Liquidity-to-GDP Ratio, Business Activity, and Financial Security: Implications for Poverty Alleviation

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ABSTRACT

Purpose of the research is to find the influence of financial development on poverty in developing economies. Panel data was used of 50 developing countries (1995-2017) and estimated the results by using Generalized Method of Moments (GMM) technique. According to the estimated model, the impact of liquidity-to-GDP ratio (financial development) on poverty was negative, as financial development increases poverty reduces. The outcome variable studied was poverty, which was quantified as the headcount ratio. The other main explanatory variables used to explain or predict poverty were business activity (proxied through economic growth rate) and financial security (proxied through employment). Data was obtained from WDI, Freedom House, and Transparency International. The findings demonstrate a substantial inverse connection amongst liquidity-to-GDP ratio and poverty, implying that enhanced financial systems have the potential to decrease levels of poverty. Furthermore, poverty exhibited negative relationships with business activity and that of with financial security. The results corroborate the assertion that financial development not only promotes economic expansion but also improves poverty alleviation by expanding the availability of financial services for impoverished individuals. Policy recommendations stress the significance of enhancing the financial sector in emerging nations to successfully alleviate poverty.

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1. Introduction

The markets, or institutions, and instruments which enable credit-extension processes are referred as financial sector. Development of financial sector is mostly about dropping "costs" linked with the financial system. The development of financial sector occurs when financial instruments, and intermediaries lessen the costs associated with info, implementation, and transactions while also doing a better job of carrying out the essential roles played the financial sector.

Over long periods, nations with more progressive financial systems usually experience speedier growth rates, and a significant amount of data point out a causal

relation between these two effects: Economic growth is not the only factor that leads to financial progress; it helps to boost this growth.

Furthermore, it lowers poverty and inequality by increasing impoverished groups' access to finance, and boost up investment and efficiency that lead to higher income generation. Development of financial sector can aid in the expansion of small and medium-sized enterprises (SMEs), which are labor-intensive and typically generate more jobs than large corporations. SMEs are important for economic development, especially in emerging economies (World Bank, 2016).

Development of financial sector can help grow by providing SME (small medium size enterprises) financing access. In the comparison of large companies, SMEs are usually labor intensive and create more job opportunities. In emerging economies, they have a stronger influence in economic development. Development of the financial sector has surpassed, only financial intermediaries and infrastructure are in place. It requires strong policies to monitor and oversee all important entities. In the weak financial sector policy, the global financial crisis has highlighted terrible consequences. For financial development and its influence on economic upshots, the financial crisis has already demonstrated the catastrophic concerns of weak financial sector strategies (World Bank, 2012).

Financial development reduces poverty and income inequality through expanding financial access and help in risk management, to predisposed groups and to poor by increasing investment and productivity, will eventually leads to higher income (World Bank, 2002). The appropriate differences among financial liberalization and financial deepening are often not presented in the literature, but rather they are different thoughts (Abiad, Oomes, & Ueda, 2008).

In financial markets and banks, the displacement of a lot of workers and the heavy burden of taxpayers have spurred a lot of public outrage. Most people now believe that financial markets are uncreative at best if they are not socially destructive. According to business-friendly magazines, such as economists acknowledging the tendency of financial market commitments, they have brought difficulties (Carr, 2009).

The financial system has five important functions that are separately explained; (a) pre-generating information about possible investments and allocating capital (b) checking investment and providing financial corporate governance (c) promoting risk trading, diversification and management (d) Mobilize and combine savings (e) it will be easy in exchange of goods and services (World Bank, 2002).

Therefore, in the economic environment, the importance of financial development has three aspects: First, in the channels of production activities, access to credit is beneficial to the weak and the medium class through investment. Frankly speaking, the poor can invest more and more credit (short term and long-term activities are self-employment and education respectively), thereby increasing their economic and social mobility in terms of wealth. The initial assumption was that poorer people lacked initial wealth and security. Hence, due to the lack of collateral, the credit market is not fully available at the bottom and middle of income distribution. The main hope is that these failures control the professional outcomes of those in the economy, the poor become working-class, and the rich become entrepreneurs.

