FINANCIAL CRISIS IN SOUTH ASIA AND ITS IMPACT ON POVERTY IN PAKISTAN, A CASE STUDY OF SINDH BY USING CGE-MODEL

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Abstract

This research investigates the economic recession and its impact on poverty in Sindh. Data were collected from 2000 respondents from five districts of upper Sindh, by using simple random technique; structural questionnaire was design as a measurement tool. Data were analyzed by using SPSS 16.5 version. It was revealed that poverty is raised by 15 percent from last six month in these selected areas. Peoples purchasing power is decreased and most of the cases they won't have three meals. It was also observed that in few areas people were mentally disturbed due to the overall economic recession. Purchasing power of rural people regarding basic needs were also declines by 10 percent. It was revealed that poverty in Rural Sindh is increasing compare with Punjab and N.W.F.P. and Baluchistan. The government has initiated different projects with recently but the impact is not big due to over unemployment. It was further revealed that poverty is on peak in Rural Sindh People are selling their children for only Rs.25000. The results shows that in order to reduce rural poverty, in Pakistan government should give highest priority to the rural areas of Sindh these types of investments not only have much larger poverty impacts per rupee spent than any other government investment, but also generate higher productivity growth. Apart from government they should think about the way to reduce the poverty in rural areas.

Key Words: *Global, Economic, Recession, Poverty, Pakistan*

1. INTRODUCTION

The global economy is facing its worst prospects in more than half a century, with increasing financial losses, falling asset prices, and a deep downturn in real economic activity. International trade has decelerated sharply, with global export volumes declining for the first time since 1982. As labor market conditions have deteriorated, consumer spending, business investment, and industrial production have also declined, the Federal Reserve lowered the target for its benchmark interest rate and established a target range for the federal funds rate of 0 per cent and 0.25 per cent. The European Commission in November (2008) unveiled an economic recovery plan worth €200bln.with aims to save further job losses, stimulate spending and boost consumer confidence. The ECB has reduced its key policy rate from 4.25 per cent in September to 2 per cent by mid-January. The British central bank has reduced interest rates four times since April from 5.0 per cent to 1.5 per cent. The latest half-percentage point cut in January 2009, that brings the rate to its lowest level in the central bank's 315-year history, was necessitated by weakening consumer spending, a tightening credit market for households and businesses, and a deteriorating business and residential investment outlook. Bank of Japan has cut interest rates from 0.5 per cent to 0.3 and then to 0.1 per cent by mid-December, and has adopted several liquidity enhancing measures. The Bank of Korea lowered its Base Rate from 5.00 per cent in early October to 2.50 per cent by January 2009. China has cut lending rates considerably since mid-September and unveiled a trillion-Yuan fiscal stimulus package in early November to rejuvenate the weakening economy. The Bank of Thailand cut the benchmark interest rate by 75 basis points to 2 per cent in January, the decision, which follows a 1-percentage point reduction in December, is more aggressive than expected.

In early September (2008), mortgage lenders Fannie Mae and Freddie Mac, which account for nearly half of the outstanding mortgages in the US, were rescued by the US government in one of the largest bailouts in US history. Lehman Brothers filed for bankruptcy protection, becoming the first major bank to collapse since the start of the credit crisis. . During this time 94 year old US bank Merrill Lynch, agreed to be taken over by Bank of America for $50mln to avoid bankruptcy. The US Federal Reserve announced a $85mln rescue package for AIG, the country's biggest insurance company, to save it from bankruptcy, in return for an 80 per cent public stake in the firm. Following a run on its shares Britain's biggest mortgage lender HBOS was taken over by Lloyds TSB in a £12 mln deal creating a banking giant holding close to one-third of the UK's savings and mortgage market. Soon after, Washington Mutual, the giant mortgage lender which had assets valued at $307mln., hit by mortgage defaults was closed down by regulators and sold to JPMorgan Chase. By the end of September (2008), the credit crunch hit Europe's banking sector as the European banking and insurance giant Fortis is partly nationalised to ensure its survival. This was followed by a wave of nationalisations and government bailouts, as well as increased deposit guarantees for major European banks and mortgage lenders.

