Northumbria Research Link

The impact of financial inclusion on sectoral economic growth

Ayse Demir[a]   **Joseph Ajefu**[b]   **Kalim Bukhari** [c]   **Victor Murinde**[a]

[a] *School of Finance and Management, SOAS University of London, UK*

[b] *Newcastle Business School, Northumbria University, UK*

[c] *Kalim Hyder, Senior Economist, MPD - State Bank of Pakistan*

Abstract

In a panel of 69 countries covering the period 2004-2017, the impact of financial inclusion on agricultural, industrial and service sectoral growth appears to change depending on the financial structure of the country. It has comparative advantage in promoting agricultural growth in countries with financial systems dominated by markets, while its effects are stronger on services and industry growth in countries with market-based financial systems.

1   Introduction

Financial inclusion is markedly taking place in reform agenda and is perceived as a solution to global economic problems by several international organizations (Demirguc-Kunt et al., 2017). For instance, the World Bank considers financial inclusion as a key enabler that boosts shared prosperity and empowers lives of all people and put a goal to reach universal financial access by 2020. Similarly, United Nations set 17 Sustainable Development Goals (SDGs) for 2030 and financial inclusion is addressed as a key enabler for at least 7 of these SDGs (Mader, 2018).

The positive expectations on the outcomes of inclusive financial system dates to the emergence of endogenous growth theories that has renewed attention on the importance of inclusive financial system for economic growth process. Financial inclusion helps mobilization of savings and people to invest in education and business. It also reduces information and transaction costs and enables people to make financial transactions more safely and efficiently. In addition, access to financial services provides financial risk management and more resilience against income shocks (Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991; Pagano, 1993). These factors are expected to transform lives of people, create job opportunities, increase income in every level of society from rural to urban, and hence contribute to growth in economy in various sectors ranging from agriculture to technology (Demirguc-Kunt et al., 2017; Mader; 2018).

Despite importance of the financial inclusion for economic growth, there is limited empirical literature available in this area (Kpodar and Andrianaivo,2011; Sahay et al.,2015; Kim et al.2018), which provide findings in support of the positive relationship between financial inclusion and economic growth at aggregate level. However, these studies are unable to provide any evidence regarding the change in composition of economic growth due to financial inclusion.

In this study, we attempt to fill this gap by empirically examining the effect of financial inclusion on economic growth at disaggregate level (e.g. agricultural sector, industrial sector and services sector). We examine whether an increase in the inclusiveness level of financial system is associated with an increase in sectoral economic growth namely, growth in the industrial sector, agricultural sector, and services sector. In addition, we investigate these relations in countries with the varying financial structures. Changes in the financial structure may have an impact on the financial inclusion of household and firms. These developments in the financial structure and financial inclusion have a direct impact on the productivity of the growth in different sectors (Zingales and Rajan, 2003; Beck et al, 2013) [1]. Therefore, a further analysis with the sub-samples having different financial structures also provides new insights into impact of financial inclusion on sectoral growth.

---

[1] Zingales and Rajan (2003a) note that bank-based systems tend to have a comparative advantage in financing fixed-asset-intensive firms rather than high technology research and development-based firms. Moreover, they argue that fixed-asset-intensive firms are typically more traditional and well understood, and the borrower has the collateral to entice fresh lenders if the existing ones prove overly demanding. Loans are well collateralised by physical assets, and therefore are liquid; hence, the concentration of information in the system will not be a barrier to the financing of these assets. Conversely, the authors argue that market-based systems will have a comparative advantage in financing knowledge industries with intangible assets.

2   Data and methodology

We use a panel dataset covering the period 2004 - 2017 for 29 Developed countries and 40 developing countries. The data are obtained from World Development Indicators (WDI), World Bank, Financial Access Survey, and International Monetary Fund (IMF).

We adopt a system generalised method of moments (GMM) and estimate an equation similar to Kim et al. (2018), and Sahay et al. (2015) as follows:

$$y_{it} = \lambda_0 + \lambda_1 l. y_{it} + \lambda_2 fi_{it} + \lambda' X_{it} + \omega_i + \phi_t + \varepsilon_{it} \tag{1}$$

Where y_{it} refers to growth in 3 sectors, fi_{it} refers to financial inclusion and X_{it} is a vector of control variables, ω_i is country fixed effects, ϕ_t captures time fixed effects and finally ε_{it} is error term .

