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The Impact of Economic Reforms on Poverty: A Case Study of Pakistan

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ABSTRACT

Poverty alleviation has been a major concern of governments and international institutions in developing countries over the past few decades. In Pakistan, government and international organizations have implemented several economic reforms in the country to mitigate poverty and improve the living standards of the masses. The present study explores the link between economic reforms and poverty in case of Pakistan over the period of 1975-2019. The study contributes in the literature by constructing three main economic reform indices including trade reforms, domestic financial reforms and social sector reforms. It is found that trade reforms significantly reduce poverty in the long run, while domestic financial reforms are significant in poverty eradication in the short run. Other important factors determining poverty in the long run are unemployment and real output. On the basis of the findings, it is suggested that trade restrictions should be minimized and there should be focus towards increasing trade at international level. Furthermore, long term financial and social sector planning is required to increase the effectiveness of economic reforms.

Keywords: Pakistan, Economic Reforms, Poverty alleviation, governmental and international organizations.

INTRODUCTION

Being contentious issue, poverty has always been the center of attraction for research to open up new avenues. In developing countries, a variety of policies have been put forward by concerned governments to resolve this issue. The economic reforms including social, financial and trade restructuring have been considered as important causative factors in this regard. The strand of literature in favor of positive impact, pertain poverty to the process of reforms through improved socio-economic conditions and reduction in the level of poverty thereafter. This is because economic reforms mostly bring increase in investments in the country thereby helping to gain momentum in economic growth and employment that in turn contribute to reduce poverty (Kar, 2009; Rao, 2010). Economic reforms including tax reforms and social sector reforms help to ease poverty by providing easy access to food, education and health. Trade reforms help to increase employment

opportunities and efficiency of the economic system, thus help to increase income and standard of living (Santarilli and Figini, 2002; Neutal and Heshmati, 2006; Anwar, 2007). Financial reforms play a key role in providing easy credit to low-income families that help them to set up their business and facilitate income generating opportunities. It also eases the access to basic necessities of life (Raimi and Mabolaji, 2008; Awojobi and Bein, 2011; Todaro and Smith, 2012).

However, skeptics argue that reforms are associated with greater economic and social unrest as they help a specific segment of the society and may take longer time becoming beneficial. Datt (1999), Gupta (1999), Jha (2002) and Meng, et. al. (2005) has established the fact that reforms generate inequalities by decreasing social welfare provisions, increasing food prices and creating economic uncertainties. However, Wangwe (1997) elaborated that impact of reforms can be positive or negative depending upon the type of activities in which

the poor are engaged and where the poor are located i.e., rural or urban areas. Poverty decreases if poor are participating in highly profitable projects and government finances major services like health, education and infrastructure facilities.

Various trade, financial and social reforms have been initiated in Pakistan since 1980s with a perception to achieve economic growth and to escape from the cobweb of socio-economic disparities. The gradual eradication of structural rigidities ultimately translates into a sustained process of development and thus the reduction in poverty. Trade reforms have been initiated in Pakistan in the early 1980s by reducing quotas and rationalizing the structure of tariff. The liberalization of trade works through low tariff rates, reduced cost of imported goods, improved well-being and hence the relative decline in the level of poverty. The financial reforms started in 1991, with a goal of liberalization and strengthening of the banking sector (State Bank of Pakistan, 2003). Regarding social reforms, government launched Social Action Program in the mid-1980s which was aimed at improving the education, health, and population welfare. Whether such reforms proved fruitful or not, is the question to be addressed in the present study. Pakistan is facing high trends in poverty as 39 percent of the population lives below the poverty line of \$ 1.90 per day (World Bank, 2020). Government of Pakistan is undertaking several reforms on the economic and social front to bring the poor out of destitution. Therefore, studying the impact of economic reforms on poverty is important in current scenario.

Objective of the Study

The present study aspires to investigate the relationship between economic reforms and poverty in Pakistan using the annual time series data from 1975-2019. The index for social, financial and trade reforms has been constructed to determine the impact of economic reforms on poverty.¹

Organization of the Study

The rest of the study is organized as follows: Section 2 elaborates the historical perspective of economic reforms in Pakistan. Section 3 presents the review of literature. Research methodology and econometric model are discussed in section 4, while empirical findings are presented in section 5. Conclusion and policy recommendations are given in section 6 and 7 respectively.

Economic Reforms in Pakistan

This section provides the historical perspective on selected economic reforms in Pakistan. These reforms are segregated into trade reforms, financial reforms and social sector reforms.

