

FINANCIAL PERFORMANCE AND EARNINGS OF POOR PEOPLE: A CASE STUDY OF PAKISTAN

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ABSTRACT

The relationship between financial development and income growth of the poor segment of population is analyzed both theoretically and empirically in this paper. Advanced technique like ARDL procedure is employed for co-integration while utilizing time series sample covering 1971-2005 period. Findings of the paper strongly suggest that financial development not only improves the income levels of the poor people through investment in physical and human capital directly but indirectly by means of increased economic growth. It is a clear indication of the fact that **McKinnon Conduit Effect** is prevalent in the country. Contrary to this, during financial instability or banking crises poor deprived indigenous people neither have access to credit nor their deposit are secured.

Although increased level of economic growth resulting on account of monetary instability creates income inequality among the poor disadvantaged people by lowering their purchasing power. Thus, enhanced agricultural activity, employment generating manufacturing sector and favorable investment climate are the motivating factors in pushing the incomes of said personals in the upward direction.

Key Words: Macroeconomic, Earnings, ARDL

JEL Classification: E6, C5

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INTRODUCTION

Financial development and poverty reduction are the key elements of concern for a developing economy like Pakistan. The first generation neo-classical growth models attributed economic growth to exogenous technical change and population expansion (Solow 1956, 1957). However, recent literature developed by Levine and Demirgüç-Kunt (2001); Evans, Green and Murinde (2002); Green and Kirkpatrick (2002) strongly focus on an important role of finance in achieving economic growth in developing economies. In certain countries it is observed by Ravi Kanbur (2001) that the benefit of growth for the poor is undermined or even offset by an increase in inequality which may accompany economic growth. Dollar and Kraay (2002) explained that the rich get more dollar as compared to poor for every increment in growth, and no improvement appears in relative poverty from growth perspective whereas in absolute terms poverty declines.

The effective blend of the two basic channels comprising of macroeconomic policies and microeconomic policies need to be adopted in order to improve the living conditions of the most poor and vulnerable segment of the population. Various microeconomic policies comprising of pro-poor development programs started in several developing countries. For instance, mushroom growth of microfinance institutions and SMEs in the developing countries to cater the needs of the underprivileged segments of the society but it does not appear very conducive. Although, Martin Ravallion (2001) indicates that there is a need of deep microeconomic work on growth and distributional change. Unfortunately due to bad governance and mal-practices, in spite of being funded by international donors these institutions did not prove effective for catering the demand of poor and the needy. The issues of unemployment and widespread poverty, hunger, lack of access to basic services among the poor needy population and those residing in rural areas continued to be the striking characteristic features of these economies.

Nevertheless, over the years it becomes evident that such kind of macro economic policies are much needed which may improve the share of the poor people in country's economic growth. Karray's (2001), seems to suggest that good macroeconomic policies, openness and globalization have positive and direct impact on the income of the poor. There are models developed by Beck. et.al., (2004) and Honohan (2004) showing that financial development

enhances growth and reduces poverty through controlling inequality. Macroeconomic policies that guarantee medium to long term price stability would protect the poor and facilitate economic growth and indirectly contribute to reducing poverty in the country [Latifee (2003); Green, et al. (2003); Mauro Allem (2004) and Bittencourt (2006)]. In Pakistan, mostly macroeconomic environment is characterized by high inflation and exchange rate instability hitting hard the poor local people. Therefore, main macroeconomic objective comprises of sustainable output and employment growth for poverty alleviation requires efficient and effective financial institutions.

According to Jalilian and Kirkpatrick (2002), finance reduces poverty through an indirect channel. It is argued that financial development creates economic growth and this growth exercises positive impact on the well being of the poor through improvement in their level of income. Imperfection of financial market and instability in the financial institutions badly hit the under privileged people of the economy. Development and growth of the financial system provide poor people with easy access to credit which is however limited for them. This has a very profound effect on the poverty reduction of those who are denied access to various services required to boost the living standard. Some of the authors like Banerjee and Newman (1993), Aghion and Bolton (1997), Greenwood and Jovanovic (1990) are of the opinion that credit poses heavy burden on the poor people specially in the early period of development on account of higher interest rates. This approach makes a ground for micro credit institutions. But at the same time same authors admitted that in the long run there is a built in mechanism which makes access to credit easier for the needy.