First objective of the sustainable development framework is to combat poverty. UN estimates that over 10% of global population, still struggle to meet their most basic needs, which include access to water and sanitation, health care, and education (United Nation).

In order to reduce poverty, role of financial sector is small, and in terms of economic well-being, there are several researches showing how financial institutions design programs or introduce products to specifically target the poor in society, improve production activities and improve in selected countries credit access.

In emerging economies, financial development is the reason to reduce poverty. Market failure is the vital reason of poverty and the poor avoids financial market shortfalls

against future income to invest from borrowing. By discussing the reasons of failure of financial markets, primarily high costs of small scale lending and disproportionate statistics, there is a chance to improve for the poor to access prescribed finance (Stiglitz, 1998). In order to expand access of poor to financial services, mainly credit and insurance in conflicts of risk services, it will help useful assets of poor, expand their production and increase likelihood of achieving sustainable livings (World Bank, 2001).

There is indirect influence of financial development on livelihood of poor people that could be associated to economic growth (World Bank, 2001). There is a link amid financial development and poverty, which is very important in recent times (Ravallion, 2001; Squire, 1999; World Bank, 2001). Distinct poverty outcomes are achieved by differences in growth, the magnitude of poverty reduction is associated with changes in growth, changes in income of the people along with changes in income disparities (World Bank, 2001).

In emerging economies, reconsidering the aims associated with development are of a special concern, economic growth to growth will decreases poverty, financial development reduces poverty by improved interest. Primarily, the credit and insurance-against-risk services of assets of poor people becomes stronger and improvement in output and ability for sustainable living will be done, if there is increase in the access to the financial services of poor (World Bank, 2001).

If poverty rate falls, then proportional growth will maintain income distribution by encouraging lower circulation volumes. Poverty alleviation growth is defined as improving status of poor and affecting income distribution. In many other cases, growth benefits the non-poor population of society, and in same way it also improves the measurement of distribution. Obviously, poverty is related to overall growth.

One of the significant fields of study in discipline of economics is the impact of financial development on economic operations. Many academic works hold that the rise of finance promotes economic expansion and significantly boosts GDP in local development (Marcelin, Egbendewe, Oloufade, & Sun, 2022; Zhu & Lee, 2022) but there is controversy over how money affects underprivileged populations and areas, which has an immediate impact on long-term sustainable development. Research indicates that there are minimal obvious effects of financial development and economic expansion on reducing poverty (Lee, Yuan, & Ho, 2022; Uddin, Shahbaz, Arouri, & Teulon, 2014). A lot of studies used "trickle-down" ideology of economic growth that financial development increases economic growth, further economic growth improves the way to reduce poverty.

The current study intends to investigate the implications of liquidity-to-GDP ratio, business activity, and financial security for poverty alleviation in developing economies. As the main issues which developing countries are facing are poverty. If developing countries becomes financially developed, the poverty may reduce. In the current study, liquidity-to-GDP ratio or financial development are used synonymously. While, business activity and financial security are respectively, proxied through GDP growth rate and employment.

All our work is planned according to this: The 2nd section is of literature review which included the reviews of other studies which are related to our studies. In section 3 we included the theoretical Framework; in this section brief theory of financial development and poverty and employment in developing countries have been discussed. Section 4 presents the Methodology, in this chapter estimation technique and data sources have been included. In section 5, result and discussion have been presented. Section 6 included conclusion and policy implications.

2. Literature Review

Financial development may influence poverty in direct as well as in an indirect way (De Haan, Pleninger, & Sturm, 2022). This section presents the literature review, i.e., reviewing what is already known about this. Using Markov Switching Model, Rahman, Khan, and Charfeddine (2020) examines the relationship between financial development and economic growth. Outcome shows that financial development lifts economic growth in

Pakistan under both high and low economic growth regimes. Nonetheless, it is discovered that in high-growth regime, influence of financial development on economic growth is comparatively greater. Trade openness and government spending have a favorable effect on economic growth among control variables, whereas labor force participation has a negative effect.