Trade Reforms

The ultimate impact of trade reforms can be gauged through a lot of factors e.g., reduction in tariff rate, trade openness, value of imports as a percentage of aggregate consumption etc. Trade reforms have been initiated in Pakistan in the early 1980s, so that an environment can be created for well-organized and competitive manufacturing industry through an access to raw material and other essential inputs. The strategy of gradualism has been adopted in trade liberalization by making domestic market exposed to global one and abolishing quotas in 1980s. Quantitative restrictions have been replaced by tariffs to protect the domestic industries. The maximum level of tariffs was reduced from 225% in 1986-87 to 45% in 1997-98. Over the period of 1983-1994, 724 items were removed from the negative list². Furthermore, negative list was condensed by reducing the overall number of constrained intermediate goods from 142 to 16, consumer goods from 32 to 7 while capital goods from 221 to 107. In the same period, government eliminated the restricted list³ and import licensing was abolished. The gradual process of liberalization has led to a decline in protection rates. Various governments have pursued tariff reform programs since 1988 with an objective to reduce anti-export bias.⁴ The Tariff reforms of 1993 helped in the reduction of tariff rates. The maximum tariff rate was further dropped to 35

¹ Reform Indices have been computed using the methodology developed by Morris and McAlpin in 1982-83.

² "In negative list approach, trade in all commodities is permitted and unregulated unless specific measures are set out in the list of reservations. This is a liberal form trade."

³ Restricted list comprises those products that could

only be imported through designated importers.

⁴ A trade regime which is biased against exports is known as anti-export bias. An anti-export bias ratio can be computed as the ratio of effective exchange rate for import and effective exchange rate for exports i.e., EER_M/EER_X . If the ratio is greater than one, it refers to the fact that trade regime is biased against exports

percent in 2000-01. The tariff structure continued to suffer from pitfalls in some cases as various exemptions have reduced the base of import duties and results in revenue generation from limited products.

Varied export promotion strategies have been adopted by Pakistan to reduce anti export bias. To achieve this objective, flexible exchange rate policy was adopted, and rupee was depreciated by almost 58 percent from 1990-91 to 1996-97. Some other measures were also taken in this regard e.g., temporary import scheme, duty drawback scheme, refund of sales tax, export finance scheme and export credit guarantee scheme. *“The rapid economic growth strategy (REGS) announced in 2005-06 continued in the Trade Policy 2006-07, the salient features of which are increased market access through trade diplomacy, focus on trade with neglected regions of the world, strengthening of trade promotion Infrastructure including EPB/TDAP and trade mission abroad, emphasis on skill development in export-oriented industry”* (Ashfaq H. Khan). Due to the emphasis on export led growth, the trade policy of 2007-08 included improved market access, strengthening of trade promotion infrastructure, zero rating of sales tax for entire textile chain, leather products, surgical goods, carpets and sports goods etc. Pakistan’s Third Trade Policy review was held in January 2008 at the WTO Secretariat Geneva. It was noted during the review that Pakistan’s economic growth had been impressive since its previous Trade Policy Review in 2002, mainly as a result of its relatively open trade and investment regimes i.e., generally accommodative macroeconomic policies and structural reforms. Moreover, Pakistan’s ranking on the UN human development index had risen from “low” to “medium”. Poverty had fallen in line with the Government’s 2003 poverty reduction strategy, although income inequality widened slightly, and rural poverty remained “high.”⁵

In order to curtail the rising trade deficit, the government took certain measures in 2008-09 i.e., duty on non-essential and luxury items was raised in the Federal Budget 2008-09, regulatory duty ranging from 15-50 % was imposed on the import of 397 consumer items since August 2008. The Ministry of Commerce developed a three-year Strategic Trade Policy Framework (STPF) 2009-12 with an objective to achieve sustainable high economic growth through exports with the help of policy

and support interventions by the government, industry, civil society and donors. STPF 2012-15 aimed to set a target of \$95 billion exports to be achieved in three years. For this purpose, main focus was given on strengthening regional trade, export development and maintaining regulatory efficiency. In order to promote domestic and foreign investment and improve the trade situation, tariff protection policy was also rationalized. In 2015-18 STPF, industry specific packages were introduced to support industrial development. Incentives were given to 26 non-traditional sectors to boost exports. These included tax breaks, tax refunds, tariff reductions, infrastructure and investor facilitation services. Recovery in industrial and services sector brought a significant reduction in poverty estimates. In STPF 2018-2023, government reduced the regulatory duty on cotton imports to facilitate industrial production. Free trade agreements were signed with China for 313 items and State bank of Pakistan also maintained low rates on exports refinancing schemes to boost export oriented industrial production. Despite all these measures, Pakistan’s exporters faced a tough competition from Chinese and African counterparts. Pakistan’s trade deficit declined by 7.28 percent in 2019 as compared to the previous year. This reduction was observed due to decline in both exports and imports by 1.9 percent and 4.9 percent respectively. In STPF 2020-2025, Pakistan aims at exports diversification from traditional goods to high quality engineering goods. Policy reforms in current STPF include tariff rationalization and increased regional connectivity to gain access to Central Asian regions including Turkey and Iran.