As Rajan and Zingales (2003) point out a very interesting fact that there is possibility of greater capacity to bear higher cost of small credits when financial system start becoming healthier and competitive. Eventually through growth of formal financial institutions informal sources also have a chance of earning profit and growing by investing in these formal set-ups. Mostly poor people rely on these informal sources of credit which is a great source of borrowing for them. Therefore, credit can improve the well being of the poor even if they do not receive credit directly from formal sector (Beck et al. (2004)).

During the periods of crises and financial instability, poor class of population who lacks collateral, credit histories and connections are not provided credit as these loans are less

profitable for the banks. But Mckinnon (1973) believed in *conduit effect* which implies that financial institutions are important because they provide certain profitable financial opportunities with respect to saving of the poor class even if they are unable to provide them with access to credit facilities. According to Bruno, Ravallion and Squire (1998), the impact of financial development on poverty reduction and economic growth go together as growth in itself reduces the extent of poverty. Controlled inflation and price stability help the poor to sustain and improve their livelihood. Thus, financial sector can play a major role in poverty reduction by reducing interest rates to affordable levels for the poor (Jillian Hossien, 2005; Jillian Hossien and Colin Kirkpatrick, 2005).

But the point of concern is that sometimes economic growth is accompanied by unequal distribution of wealth creating inequalities in the system widely evident from the rural and urban set up. This phenomenon is supported by Easterly and Fischer (2001) as they mentioned that poor depend more on the state determined income which is not fully indexed to inflation like pension, state subsidies. Thus, fluctuation in growth leads to higher income inequality. Poor class comprising of the rural communities are then left with much less disposable income available for food, shelter and clothing forces them to plunge into further miserable situation. When this condition develops then governments are often helpless because of their budgetary constraints as their focus is mainly towards development of urban localities. In such situation, the distributional change does not help to protect the poor during contractions in average living standards (Martin Ravallion, 2001).

This article is good addition in literature, in this article not only long run relationship between income growth of deprived population and financial development with financial instability is investigated but also short run dynamics examined in an opened economy like Pakistan, which has undergone the fundamental reforms in financial sector since 1990s.. The choice of the country is motivated by the fact that this particular issue of research for Pakistan has not been researched yet regarding time series data. Time series data is utilized covering the period 1971-2005 allowing in finding out meaningful time series investigation. Recently developed technique like ARDL (Autoregressive Distributive Lag Model, 2001) bounds testing is applied for long run alliance among said variables. ADF is employed to find out order of integration for running actors. Remaining balance is designed as follows: section-II explains modeling and data collection. Methodological Framework is explained in part-III. IV section is for empirical results interpretations. In V section conclusions are drawn.

II. MODELING AND DATA COLLECTION

On behalf of above discussion in economic literature, model under consideration indicates positive (negative) association between financial development (financial instability) and income of poor population. Following theoretical framework as discussed above, the basic specification of empirical equation is being modeled as portrays below;

$$LGR = \partial_1 + \partial_2 LFD + \partial_3 FNS + \partial_i CV + v_i \quad (1)$$

GR = Income growth of bottom 20 percent population, FD = Financial Development proxies by Credit to private sector as share of GDP¹, FNS = Financial instability (Iterative term between Time Trend and FD) and CV are control variable affecting earnings of concerned poor portion of society. We utilize data for income share of bottom 20 percent population. Dependent variable is income growth of bottom 20 percent of population.

Main focus of paper is to investigate the impact of financial sector's development along with banking crises (financial instability) on earnings of poor people. We also include several other variables as control factors, which might affect income of said poor population such as economic growth (GDPC), agriculture as share of GDP (AGR), manufacturing as share of GDP (M), Total investment as share of GDP (INV) and inflation (CPI) proxy for monetary instability. It is expecting that economic growth improves the earnings of poor population through pro-poor policies. Major population portion is living in rural areas and engaged formally or informally with agriculture sector. Agriculture sector is providing more employment which will increase income of lower segments of population and it will also enhance its share to GDP.