As dependent variables, we use growth in 3 sectors, namely; agriculture, industry and service. Our financial inclusion variable comprised of ATM penetration, Bank penetration, Outstanding loans-deposits and Market capitalization ratio. We follow Ahamed and Mallick (2017) to construct financial inclusion measure via employing principal component analysis (PCA) . Moreover, we adopt a strategy similar to Guney et al. (2017) to construct financial structure ratio: private credit/ market capitalization ratio, where we take the mean of this value as the threshold, above the threshold refers market based, below refers to bank based financial structure. We then classified our sample as market based and bank based on this mean value.

And lastly, as our control variables, we use lagged value of each sector growth, education (human capital) and investment (physical capital).

3   Results and discussions

Table 1 reports the results using system GMM method on relationship between financial inclusion and sectoral economic growth, considering variations in financial structure across countries. From column 1-3, the study uses the agricultural sector growth as the dependent variable. The results show that financial inclusion is positively associated with growth of the agricultural sector in both bank-based and market-based countries. However, the magnitude of the effect of financial inclusion on agricultural sector growth is stronger in the market-based countries than bank-based countries.

From Column 4-6, the paper uses services sector growth as the dependent variable. The results show that financial inclusion is positively associated with growth of the services sector in bank-based countries but no statistically significant relationship in the market-based countries. Further, in Column 7-9, the study uses industry sector growth as the dependent variable. Financial inclusion is positively associated with growth of the industrial sector in both the bank-based and market-based countries. However, the magnitude of the effect of financial inclusion on industrial sector growth is higher in the bank-based countries than in the market-based countries.

These results imply that, financial inclusion matters for growth in each sector. It has stronger effect on agricultural sector growth when there is market dominance in the financial system, while for growth in the sectors of   services and industry, its effect is stronger in the financial systems which are dominated by banks. Put it differently, in the countries having financial systems dominated by banks, financial inclusion has comparative advantage in promoting

services and industry growth, while in countries with financial systems dominated by markets, it has comparative advantage in stimulating agricultural sector growth[2].

We can attribute these results to the fact that, in developing countries, majority of whom have financial systems that are dominated by banks, banks tend to provide credit mostly to the industry and service sectors, rather than agriculture (Léon, 2018)[3]. In these countries, SMEs that generally contribute to the improvement in industry and services sectors, have to be financially included in order to get loans from banks. On the other hand, the derivates in the stock markets that are provided for investment in the agriculture have potential to promote growth in agricultural sector once people are financially included in using these financial services (Demirguc-Kunt et al., 2017).

---

[2] We did robustness check by regressing growth in three sectors on financial inclusion, financial structure, an interaction term of financial inclusion and financial structure, education and investment. The results confirm our main findings and are available upon request.
[3] See data on credit structure : https://sites.google.com/site/florianleon/research/data?authuser=0

Table 1: The impact of financial inclusion on sectoral growth

Dependent variable	Agriculture	Agriculture	Agriculture	Service	Service	Service	Industry	Industry	Industry
Sample	Whole	Bank	Market	Whole	Bank	Market	Whole	Bank	Market
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
L.Agriculture	-0.385***	-0.727***	-0.477*						
	(-0.143)	(-0.144)	(-0.237)						
L.Service				-0.330***	-0.329**	-0.450***			
				(-0.107)	(-0.160)	(-0.129)			
L.Industry							-0.290***	-0.312*	-0.189**
							(-0.087)	(-0.146)	(-0.075)
Financial inclusion	0.087***	0.071**	0.085**	0.031***	0.035***	0.021	0.054*	0.075**	0.049**
	(-0.028)	(-0.028)	(-0.038)	(-0.010)	(-0.014)	(-0.023)	(-0.020)	(-0.028)	(0.022)
Education	1.037*	1.096*	-0.567	0.677	1.204*	0.901*	1.059***	0.691	0.702*
	(-0.538)	(-0.460)	(-1.003)	(-0.413)	(-0.705)	(-0.482)	(-0.265)	(-0.508)	(-0.356)
Investment	-0.021	-0.040	-0.214	0.021	0.041	0.063	-0.031	-0.207***	-0.016
	(-0.048)	(-0.051)	(-0.131)	(-0.038)	(-0.040)	(-0.038)	(-0.074)	(-0.054)	(-0.036)
Observations	526	331	167	505	312	153	312	331	495
Number of id	67	56	36	65	54	33	54	56	65
No. of instruments	25	25	17	38	25	34	47	35	47
AR1 p-value	0.010	0.010	0.006	0.077	0.103	0.218	0.010	0.001	0.003
AR2 p-value	0.714	0.816	0.112	0.620	0.254	0.347	0.097	0.188	0.870
Hansen p-value	0.134	0.140	0.943	0.201	0.414	0.450	0.498	0.518	0.290