Financial Reforms

Financial reforms were introduced in two sets. Firstly, they were initiated in 1993-96 and then launched in 1997-2000. In 1997 some crucial measures were taken when Banking Council of Pakistan was dissolved, and State Bank of Pakistan got the control of state-owned banks. Then in the same year it was decided that the minimum paid up capital requirement would be Rs. 500 million. Moreover, in accordance with the Basel Accord, CAMELS framework was introduced.

The share of state-owned banks in deposits gradually reduced from 93% in 1990 to only 56% in 2000 while the share of private banks rose from zero to 30% during the same period. The financial sector reforms led to an improved efficiency of the banking system.

⁵ Pakistan Economic Survey 2007-08

In year 2001, State Bank of Pakistan was reformed, and three new institutions came into being i.e., The SBP, as Central Bank, SBP Banking Services Corporation and National Institute of Banking and Finance (NIBAF) while Corporate Law Authority (CLA) was dissolved, and Securities and Exchange Commission of Pakistan (SECP) was formed to regulate capital market.

The banking sector gained dynamism and financial strength after privatization. Overall assets of the banking sector increased from Rs. 3.6 trillion 2005 to Rs. 5.5 trillion in 2008. Banks' aggregate profitability rose from Rs 63.3 billion in 2005 to Rs 46.0 billion for half year 2008. The average risk-based capital adequacy ratio (CAR) for all commercial banks strengthened from 11.4% in 2000 to 12.1% by end June 2008. In 2010-12, SBP reduced the policy rate to 9 % and then in 2012-2013 continued to finance large fiscal deficits, conducted open market operations and foreign currency swaps to expand the monetary aggregates. The policy rate was further declined to 7 percent in 2015 indicating stability in macroeconomic performance.

In 2016 the three stock exchanges namely Karachi stock exchange, Lahore stock exchange and Islamabad stock exchange were merged to form Pakistan Stock Exchange (PSX). Capital Market Development Plan 2016-2018 was formulated for protecting and building investors' confidence. Bloomberg ranked PSX fifth in the world on exhibiting a return of 46 percent in year 2016. In 2017, capital gains tax was modified and was kept at 15 percent for stocks held for less than 12 months, 12.5 percent for stocks held for more than 12 months but less than 24 months, and 7.5 percent for stocks held for more than 24 months. Accommodative monetary policy stance was adopted during 2017-18. Policy rate was increased to 6% to contain high inflationary pressures. On year-on-year basis, credit to private sector registered an increase of 15.9% as compared to 13.4% in the previous year. Banking sector followed a sustained growth trajectory and recorded growth of 16 percent during 2018. Capital adequacy ratio was 15.8 percent which was well above the minimum required level of 11.275%.

In 2019, in wake of high fiscal and trade deficits and increasing inflationary pressures, SBP followed a contractionary policy stance and increased the interest rates to 12.5%. Capital market also remained volatile with PSX showing fluctuating trend. Finance bill 2019 provided a temporary relief but PSX remained fluctuating and closed at 39,469 points in March 2019. In order to

provide short term stimulus to stock market, Economic Coordination Committee of Cabinet division authorized the government to issue a sovereign guarantee amounting to Rs.20 billion for investment in National Investment Trust. SECP took additional measures against money laundering and terror financing through framing of SECP Anti-Money Laundering/Counter Financing of Terrorism (AML/CFT) Regulations. In the beginning of 2020, policy rate was increased to 13.25% in order to combat high inflationary pressures and increased aggregate demand. Policy rate was later reduced to 8% due to improve economic outlook.

Social Sector Reforms

Pakistan has undertaken several reforms in the social sector to address different socio-economic issues faced by the country. An important reason to emphasize on the social sector development in Pakistan is to fulfill the commitment to the Millennium Development Goals that are framed to improve the welfare of the people. Despite the improvements observed in the social sector there is still much to be done. A significant portion of the population still lives below the poverty line, the share of education and health expenditures in budget is lowest in the region.