Using data from 44 countries and 42 middle-income countries, Abbas, Afshan, and Mustifa (2022) revealed that, over time, financial development helps both sets of countries' economies thrive. Furthermore, two-way Granger causation between financial development and economic growth was demonstrated. Results showed that financial development and income disparity were inversely correlated in lower- and upper-middle-income nations.

Beck, Levine, and Loayza (2000) conducted a study. The data was taken from International Monetary Fund's from the years 1960-1995 of 63 countries. They found that financial intermediation played an important and positive role in growth of total factor productivity, which provided sufficient support for overall GDP growth. In addition, the long-term link between financial development and physical capital growth and private savings rates is an uncertain factor.

Zameer, Shahbaz, and Vo (2020) conducted a study to investigate how globalization, financial development, and technical innovation contribute to China's effectiveness in reducing poverty. The study used system GMM and the super-efficiency DEA model for empirical estimation, using data from 2007 to 2018. Their results show that different regions have become more effective at reducing poverty over time. Nonetheless, China's overall effectiveness in reducing poverty is highly unevenly distributed in terms of geography. Furthermore, China's efficacy in reducing poverty is positively impacted by financial development and technical innovation.

Jalilian and Kirkpatrick (2002) revealed that how financial development reduces poverty in most of developing countries. The data consists of panel data of 42 countries was taken from World Development Indicators for the years 1990-1995. 2SLS technique was applied to generate the results. The financial development was measured as bank deposit money assets over and income growth of poor was proxy of poverty. According to the results, financial development played very important role. Results show that if financial development increases, the income of poor will also increases in developing countries. If financial development increases then it will decrease the income growth of poor.

Aderibigbe (2001) investigated part of financial sector in reducing poverty. Data was collected from World Development Indicators through the analysis consisted of time series for the years 1980-1990. Outcome variable was poverty and independent variables were financial development, GPD growth rate, foreign aid. The paper addressed that there was a bulging part of financial sector in reducing poverty. In order to decrease poverty, in order to encourage micro credit financing, financial sector should have to play a vital role for it, which was the main restriction in order to fight with poverty. For low-income people, microfinance operations are very effective and can help increase and sustain their income and assets.

Grindle (2002) investigated effect of governance on poverty reduction and reform, in developing countries. Per capita income was the measure of poverty and financial development was measured by liquidity ratio to GDP. Data was collected from World Bank Indicators from the years 1990-1995. The dependent variable was poverty and independent variables are GDP per capita, financial development, income and inflation. Study found that good governance has a positive effect on poverty reduction. The results also show that almost all Poverty Reduction Strategy Papers (PRSPs) have revised the measurement of governance issues. In addition, most PRSPs say that good governance is one of the country's strategies to reduce poverty. Basically, national documents point out that good governance is very important for achieving many of the other poverty reduction goals discussed in the document. The Albanian government believes that if they want to make progress in institutional reform, they must succeed in economic growth and poverty decline.

Honohan (2004) conducted a study for which data was taken from WDI from the years 1980-2000. The estimation technique used was ARDL to generate results. The

dependent variable was poverty and independent variables were financial development and growth. The results show that even if the average income inequality is taken into account and the shortcomings of financial development and financial depth are determined, the financial depth is negatively correlated with population poverty. We have investigated that financially intensive growth (at least measured by bank depth) is associated with economically lower poverty rates. On the other hand, only depth is not enough to measure financial development, we propose a way to define more inclusive summary statistics.

Hassan, Sanchez, and Yu (2011) investigated that do financial development reduce poverty in developing countries. The data was taken from World Development from 1990-1997 from 71 developing countries of the developing world. By using the OLS approach, the dependent variable was poverty as capita income and the independent variables were income inequality as Gini coefficient, financial development and GDP. Financial development has a strong, statistically significant impact on reducing poverty in developing countries. After applying possible endogenous financial development, controlling income levels, income inequality and geographic regions, the results of the measures for the number of people in poverty indicate that, on average, an increase in share of financial development in a country's population will result in a lower cost per person per day. The proportion of the population of $1.00 has fallen.