Manufacturing value-added also increases income of poor people through employment generating activities which improves income distribution along with increase in income lower

¹ It has been in literature to base measure of financial development on ratio of some broaden measure of money stock, usually M2, to level of nominal. But we used ratio of credit provided by financial intermediaries to private sector to GDP. As it is supply to private sector which, according to McKinnon/ Shaw inside money model, is ultimately responsible for the quantity and quality of investment and, in turn, for economic growth, this variable may be expected to exert a causal influence on real GDP per capita. This measure isolates credits issued on private sector as opposed to credits issued to the public sector, and it excludes credits issued to central bank. It is believed that, it is better than other measures used in literature.

segment of population. Employment opportunities both for skilled as well as unskilled labor are generated through investment activities. This situation raises the aggregate income and hence improves the economic position of poor segment of population. Finally, inflation, assuming that, monetary instability hurts the poor and middle class relatively more than rich because latter has better access to financial instruments that allows them to hedge their exposure to inflation². Thus, it is expected that negative effects of inflation on the income of local poor population will be more severe. Data for concerned variables have been obtained from World Development Indicators (WDI, 2006) and Economic Survey of Pakistan (2006). The data of income share of Bottom 20% population has been taken from Social Poverty and Development Center's Annual Report (2006) generated by Haroon Jamal (2005).

III. METHODOLOGICAL FRAMEWORK

Augmented Dickey Fuller (ADF) test is applied to observe the unit root problem. ADF test to check the stationarity series is based on the equation of the below given form:

$$\Delta y_t = \beta_1 + \beta_2 t + \delta y_{t-1} + \alpha_i \sum_{i=1}^m \Delta y_{t-i} + \varepsilon_t \quad (2)$$

Where ε_t is a pure white noise error term and

$$\Delta y_{t-1} = (y_{t-1} - y_{t-2}), \Delta y_{t-2} = (y_{t-2} - y_{t-3}) \text{ etc}$$

This test determines whether the estimates of δ are equal to zero. Fuller (1979) provided cumulative distribution of the ADF statistics, if the calculate-ratio (value) of the coefficient δ is less than τ critical value from Fuller table, then y is said to be stationary³.

In (1999) Pesaran & Shin and later on Pesaran, Shin and Smith (2001) introduced the Bounds Testing Approach for Co-integration called Autoregressive Distributed Lag Model (ARDL) and error correction mechanism (ECM). ARDL bounds testing approach is employed hereafter. The augmented model is of following form believing that financial development impacts positively to the income of poor segments of population. Equation-1 is being modeled as conditional ARDL-ECM equation:

² See for example, Easterly and Fisher (2001)

³ 't' ratio of coefficient δ is always with negative sings.

$$\begin{aligned} \Delta LGR = & \alpha + \beta T + \phi_1 LGR_{t-1} + \phi_2 LFD_{t-1} + \phi_3 FNS_{t-1} + \phi_4 LGDPC_{t-1} + \phi_5 LAGR_{t-1} + \phi_6 LINV_{t-1} \\ & + \phi_7 LM_{t-1} + \phi_8 CPI_{t-1} + \sum_{i=1}^p \Phi_1 \Delta LGR_{t-i} + \sum_{i=1}^p \Phi_2 \Delta LFD_{t-i} + \sum_{i=1}^p \Phi_3 \Delta FNS_{t-i} + \sum_{i=1}^p \Phi_4 \Delta LGDPC_{t-i} \\ & + \sum_{i=0}^p \Phi_5 \Delta LAGR_{t-i} + \sum_{i=0}^p \Phi_6 \Delta LINV_{t-i} + \sum_{i=0}^p \Phi_7 \Delta LM_{t-i} + \sum_{i=0}^p \Phi_8 \Delta CPI_{t-i} + \eta_{t-1} + \mu_t \dots \dots (3) \end{aligned}$$

Where α, β and μ are intercept component, time trend and error term respectively. This is to test the null hypothesis that there prevails no co-integration among investment and saving plus battery of other variables: $H_a : \phi_1 = \phi_2 = \phi_3 = \phi_4 = \phi_5 = \phi_6 = \phi_7 = \phi_8 = 0$ while $H_a : \phi_1 \neq \phi_2 \neq \phi_3 \neq \phi_4 \neq \phi_5 \neq \phi_6 \neq \phi_7 \neq \phi_8 \neq 0$ shows opposite side of null hypothesis. Null hypothesis of no co-integration is rejected if calculated F-statistics is higher than both lower and upper critical bound values and vice versa. If calculated F-statistic is between lower and upper bounds the result of the test is inconclusive. All variables are log-form so there coefficients are called elasticities except inflation rate. $\phi_2, \phi_3, \phi_4, \phi_5, \phi_6, \phi_7, \& \phi_8$ are long run coefficients while $\Phi_1, \Phi_2, \Phi_3, \Phi_4, \Phi_5, \Phi_6, \Phi_7 \& \Phi_8$ are indicating behavior of independent actors in short span of time. Speed of adjustment is shown through inclusion of η .