Notes: This table shows the relationship between financial inclusion and 3 sectors, namely agriculture, service and industry (share of value added). Dependent variables: growth in agriculture sector, growth in services sector and growth in industrial sector. Independent variables: lagged value of each sector, financial inclusion, education(primary school enrolment) and investment (gross capital formation).
Bank refers to bank-based financial systems.
Market refers to market-based financial systems.
Whole refers to whole sample.

4   Conclusion and policy implications

In this paper, we re-visit financial inclusion-economic growth link, with a special emphasis placed on its effect on sectoral decomposition of growth. Further, we examine this link in countries with varying financial structures. In overall, our results imply that financial inclusion promotes growth in both agricultural, services and industry sectors. However, it has comparative advantage in promoting agricultural growth in countries with financial systems dominated by markets, while its effects are stronger on services and industry growth in countries with market-based financial systems.

In view of our results, policymakers and regulators should consider the prevailing financial structure in the country and associated financial services and products when using financial inclusion as a means of achieving economic growth at aggregate level and other more specific macroeconomic objectives at disaggregate level.

References

Ahamed, M. M., & Mallick, S. K. (2019). Is financial inclusion good for bank stability? International evidence. *Journal of Economic Behavior & Organization,157,*403-427.

Beck, T., Demirgüç-Kunt, A., & Singer, D. (2013). Is small beautiful? Financial structure, size and access to finance. *World Development, 52*, 19-33.

Bencivenga, V. R., & Smith, B. D. (1991). Financial intermediation and endogenous growth. *The Review of Economic Studies*, *58*(2), 195-209.

Demirguc-Kunt, A., Klapper, L., & Singer, D. (2017). Financial inclusion and inclusive growth: a review of recent empirical evidence. Policy Research Working Paper, No. WPS 8040. Washington, D. C.: World Bank Group.

Greenwood, J., & Jovanovic, B. (1990). Financial development, growth, and the distribution of income. *Journal of Political Economy*, *98*(5, Part 1), 1076-1107.

Guney, Y., Karpuz, A., & Ozkan, N. (2017). R&D investments and credit lines. *Journal of Corporate Finance, 46,* 261-283.

Kim, D. W., Yu, J. S., & Hassan, M. K. (2018). Financial inclusion and economic growth in OIC countries. *Research in International Business and Finance*, *43*, 1-14.

Kpodar, K., & Andrianaivo, M. (2011). *ICT, financial inclusion, and growth evidence from African countries* (No. 11-73). International Monetary Fund.

Léon, F. (2018).*The Credit Structure Database* (No. 2018-07)*.* CREA Discussion Paper Series

Mader, P.(2018). Contesting financial inclusion. *Development and Change*, *49*, 461–483

Zingales, L., & Rajan, R. G. (2003). *Banks and Markets: The Changing Character of European Finance* (No. w9595). National Bureau of Economic Research.

Sahay, R., M. Cihak, P. N'Diaye, A. Barajas, S. Mitra, A. Kyobe, Y. Nian Mooi & S. Reza Yousefi., (2015).   Financial inclusion: Can it meet multiple macroeconomic goals?, IMF Staff Discussion Note 15/ 17.