Quartey (2008) organized a study in Ghana. Data was taken from WDI from years 1970-2001. The depending variable was poverty and independent variables were financial development, exchange rate and trade openness. In the paper, Johansen co-integration was applied as estimation technique to generate results. The study found that financial sector development had negative effect on poverty reduction and also negative related with the saving mobilization. The main findings on the theoretical basis were that financial sector development caused savings mobilization and savings caused poverty reduction, hence, a developed financial market would support poverty reduction.

Seven and Coskun (2016) conducted a study for which data consisted of 45 developing countries for the period 1987–2011 from source World Development Indicators. The results were generated through the estimation technique GMM. Outcome variable was income inequality and independent variables were GDP, per capita income, inflation. Findings showed that there was a negative relationship of financial development with poverty and income inequality.

Rewilak (2017) studied impact of financial development on poverty reduction. The ratio of people was representative of poverty reduction, and broad money was the representative of financial development. Applied 3SLS to generate the results. Outcomes showed that financial development has had a progressive influence on poverty reduction. Harber (2002) investigated impact of democracy on poverty and education. The research findings concluded that as we know that democratic values and behaviors are socially learned and nor in genetics of people, education must play a part in encouraging more democracy and if more and more people become educated then the employment level will also increase. So, the poverty reduces ultimately in this way. Islam (2004) investigated that effect of employment on poverty. Outcomes concluded that through the employment growth, economic growth leads to poverty reduction which will increasing productivity then, increase in economic growth rate. Škare and Družeta (2016) found that poverty rate reduced due to increase in economic growth. According to the results, "trickle-down" ideology of economic growth improves the way to reduce poverty.

By reviewing all studies, it is clear that most of the papers have exposed the stronger influence of financial development on macroeconomic indicators and role of corruption on it, but just few of study have discovered effect of financial development on macroeconomic indicators where corruption is also present.

Review of the literature in the form of a comprehensive table is given below.

Table 1
Summary of the Literature

Author(s)	Year	Data (Time Span)	Dependent variable	Methodology	Findings
Beck et al.	2000	63 countries, 1960-1995	Poverty	Growth accounting production function	Financial Development (FD) (-)
Jalilian & Kirkpatrick	2001	Panel data, 42 countries, 1990-1995	Poverty	2SLS	FD(-)
Aderibigbe	2001	Time series, 1980-1990	Poverty	N/A	FD(-)
Grindle	2002	WDI 1990-1995	Poverty	N/A	FD(-)
Honohan	2003	WDI 1980-2000	Poverty	ARDL	FD(-)
Page et al.	2005	WDI 1990-1997	Poverty	OLS	FD(-)
Quartey	2005	WDI 1970-2001	Poverty	Johansen co-integration	FD(-)
Seven & Coskun	2016	WDI 1987-2011	Poverty	GMM	FD(-)
Rewilak	2017	WDI 2004-2015	Poverty	3SLS	FD(-)

Note: In the last column the negative sigh in the parenthesis shows the negative effect of financial development on poverty

3. Data and Methodology

This is a panel study for 50 countries for which data period is 1995-2017. We select those 50 developing countries from World Bank country and lending groups on the basis of GNI per capita, classified as income groups and their detailed list is also dispatched. Data was collected from World Development Indicators, Freedom House, and Transparency International.

Descriptive, and GMM techniques were applied. GMM technique was used because there was the problem of endogeneity in the data.

3.1. Model Specification

To find out the estimates of our study the following model was designed.