The UK government announced plans to pump £37bln into three UK banks Royal Bank of Scotland (RBS), Lloyds TSB and HBOS, in one of the UK's biggest nationalisations. The US government unveiled a $250mln plan to purchase stakes in a wide variety of banks in an effort to restore confidence in the sector. South Korea announced a $130mln financial rescue package to stabilise its markets - by offering a state guarantee on banks' foreign debts and promising to inject capital into struggling financial firms if necessary. The Dutch government injected €10bln into the banking and insurance company ING; the government had earlier announced the establishment of a €20bln fund to protect the financial sector from the credit crisis. Sweden's government announced credit guarantees to banks and mortgage lenders up to 1.5 trillion kroner ($205 bln) and also set aside 15 billion kroner as a bank stabilisation fund. In end November again, the US government announced a $20 bln rescue plan for troubled banking giant Citigroup after its shares plunged by more than 60 per cent in a week. The US Treasury created the capital purchase program as part of the Troubled Asset Relief Program (TARP) and allocated $250 bln. under the program to invest in US financial institutions; this is the first time the US Treasury has recapitalized private banks. Towards end November, Pakistan and Iceland received emergency loans from IMF, Iceland being the first western European nation to require an IMF loan since 1976, due to the failure of Landsbanki and Ghitmir, the second and third largest Iceland banks.

Poverty blights the life of millions in Africa, Asia and Latin America. Most of the poor, at least in Africa and Asia, reside in rural areas, dependent directly or indirectly on agricultural land. The rural poor may also be tenants, either as share croppers (called by various names) or as bonded labor in some countries of Asia or “colonos” on the haciendas in Latin America. These household often have access to the usufruct of land, however tenuous their attachment to land. An increasing number of rural poor are, however, the landless workers, who could be permanent, seasonal and even migratory. The temporary and migratory nature of rural labor has become the most visible sign of “agrarian crisis” in many underdeveloped countries. It is also a reflection of the extent to which the rural sector has been brought into the nexus of the dominant international (capitalist) economy.

The households of the rural poor cannot in reality be neatly demarcated as distinct and independent entities. They may be dependent for livelihood on a multiple of sources. Often, a multiplicity of occupations is their single most shared characteristics, reflecting an important survival mechanism. Household labor is their basic source of income, part of which they must use their small (and often fragmented) land parcels (owned or leased) and the other part they must sell increasingly to others within and outside agriculture. The increasing in the population of rural household has dramatically the living standard of the people of Pakistan, poor shows the severe constraints they face in raising their living standards within the existing agrarian structure.

Pakistan is faced with twin challenges of reviving growth and reducing poverty. The poor in Pakistan are not only deprived of financial resources but also lack access to basic needs such as education, health, clean drinking water and proper sanitation. Limited access to education, health and nutrition undermines their capabilities, limits their ability to secure gainful employment and results in income poverty and social exclusion. Despite great development efforts made in Pakistan during 58 years, the extent of poverty in the country has remained shockingly great and the living standard of masses alarmingly low. Based on the requirement of 2350 calories per adult per day, the planning division of government of Pakistan has adopted the official poverty line for the Household Income and Expenditure Survey (HIES) 2004-05 as Rs. 875.64 per person per month. According to the caloric based poverty definition (headcount ratio), 32 percent people in Pakistan lived below poverty line in 2005. The economic survey of Pakistan 2007-08 indicates that the GDP growth was achieved at 8.4 percent, which made Pakistan the fastest growing economy after China. But despite high growth rate increasing trends of poverty continue in Pakistan.

2. LITERATURE REVIEW

Kakwani (1993) explored the relation between economic growth and poverty for Cote d' Ivoire from 1980-85. The study used the methodology of Kakwani and Subbarao (1990) to measure separately the impact of changes in average income and income inequality on poverty. The methodology was applied to the data taken from the 1985 Living Standards Survey in Cote d' Ivories. Poverty was found to be highly sensitive to economic growth. Infact, poverty in Cote d' Ivoire was found to decrease faster than the economic growth rate provided the growth process did not lead to an increase in income inequality. However, poverty measures were found to be considerably more elastic for changes in inequality. The numerical results for Cote d' Ivoire suggested that the smaller the poverty threshold, the greater the relative sensitivity of poverty was for changes in income inequality than for changes in the mean income. Thus, the ultra poor were considerably more affected by the changes in income inequality than by changes in mean income. The analysis also provided a link between the growth rates in various sectors of the economy and the total poverty. Using the poverty Elasticities and projected per capital growth rates, it was estimated that total poverty in Cote d' Ivoire would have increased at an annual rate of 3.63 percent during the 1986-90 period. The effect of changes in intersectoral inequality was computed to be equivalent to an increase in poverty by 1.95 percent.