IV. EMPIRICAL PSYCHOLOGY

The main advantage of ARDL technique is that it can be applied regardless of stationary properties of variables in the model and allows for inferences on long run estimates, which is not possible under other Co-integration techniques (Sezgin and Yildirim, 2002). ADF unit root test is utilized to ensure that no variable is having $I(2)$ order of integration. ARDL approach collapse if variable is integrated at $I(2)$. It is concluded that all running actors in model are stationary at $I(1)$.

Table-1. Unit Root Estimation

Variables	ADF test at Level		ADF test at 1 st Difference	
	Calculated values	Inst-value	Calculated values	Inst-value
GR	-0.087	0.9929	-4.992	0.0017
FD	-1.914	0.6239	-5.446	0.0005
FINS	-2.218	0.4646	-5.017	0.0016
GDPC	-2.692	0.2459	-5.307	0.0008
CPI	-1.704	0.7264	-7.723	0.0000
AGR	-2.778	0.2148	-5.197	0.0010
M	-2.380	0.3825	-5.030	0.0015
INV	-3.009	0.1450	-7.437	0.0000

Sensitivity Analysis

Serial Correlation LM, F = 1.004(0.3833)

ARCH Test: 0.1786(0.6755)

Normality J-B Value = 1.1355(.5667)

Heteroscedesticity Test, F = 1.6511(0.1727)

Ramsey RESET Test, F = 0.0458(0.8325)

We turn to PSS (2001) ARDL cointegration approach after having a look on order of integration of income growth of local indigenous people, financial development and financial instability plus battery of other variables in the model. This procedure is employed to investigate the Cointegration among the variables. Table-2 gives complete picture of empirical estimation for PSS F-statistics. PSS F-statistics is 7.6369 while lag order 1. In such small sample data, AIC does not allow us to take lag more than 1 due to problem of degree of freedom. PSS F-statistics is higher than lower and upper critical bounds at 1 percent level of significance. It is concluded that empirical evidence confirms the existence of Cointegration between financial development and income of said poor segment of population plus battery of other variables in the basic model. Long run marginal impact of independent actors is explained in Table-3.

Table-2. ARDL Estimation for Long Run Friendship

Lag-order	F-Statistics Value	Significance level	Bound Critical Values (un-restricted intercept and no trend)	
			<u>I(0)</u>	<u>I(1)</u>
1	<u>7.6369</u>	1%	3.74	5.06
		5%	2.86	4.01
		10%	2.45	3.52
Parsimonious Model Estimation for C-integration				
Lag-order	Wald - Statistics Value	Prob-value	Chi-square	Prob-value
1	<u>5.3458</u>	0.0198	42.7667	0.0000

Empirical psychology posits that efficient financial sector contributes in the income growth of the poor families both directly and indirectly. First, well-functioning and developed banking sector declines the liquidity constraint and said poor segment of society smooth their consumption as well as invest in human and physical capital to improve their well-being. Second, financial development exerts positive impact on economic growth and growth is good for poor section of population. Financial instability impedes the income of said class as by cancellation of **McKinnon's Conduit Effect (MCE)**. During financial instability, banking sector never prefer to provide loans to small borrowers. This increases liquidity constraint and retards the growth of income of poor segment in the society.

This suggests that the most disadvantaged population benefit more from the ability of financial sector's performance to facilitate transaction and provide savings opportunities in the country. It is also concluded that deprived individuals could not pick the greater fruits from availability of credit due to instability in financial sector through detrimental channels. It is posited that investment rate in the any developing economy depends on the accessibility of finance. Banking crisis not only induces the rate of investment but also growth rate. Further more, financial instability is also harmful for said poor section of population directly.