Poverty = f (Liquidity-to-GDP Ratio, Business Activity, Financial Security, Democracy) (1)

OR

POV = f (LIQ_GDP, BUS_ACT, FIN_SEC, DEMO) (2)

Here poverty (POV) was used as outcome variable and liquidity-to-GDP ratio (LIQ_GDP), business activity (BUS_ACT), financial security (FIN_SEC), and democracy (DEMO) were considered as independent variables.
Based on above model, econometric form of model could be as follows:

$$POV = \psi_0 + \psi_{1it}LIQ\_GDP + \psi_{2it}BUS\_ACT + \psi_{3it}FIN\_SEC + \psi_{it4}DEMO + u_{iit} \quad (3)$$

Poverty was measured as headcount ratio. Financial development was measured as liquidity to GDP ratio. Democracy was measured as Polity2. Financial security was measured as number of working populations. Business activity was measured as GDP growth rate. A detailed description including measurement of the variables, definitions, and data source of each of the variable is given in the table 2.

Table 2
Description of Variables

Variable Name	Unit and Measurement	Definitions	Code	Data Source
Poverty	Headcount ratio (% of population)	Number of poor expected as section of people inferior over line of poverty.	POV	World Development Indicators (WDIs)
Liquidity-to-GDP Ratio (or Financial Development)	Ratio	Ratio of liquidity to GDP	LIQ_GDP	WDIs
Business Activity	Annual %	GDP per capita growth, annual %.	BUS_ACT	WDIs
Financial Security	%	Number of working population. (% of total employment)	FIN_SEC	WDIs
Democracy	Polity 2	Combining the political rights & civil liberties	DEMO	Polity IV by Freedom house

3.2. Estimation Technique

A descriptive analysis was run, results are given in table 3.

The panel's unit root test was applied to check stationarity of variables. Generalized Methods of Moments technique was applied for getting estimation results, which was used by many researchers (Arellano & Bover, 1995; Blundell & Bond, 2000; Blundell, Bond, & Windmeijer, 2001).

3.2.1.Assumptions of GMM

In our research we apply GMM technique due to some reasons or assumptions as follows:

1. Small T, large N panels, small time series and large cross sections.
2. Single equation function linear model.
3. The dependent side variable is dynamic variable which depend on its own lag.
4. Sovereign variables are not sternly exogenous and connected with previous and existing insights of the blunder.
5. Unnoticed heterogeneity suggesting by republic fixed effects.
6. Autocorrelation plus heteroscedasticity within country errors, but not through them.

AR testing is another key diagnostic of estimation in dynamic panel data for autocorrelation of errors.

4. Results and Discussion
4.1. Descriptive Analysis

Table 3 shows descriptive statistics of the variables. This table shows details about variables like mean, highest value and lowest value, standard deviation and number of observations about liquidity-to-GDP ratio, poverty, financial security, business activity, and democracy.

Table 3
Descriptive Statistics

Variables	Mean	Max	Min	Std. Dev	Obs.
Liquidity-to-GDP Ratio	44.02	450.39	0.34	33.60	978
Poverty	25.16	70.9	0.4	15.71	854
Financial Security	43.44	90	8.2	15.44	834
Business Activity	3.28	122.96	-62.22	6.57	1075
Democracy	2.9	10	-10	1.99	1058

Table 3 shows the minimum and maximum values for financial development, maximum value of financial development is for Thailand which is 450.4% in 2004 and

minimum value is 0.345 for Syria in 2017. Secondly, in the data set of poverty, the maximum value is 70.9% from Zimbabwe in 2001 and the minimum value is 0.4 from Malaysia in 2015. Fourthly, in the data set of employment, the maximum value is 56% from Albania in 2000-2002 and the minimum value is 26% from Gambia in 1998. Sixthly, in the data set of GDP, the maximum value is 387.31 (annual %) from Vietnam in 1995 and the minimum value is -16.12 (annual %) from Gambia in 1998. In the data set of democracy, the maximum value is 10 from India, Singapore, Qatar and Philippine in 1995-2017 and the minimum value is -10 from Nepal and Chile in 1995-2017.

4.2. Panel Unit Root Test Result

Levin, Lin Chu test was applied to check stationarity of all the variables. If prob value becomes less than 1%, 5% and 10% then we accept H1 otherwise reject H0, which shows that series is not stationary.