3. DATA COLLECTION METHODOLOGY

Data were collected from 200 households from five districts of upper Sindh by using the simple random technique; a structural questionnaire was design as an instrument tool for measuring the poverty. It is widely acknowledged that applied general equilibrium (AGE) or computable general Equilibrium (CGE) modeling has become the tool of choice for analysis of a wide range of poverty alleviation policy issues such as tariffs and non-tariff barriers (NTBs) in both developed and developing countries in a variety of settings. In particular, AGE modeling is useful for analyzing the welfare effect of poverty that needs to address second-best issues, where there are significant interactions between policy measures for one sector and distortions elsewhere in the economy. Such models have two distinctive features: they incorporate a number of distinct sectors, and the behavioral equations of the model deal with the response of industries and consumers to changes in relative prices (Adams et al., 1999). This development is explained by the capability of CGE models to provide an elaborate and realistic representation of the economy, including the linkages between all agents, sectors and other economies (Brockmeier, 1996) AGE analysis also provides a valuable tool for putting things in an economy-wide perspective (Hertel, 1999). The general equilibrium framework contains all commodities, factor markets together with decision-making agents who respond to price signals and are internally consistent 7 through capturing the many important feedback effects. Therefore, conceptually, these models can explicitly capture all the economy-wide interactions and inter-sectoral linkages. Hence, these models are very useful for analyzing the changes in sectoral output, product prices, factor usage, and factor prices as well as changes in national welfare measures consequent to changes in trade regimes. CGE evaluations typically work with theoretical models, and allow for more interaction among endogenous variables in that they can capture the numerous complex relationships between variables of policy interest in the model economy. The usefulness of a partial equilibrium approach is limited in analyzing the effect of trade policy changes, which are propagated throughout the economy. For example, the changes of tariff policy affect the consumption, production and relative prices of imports and their domestic equivalents, and ultimately, allocation of resources within the policy-changing country.

4. RESULTS AND DISCUSSION

We used the full information maximum likelihood (FML) technique to estimate the equations system. The results are presented in table 3. The incidence of landlessness and rural population growth are positively but insignificantly correlated with rural poverty. The GDP growth variable has a statistically insignificant impact on rural poverty has already been captured by other variables

in the equation, such as growth in TFP, wages, and non-farm employment. The significance test is the joint t test of three parameters of the PDLs. On the other hand, rural electrification, government spending on health, rural development, and soil and water conservation are not statistically significant. The impact of state GDP growth on growth in agricultural TFP, However the coefficient for GDP is positive and statistically significant in the non farm employment equation, and this variable may be capturing the TFP effect.

	HYVs	Irrigation	Village Electrified	Literacy Rate	Road Density	Production Growth	Productivity Growth	Incidence of Poverty
	%	%	%	% km/	1000 km	%	%	%
All Pakistan Average								
1993	21	23	34	23	2414	100	100.00	55
1998	41	28	57	30	3670	120	112.05	48
2003	53	33	85	35	4861	152	120.69	34
2008	64	33	89	39	5221	165	117.86	60
Standard Deviation								
1993	15	18	22	6	1563	na	na	14
1998	19	20	22	7	2189	27	24	13
2003	23	21	13	8	3242	16	21	10
2008	20	23	10	9	3581	18	21	20
Annual Growth Rate (%)								
1993-1997	6.25	1.84	5.37	2.47	4.50	1.95	1.37	
1998-2002	3.10	1.69	4.38	1.61	3.05	3.82	1.99	
2003-2007	2.10	-0.88	0.96	2.68	1.34	2.09	-0.59	
2008	4.19	1.20	3.96	2.17	3.11	2.11	0.69	

Table 1: *Changes in Technology, Infrastructure, Agricultural Production and Poverty in Rural Pakistan, 1993-2008*

Note : Standard deviations for production and productivity growth are calculated using the growth index current and last periods (1993-2008).

Exogenous Variables

POP-	One year lag of rural population growth.
WAP1	World agricultural price index (average export price for rice, wheat and corn).
GDP-	One year lag of gross domestic product.
ATT	Lagged five-years moving average of the terms of trade variable.
TEP	Total factor productivity growth at the national level.
RAIN	Annual rainfall

Endogenous variables

IRE	Government expenditure on irrigation, both from revenue and capital accounts
RDE	Government spending (both revenue and capital) on agricultural R&D.
ROADE	Government investment and spending in rural roads
EDE	Government spending on rural education
PWRE	Government revenue and capital spending on rural power
GCSSL	Government capital stock accumulated in soil and water conservation investment. It is the weighted average of the soil and water conservation investment.
SOIL	where SOIL is government expenditure on soil and water conservation at time. The weights are 0.4, 0.3, 0.2, and 0.1 respectively with three years lag.
GCSHEL	Government spending on medical and public health and family welfare measured in stock terms using three years lag similar to expenditures on soil and water conservation.
GERDEV	Government spending on rural and community development measured in stock terms using three years, Similar to expenditures on soil and water conservation.
P	Rural population falling below poverty line
LITE	Literacy rate of rural population
ROADS	Road density in rural areas
IR	Percentage of total cropped area that is irrigated (sum of both public and private irrigation).
PUIR	Percentage of total cropped area under public irrigation (canal irrigation).
PRIR	Percentage of total cropped area under private irrigation (Wells, tube wells, and tanks).
PVELE	Percentage to rural villages that are electrified
WAGE	Wage rate of rural labor.
NAEWPLY	Percentage of non agricultural employment in total rural employment
TFP	Total factor productivity growth (Tornqvist-Theil index)
LANDN	Percentage of rural households that are landless.