Table-3. Long Run OLS (Ordinary Least Squares) Results

<i>Dependent Variable: LGR</i>			
Variable	Coefficient (T-statistics)	Coefficient (T-statistics)	Coefficient (T-statistics)
Constant	2.021 ^a (35.200)	2.726 ^a (12.065)	2.303 ^a (18.773)
LFD	0.033 ^a (7.406)	0.021 ^a (3.782)	0.032 ^a (5.679)
FINS	-0.002 ^a (-24.193)	-0.0012 ^a (-4.078)	-0.002 ^a (-10.477)
LGDPC	-0.024 ^a (-6.301)	-0.018 ^a (-5.574)	-0.034 ^a (-3.786)
LGINI	-	-0.191 ^b (-2.733)	-
CPI	-0.015 ^a (-3.031)	-0.032 ^a (-5.155)	-0.02 ^b (-2.334)
LAGR	0.026 ^b (2.563)	0.026 ^b (2.654)	-0.0082 (-0.676)
LM	0.028 ^b (2.478)	-	0.0051 (0.426)
LINV	0.009 ^c (0.0733)	0.0114 ^b (2.301)	-0.008 (-1.435)

LTGDP	-	-	-0.0019 (-0.373)
LTGDP_{t-1}	-	-	0.0008 (0.169)
LTGDP_{t-2}	-	-	0.0117 ^b (2.593)
$R^2 = 0.99967$ Durban-Wat = 1.8009 F-stat = 11935.31		$R^2 = 0.99968$ Durban-Wat = 1.6171 F-stat = 12413.92	
		$R^2 = 0.9998$ Durban-Wat = 2.185 F-stat = 11552.35	

Note: a "b" c show significance at 1% (5%) 10% level.

Bottom 20 percent population is more vulnerable to growth volatility than elite or rich class due to asymmetric information between falling and rising aggregate income periods [see for more details, (Jeanneney and Kpodar, 2005, 2008)]. It is believed that falling periods decline the income of deprived individuals more than the increasing ones perk up it. Economic growth does not seem to enhance the income level for concerned population. Effects of economic growth are reaped by major hubs of country. Trend of income for poor class lowers by point 24 percent with 10 percent increase in growth or development. This reveals the continued existence of people in the upper-echelon of income distribution in Pakistan. This means economic growth declines the well-being of deprived individuals by pushing their income level downward.

Monetary instability declines the purchasing power of said poor segment of population. It is argued by Easterly and Fischer (2001) that prices rise sharply during economic prosperity and don't fall expectedly in recession periods. Poor class is more vulnerable than rich class; income of the poor segment of population is mostly determined by the state 'such as pension, state subsidies or direct transfers' that is not fully indexed to inflation. Agriculture is the main contributor after agro-based manufacturing in the incomes of poor rural people. This population lives in rural areas and more than 90 percent involve with agriculture sector directly and indirectly. It not only provides employment opportunities but it also ensures food security in rural areas. It is believed that improved performance of agriculture sector has direct and immediate rising impact on the incomes of the said people. Improved agri-based manufacturing sector also exerts positive impact on income growth of poor rural population of Pakistan. Investment is also allied positively with an enhancement of income for bottom 20 percent population but has negligible impact. 20 percent increase in investment is connected with 0.18 percent income growth of the said segment. As investment opportunities are mostly

concentrated to major cities. Therefore, poor people residing in under-developed rural areas could not benefit properly due to city-investment phenomenon.

Income inequality (GINI) is also a major determinant for poor people's income growth. There is an inverse association between income's share of rich or top 10 percent segment of population and bottom 20 percent. It is argued that more income inequality means less for lower class. Pakistan is an open economy and fruits of trade-openness (TGDP) take time to reach lower segments of population. It is concluded that in social sectors current trade policy will benefit bottom 20 percent people after two or three years.

Table-4 explains the results of short run behavior indicating that current income of poor people contributes to improve their income levels in future. Improved financial sector raises the income of bottom 20 percent population moderately but income declines through financial instability in short span of time. Rising inflation also lowers their income insignificantly. Developed agriculture and manufacturing sectors provide employment opportunities for unskilled and skilled labor also that push their incomes upward and improve their well-being in Pakistan. High significance of ecm_{t-1} is further proof of the existence of stable long run relationship among running actors. This coefficient estimate is equal to -0.2404 for short run implying that deviation from the long span of time domestic investment is corrected by almost 24 percent over each year at 5 percent level of significance.

