Kosovo. The paper uses different econometric technique, OLS, Fix and Random effects in order to test the impact of financial inclusion in economic growth.

The main results strongly show the positive impact of financial inclusion retail indicators ATM, POS, E-banking in real GDP increase in Kosovo. According to these results financial inclusion segment is as important as financial depth, regarding the relevance and its impact on economic or GDP growth. Moreover, the lack of financial inclusion can be an obstacle for financial depth and may also limit further economic growth or socio-economic development in country. Therefore, increasing financial inclusiveness is essential objective for GDP growth and socio-economic development in Kosova.

The findings are useful for government and monetary policy authorities, central and commercial banks, and give them useful information about importance of financial inclusion indicators and their impact on economic growth. This will help them to design sound development and financial policies, in order to offer better and efficient financial services to individuals and businesses, in order to increase inclusiveness and enhance economic growth.

The paper presents many possibilities for future researches. Therefore, future studies can include other indicators of financial inclusion, as well as financial efficiency and stability indicators impact on economic growth, respectively on socio-economic development.

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Annex:

Tab.1: Descriptive statistics for Kosovo

Variables	Obs	Mean	Std.Dev.	Min.	Max.
GDP	52	5154.783	1170.035	3150	7179
Bank Branches	52	271.3077	31.62373	216	311
ATM	52	424.1538	120.4209	128	542
POS	52	8098.288	3372.661	1810	13769
E – Banking	52	130525.5	96354.37	3652	303602

Source: Data processed by author in Stata Program

OLS regression

```
. regress PBBrealemileuro TOTALNUMRIIDEGEVEBANKARE TOTALNUMRIIATMNEKOSOVE TOTALNUMRI
> IPOSaNEKOSOVE TOTALNUMRIIEBANKINGNEKOSOVE
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Source	SS	df	MS	
Model	69054968	4	17263742	
Residual	763147.932	47	16237.19	
Total	69818115.9	51	1368982.67	

Number of obs =	52
F(4, 47) =	1063.22
Prob > F =	0.0000
R-squared =	0.9891
Adj R-squared =	0.9881
Root MSE =	127.43

PBBrealemileuro	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
TOTALNUMRIIDEGE~E	-2.763291	1.76958	-1.56	0.125	-6.323226 .7966439
TOTALNUMRIIATMN~E	1.863105	.7077897	2.63	0.011	.4392158 3.286994
TOTALNUMRIIPOSa~E	.1857819	.0225168	8.25	0.000	.1404839 .2310798
TOTALNUMRIIEBAN~E	.0033389	.0009947	3.36	0.002	.0013379 .0053399
_cons	3173.911	354.0046	8.97	0.000	2461.746 3886.077

Random effects GLS regression

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. xtreg PBBrealemileuro TOTALNUMRIIDEGEVEBANKARE TOTALNUMRIIATMNEKOSOVE TOTALNUMRIIP
> OSaveNEKOSOVE TOTALNUMRIIEBANKINGNEKOSOVE, re
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Random-effects GLS regression                Number of obs    =        52
Group variable: Code                        Number of groups =        13

R-sq:  within = 0.4563                      Obs per group:  min =         4
        between = 0.9981                    avg =         4.0
        overall = 0.9891                    max =         4

corr(u_i, X) = 0 (assumed)                  Wald chi2(4)     =    4252.89
                                                Prob > chi2     =     0.0000
```

PBBrealemileuro	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
TOTALNUMRIIDEGE~E	-2.763291	1.76958	-1.56	0.118	-6.231604	.7050212
TOTALNUMRIIATMN~E	1.863105	.7077897	2.63	0.008	.4758627	3.250347
TOTALNUMRIIPOSa~E	.1857819	.0225168	8.25	0.000	.1416498	.229914
TOTALNUMRIIEBAN~E	.0033389	.0009947	3.36	0.001	.0013894	.0052884
_cons	3173.911	354.0046	8.97	0.000	2480.075	3867.748
sigma_u	0					
sigma_e	126.37835					
rho	0	(fraction of variance due to u_i)				

Fixed-effects regression

```
. xtreg PBBrealemileuro TOTALNUMRIIDEGEVEBANKARE TOTALNUMRIIATMNEKOSOVE TOTALNUMRIIP
> OSaveNEKOSOVE TOTALNUMRIIEBANKINGNEKOSOVE, fe
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```
Fixed-effects (within) regression          Number of obs    =        52
Group variable: Code                      Number of groups =        13

R-sq:  within = 0.5185                      Obs per group:  min =         4
        between = 0.9858                    avg =         4.0
        overall = 0.9780                    max =         4

corr(u_i, Xb) = 0.3786                     F(4, 35)        =         9.42
                                                Prob > F        =     0.0000
```

PBBrealemileuro	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
TOTALNUMRIIDEGE~E	.1538388	3.809929	0.04	0.968	-7.580729	7.888407
TOTALNUMRIIATMN~E	1.747901	1.638853	1.07	0.293	-1.579148	5.07495
TOTALNUMRIIPOSa~E	.0452688	.0805294	0.56	0.578	-.1182146	.2087521
TOTALNUMRIIEBAN~E	.008098	.0024068	3.36	0.002	.0032119	.0129841
_cons	2948.071	928.2802	3.18	0.003	1063.562	4832.58
sigma_u	154.3629					
sigma_e	126.37835					
rho	.59870024	(fraction of variance due to u_i)				

```
F test that all u_i=0:      F(12, 35) =      1.07      Prob > F = 0.4168
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