Table 2: *Definition of Exogenous and Endogenous variables*

Expenditure Variable		Elasticities			Marginal impact		
No. of poor people increased							
	T-Values		Rank	T-Values		Rank	T-values		Rank
R&D	74.4	-0.067*	5	8.4	-0.25	3	1.67*	5.02	2
Irrigation	56.45	-4353	3	76.45	-0.676	1	2.23*	6.89	3
Road	65.9	-00345	1	85.9	-0.455	2	2.69*	4.54	1
Education	565.0	-00903	4	765.0	-0.098	6	2.89*	0.768	4
Power	-0.987	-0876	9	-0.787	-0.345	10	4.87*	0.123	8
Soil and Water	34.7	-008436	10	64.7	-0.456	9	0.44.7	0.12	10
Rural development	76.7	-00453	8	86.7	-0.456	8	0.457	0.234	9
Health	79.0	-00673	7	69.0	-0.657	7	0.3333	0.34	7

Survey-2008-09
Terms of trade s divided by a relevant non agricultural GNP deflator.

***Table 4**. Poverty and Productivity Effects of Government Expenditures*

PUIR =	PUIR =	NAMEPLY=	WAGE=	TFP=	P=
0.071 + (2.23)*	-0.021+ (-0.66)	-0.029 (-2.72)*	-0.035 + (-1.39)	-0.026+ (-0.78)	-0.034 – (-1.32)
0.918 PUIR+ (18.61)*	0.087TIR + (4.49)*	0.058 TFP + (-0.67) +0.209 GDP (2.60)*	0.129TFP + (1.86)* +0.273 GDP-1 (1.32)	0.255 Trde+ (1.82)* +0.0015 Gcssl – (0.37)	0.171 TFP – (-2.58)*
0.012PVELE (0.87)	0.037 PVELE (1.05)	0.190 ROADS – (2.45)*	0.231 ROADS + (2.28)*	0.215 Ir + (1.83)* 1.141 GDP-1 + (-0.97	0.185 WAGE + (-2.24)*
		0.045 PVELE + (-0.94)	0.062 PVELE + (0.57)	0.242 Road+ (2.43)* 0.272 Ran (-5.47) *	0.263 TT – (2.52)*
		0.710 LITE + (3.27)*	0.939 LITE + (2.01)*	0.062 Pvele + (0.606)	0.594 NAMEPLY+ (-3.12)*
		0.710 LITE + (0.24)	0.026 GCSHEL – (0.83	0.708Lite + (1.95)*	0.024 LANDA+ (0.43)
		0.011GCSHEL + (2.23)*	0.024 GERDEVE + (-0.88)	0.012 Gcshel + (0.39)	0.320 POP_{-1}+ (0.31)
		0.030 GERDEV- (-0.37)	0.013 GCSSL (0.74)	0.022 Gerdev (0.63)	0.072 GDP- (0.82)
$R^{2=}$ 0.697	$R^{2=}$ 0.087	$R^{2=}$ 0.311	$R^{2=}$ 0.093	$R^{2=}$ 0.301	R^2=0.113

ROAD =	RDE=	TT =	LANDN=	PEVEL=	LITE =	ROADS=
0.224 + (5.45)*	0.107+ (2.20)*	0.025 – (2.22)*	-0.011+ (-0.89)	0.107 + (6.34)*	0.087+ (4.59)*	0.088 + (4.59)*
0.482 GDP –1 + (0.31)	0.363 GDP-1+ (0.28)	0.175 TFP – (-3.03)*	-0.011+ (-0.89)	0.072 TPWRE (2.56)*	0.067 TEDE (6.52)*	0.232 TROADE (2.83)*
0.534 ATT (2.43)*	0.550ATT (2.39)*	0.792 TFP n+ (-5.54)*	0.511POP-1- (1.82)*			
		0.271WAPI (8.03)*	0.142 NAMELY (-1.46)			
$R^2 = 0.01$	$R^2 = 0.28$	$R^2 = 0.363$	$R^2 = 0.59$	$R^{2*} = 0.028$	$R^2 = 0.277$	$R^{2*} = 0.147$