Table-4. Short Run Behavior
Dependent Variable: DLGR

Variable	Coefficient	T-Statistic	Inst-value
Constant	-0.0022	-1.764	0.0911
DLGR_{t-1}	0.6055	3.556	0.0017
DLFD	0.0058	2.623	0.0152
DFNS	-0.0002	-2.116	0.0452
DCPI	-.00004	-0.787	0.4394
DLAGR	0.0090	1.932	0.0657
DLGDPC	-0.0034	-1.606	0.1220
DLM	0.0144	2.516	0.0193
DLIN	0.0028	1.349	0.1902
Ecm_{t-1}	-0.2404	-2.178	0.0399

R-squared = 0.6507

Adj-R-squared = 0.5140

Akaike info Criterion = -11.641

Schwarz Criterion = -11.187

F-statistic = 4.7608

Prob(F-statistic) = 0.0012

$$\text{Durbin-Watson} = 2.258$$

The regression specification tests remarkably well and passes the sensitivity analysis against non-normality of error term, serial correlation, heteroscedasticity, autoregressive heteroscedasticity and misspecification of functional form. The stability of error correction model is investigated through employment of cumulative sum and cumulative sum of squares test on the recursive residuals. As argued by Brown et al., (1975) cumulative sum test detects systematic changes from regression coefficients where as cumulative sum of squares test is able to detect sudden changes from constancy of regression coefficients. Appendix-A shows the Figure 1 & 2 one by one. Cumulative sum statistics lie within the 5% confidence interval bands. Similarly, statistics of cumulative sum of squares are within critical bands suggesting no structural instability in residual of equation for *AGR*.

V. CONCLUSION AND POLICY RECOMMENDATION

Paper explored the association between financial development and income growth of poor people in the case of small developing economy like Pakistan. Detrimental impacts of financial instability also discussed not only in theory but also through empirical exercise. Advanced technique like ARDL procedure employed for co-integration utilizing time series sample covering 1971-2005 time period.

Empirical psychology posits that improved financial sector is more beneficial for said poor segment of population. Financial development improves their income levels through investing in physical and human capital directly and indirectly by rising economic growth. It is concluded that **McKinnon Conduit Effect** prevails in Pakistan. Financial instability is detrimental for these poor people because during liquidity constraint, this segment is compelled to invest in physical and human capital and, hence development in financial markets become advantageous for them which provides genuine opportunities to improve and utilize their savings. However, at same time, safety of Poor's deposits is no longer ensured during banking crises mostly in developing countries.

Increased economic growth is reducing the income share for deprived portion of population due to unequal income distribution in the country. Worse of income distribution reveals that

high share of income is for elite class and low for the lowest class (bottom 20 percent population). Monetary instability also declines the income levels of the disadvantaged population by lowering their purchasing power. Enhanced agricultural, employment generating manufacturing sector and investment activities push incomes of said personals. Trade-openness is also having beneficial impacts on poor classes of people after a time lag in Pakistan.

Policy recommendations of this exercise focus mainly on the stable development of the financial sector. This will ensure credit accessibility to the poor people in their local areas who have otherwise limited exposure regarding the outside market. More effective use of their savings translated in a steady increase in their incomes will also help in the improvement in their living standard. In Pakistan, maximum population resides in rural areas, they have lesser skills with agriculture as their main occupation and this makes strong case for agricultural reforms favoring the local people. Both agriculture and agri-based manufacturing sectors should continue to be labor intensive in character as they have the potential for employment as well as income generation of the un-skilled labor. The formulation of government policies, both at the macro and micro level, needs that these people should be considered on equal footing and should not be excluded from various development programs rather undertaken on priority basis.