Table 4
Unit Root Test

Variables	Statistics	Levin Lin Chu (*p*-value)	Level
POV	-3.3622	0.0100	I(0)
LIQ_GDP	-3.9739	0.0000	I(0)
BUS_ACT	-13.9565	0.0000	I(0)
FIN_SEC	-2.5108	0.0000	I(0)
DEMO	-1.6503	0.0000	I(0)

P-value of all variables is less than 0.05 which shows that all variables are stationary at level.

4.3. GMM Estimates

According to our results presented in table 5, liquidity-to-GDP ratio, business activity (GDP growth rate), financial security, and democracy, all of the four variables are highly significant and negatively related to poverty. The results show that due to the negative correlation between developing countries, the liquidity-to-GDP ratio (financial development) of one unit will increase, and the number of poverty units will be reduced to -101,043 units. Many studies show the same findings (Banerjee & Newman, 1993; Beck et al., 2000; Honohan, 2004; Odhiambo, 2009; Quartey, 2008; Stiglitz, 1998).

The article shows that financial development has a negative impact on poverty, because financial development can reduce loans to small borrowers by reducing the reasons for financial market failures, such as information asymmetry and high fixed costs, to improve the access of the poor to formal finance (Jalilian & Kirkpatrick, 2002; Stiglitz, 1998).

The results of business activity (BUS_ACT) also interpreted as, one-unit increase in the GDP growth, will reduce -.0468289 units of poverty. Financial development has an indirect impact on the living standards of the poor by supporting economic growth (Pradhan, 2010; World Bank, 2001).

One-unit increase in the financial security (FIN_SEC) or employment level, will reduce -.0061535 units of poverty. The employment negatively effects poverty. Many early investigations of the US economic growth, trickle down model, have confirmed that economic growth improves poverty reduction by increasing employment or real wages (Anderson, 1964; Thornton, Agnello, & Link, 1978). The key to the analytical framework presented in this paper is a virtuous cycle of business activity (economic growth). Employment growth through increased productivity leads to poverty reduction and poverty reduction, which makes it possible to further increase productivity and increase productivity. By shifting the employment structure to higher-productive occupations/sectors and increasing the productivity Sf departments and occupations, you can see employment growth with increased productivity (Islam, 2004).

One unit increase in the democracy, will reduce -.03251693 units of poverty. If more and more people become educated then the employment level will also increases and the

number of employed people increases and more people will get their jobs. So, the poverty reduces ultimately in this way (Harber, 2002; Rioja & Valev, 2004).

Table 5
Results of GMM

Variables	Co-efficient	T-statistics	*p*-Value
LogFIN_DEV	-.0036	-2.73	0.001
GDP	-.0057	-9.26	0.027
EMP	-.0291	-1.67	0.007
DEMO	-.5682	-0.78	0.000
Diagnostic Test			
Sargan Hansen			0.382
AR (1)			0.154
AR(2)			0.269

5.   Conclusion

The purpose of this research was to find influence of financial development on poverty in developing countries. Panel data of 50 developing countries from 1995 to 2017 was obtained from WDI, Freedom House, and Transparency International. Generalized Methods of Moments (GMM) was used to generate the empirical results. Findings demonstrate a substantial inverse relationship between liquidity-to-GDP ratio (financial development) and poverty alleviation, implying that enhanced financial systems have the potential to decrease levels of poverty. Furthermore, poverty exhibits negative relationships with business activity growth, growth in financial security, and democracy. The results corroborate the assertion that financial development not only promotes economic expansion but also improves poverty alleviation by expanding the availability of financial services for poor people.

5.1.   Policy Recommendations

Our conclusion is likely to recommend prospects to plan some policies, according to our empirical results and conclusion. To decrease poverty, policy makers should increase the opportunities of financial security.

Authors Contribution
Wasif Ali Khan: Conceptualization & Study Design &, Data Analysis & Interpretation, Drafting.
Komal Urooj: Literature Surveying & Reference Management, Data Collection, Drafting.
Amina Alamgir: Literature Surveying & Review, Critical Revision, Drafting

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