GCSHEL =	GERDEV =	PWRE=	GCSSL =	EDE =	IRE =
0.177- (5.77)*	0.113 + (2.49)*	0.133+ (1.02)	-0.14 + (-3.52)*	0.123 + (5.77)*	0.478 – (5.20)*
0.123 GDP-1+ (-0.224)	1.476 GDP-1+ (3.56)*	1.490 GDP-1+ (2.24)*	4.773GDP – 1+ (2.31)	0.336 GDP–1– (1.79)*	0.431 GDP-1 – (-0.83)
0.173 ATT (0.84)	0.677 ATT (3.11)*	1.11ATT (1.78)*	0.594 ATT (2.32)*	-0.075ATT (-0.79)*	0.254ATT (-0.61)*
$R^2 = 0.058$	$R^2 = 0.292$	$R^2 = 0.017$	$R^2 = 0.151$	$R^2 = 0.056$	$R^2 = 0.020$

Table 3. *Estimated Model*

Note: Coefficients for expenditures on R&D (TRDE) irrigation (TIRE), roads (TROADE), education (TEDE), and power (TPWRE) are sums of coefficient current and lagged expenditure. Indicates significance at the 5% level or better. The t tests for TRDE, TROADE, TEDE, and TPWRE were calculated for the linear combination of all the relevant coefficients of lagged variables (Greene 1993, p, 187). Note: Number in parentheses are indicated significance 10% level. The t value estimated a producer proposed by Greene (1993, p, 221). A liner Taylor Series approximation to the nonlinear restriction is used, using the large-sample properties of the estimates.

4.1. RURAL POVERTY ELASTICITIES AND MARGINAL IMPACT

We can derive the marginal impacts and elasticities of different types of government expenditures on productivity growth and rural poverty reduction after allowing for all relevant direct and indirect impacts term impacts because we ignore the impact of increases in income on future levels of public expenditure. The impacts of different types of government spending on rural poverty and agricultural productivity are shown in table 4. Two impact measures are presented. The first measure is the elasticity of each item of government spending, and this gives the percentage change in poverty or productivity corresponding to a 1% change in government expenditure on that item. The second measure is the marginal return (measured in poverty and productivity units) for an additional Rs.100 billion of government expenditure. This measure is directly useful for comparing the relative benefits of equal incremental increase in expenditures on different item, and it provides crucial information for policy makers in setting future priorities for government expenditure in order to further increase productivity and reduce rural poverty. The marginal returns were calculated by multiplying the elasticities by the ratio of the poverty or productivity Table 4 also shows the number of poor people who would be raised above the poverty line for each Rs. 1 million of additional investment in an expenditure item.

5. CONCLUSION

Using state-level data for 1993 to 2008, a CGE model is used to analyze the rural poverty in Pakistan. Simultaneous equations model was developed to estimate the direct and indirect effects of different types of government expenditure on rural poverty and productivity growth in Pakistan. The results show that government spending on productivity-enhancing investments, such as agricultural R&D and irrigation, rural infrastructure (including roads and electricity) and rural development targeted directly to the rural poor, have all contributed to reductions in rural poverty, and most have also contributed to growth in agricultural productivity. But their poverty and productivity effects differ greatly. Government expenditures on roads and R&D have by far the largest impacts on poverty reduction and growth in agricultural productivity; they are attractive win-win strategies. Government spending on education has the third largest impact on rural poverty and productivity growth. Irrigation investment has had only modest impacts on growth in agricultural productivity and rural poverty reduction. Even after allowing for trickle-down benefits. Government spending on soil and water conservation, and on rural and community development, including the Integrated Rural Development Program, has successfully helped reduce rural poverty, but its

impact has been smaller than expenditures on roads, agricultural R&D and education. Government health investment had no impact on productivity growth and its effect on poverty alleviation through wage increases was also very small. The results of this study have important policy implications. To reduce rural poverty, the Pakistan government should increase its spending on rural roads and R&D. These types of investment not only have a much larger poverty impact per rupee spent than any other government investment, but also generate higher productivity growth. R&D investments have a larger growth impact than roads, but their poverty impact is smaller. But perhaps even this tradeoff could be reduced if R&D were targeted more specifically on the problems of poor farmers and regions than it has been in the past. Mothers are selling their sons and daughter to get US$200 dollars. The results are quite different in the Sindh Province where poverty is increasing and it was also observed that On the other hand, government expenditures on rural development are an effective way of helping the poor in the short term, but because they have little impact on agricultural productivity, they contribute little to long-term solutions to the poverty problem.

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