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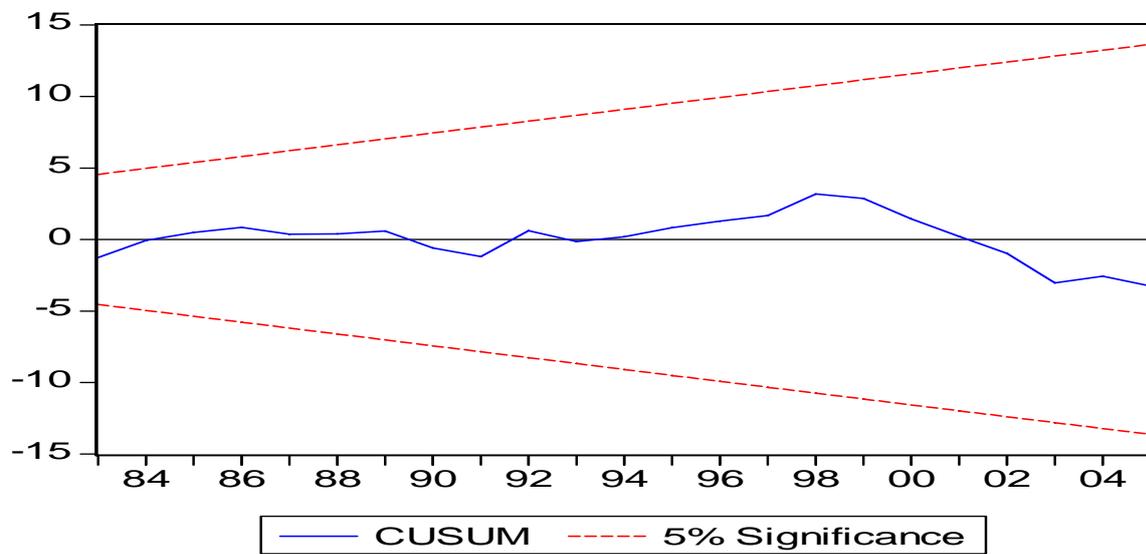
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Appendix-1

Figure 1

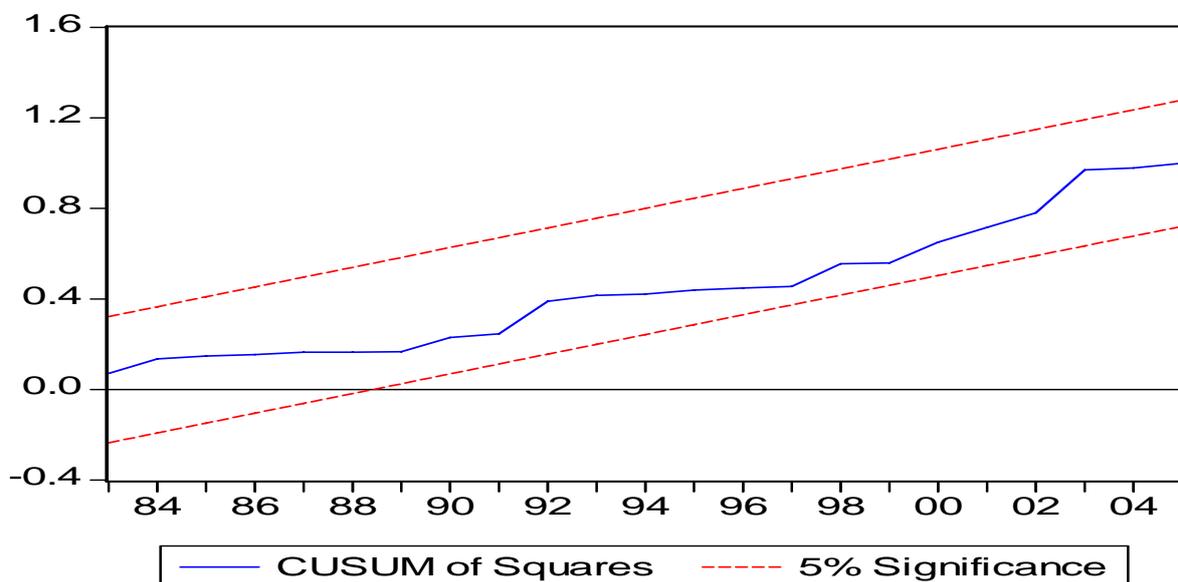
Plot of Cumulative Sum of Recursive Residuals



The straight lines represent critical bounds at 5% significance level.

Figure 2

Plot of Cumulative Sum of Squares of Recursive Residuals



The straight lines represent critical bounds at 5% significance level.