In the mid-1980s, government launched Social Action Program which was aimed at improving the education, health, water supply and sanitation, and population welfare. For this purpose, government allocated Rs. 600 billion in the budget but due to mismanagement of the resources only 60% was utilized for these programs. During the second phase of the program i.e., 1997-2002, only 45% of the allocated money was used. SAP, like other development programs of the past could not bring about the desired outcome especially in rural areas. This could be due to unawareness on the part of general public, absence of participation by the people, centralized decision making and mismanagement of the resources. The most important component of social spending includes expenditure on health and education sectors. This expenditure as percentage of GDP showed an increasing trend as it was 1.6% of GDP in 1980 and increased to 3% in 1990. During early 2000s it was reduced to 2.8%. During 2007-08, Rs. 182,646 million were spend on education. In 2008-09 Rs. 240,378million, in 2009-10 Rs. 259,525million and in 2010-11 Rs. 322,334 million were spent in education sector. Similarly for health sector this expenditure remained at Rs. 61,127

million in 2007-08, Rs. 83,714 million in 2008-09, Rs. 94,399 million in 2009-10 and Rs. 106,017 million 2010-11 (Economic Survey of Pakistan, 2011-12). Keeping in view the country's social sector performance, this expenditure is not adequate.

Government of Pakistan is committed to follow poverty reduction strategy and for this purpose minimum of 4.5 percent of GDP is allocated to social expenditures and poverty reduction programs. In 2007-08, the expenditure undertaken in the pro-poor sectors was 5.57 percent of GDP. In 2008-09 these expenditures were increased to 7.46% of GDP and further to 7.57 in 2009-10. In 2010-11 this percentage was lowered to 6.9% but was still above the minimum target (Economic Survey of Pakistan, 2011-12). National Education Policy was introduced to ensure equality in quality and access to education for all. Under 18th constitutional amendment, education was devolved to the provinces. Punjab and Khaybar Pakhtunkhwa recorded a stable gross enrollment ratio of 98 and 89% respectively while Sindh and Baluchistan showed a declining trend. Total outlay of health sector was budgeted at Rs 79.5 bn which stood at 0.35% of GDP in 2012-13.

Poverty reduction had been among the priorities of the government and Rs 775.620 bn were allocated for pro poor spending in the same year. Benazir Income Support Program (BISP) was launched by the government to provide a relief to 4.7 million beneficiaries while Rs70 bn were allocated to BISP for year 2013. Furthermore, in 18th constitutional amendment, the subject of zakat was also devolved to the provinces. The federal government allocated a sum of Rs. 59.287 bn on education in addition to the provincial budget of Rs. 59.44 bn for education in 2013-2014. Which was around 2 percent of GDP and was increased to 2.2% in 2015-2016. Health spending was increased to 0.4% of GDP in 2013-2014 which further increased to 0.45% in 2015-2016. Government allocated 4.5% of GDP to social and poverty reduction activities during the same year and prioritized 17 pro poor sectors through Medium Term Expenditure Framework in PRSP-II and spent Rs 2162.7 bn in this regard which was 7.9% of GDP. BISP budgetary allocation was also increased to Rs 75 bn in 2015-2016 and further increased to Rs. 121 bn in 2017-18.

In 2017, different youth development programs were initiated in the country to provide less educated youth with proper trainings so that they gain equal access to employment opportunities and prepare them for mega

projects like CPEC and other energy related projects. Approximately 100,000 youth got benefitted from these programs in year 2017-2018. In the same year National Poverty Graduation Program (NPGP) worth of \$150 million was approved that aimed at bringing ultra-poor and very poor graduating out of poverty. In 2018 Prime Minister National Health Program was launched in 23 districts that proved a milestone in health sector. In phase II, 40 districts were covered under this scheme and benefitted 14 million families. Under this program the privileged citizens would get the best medical facilities without any financial constraints. A total of Rs 150 bn were allocated in PSDP for this program. In education sector major reforms took place and the government-initiated development of Single National Curriculum to overcome educational disparities in the country and to ensure equal opportunity to high quality education. That program was initiated in 2019 and implemented in March 2021 in phase 1 (class 1-5) and Phase 2 (class 6-8). Phase 3 (class 9-12) is expected to be implemented in 2023. In 2019-2020, government launched "Ehsas Kafalat Program" to help people come out of the poverty trap. Furthermore, in wake of COVID-19 a relief package of Rs144 bn was allocated for immediate cash relief for poor families.

REVIEW OF EMPIRICAL LITERATURE

The impact of reforms on poverty has received a lot of attention in the literature. Some argued that reforms augment the process of growth and development and therefore reduce the level of poverty (Wangwe, 1997; Agenor, 1998; Fan *et al.*, 2000; Kar, 2009). However, others argue that the trickledown effect of reforms don't reach the masses thus help to generate poverty and inequalities in the society (Dutt and Ravillion, 1999; Cerovic, 2003; Silver, 2004; Townsend 2010).

Wangwe, S. M. (1997) examined the direct and indirect of economic reforms on poverty alleviation in Tanzania. The direct impacts can be gauged from various activities with which the poor are associated whereas indirect impacts refer to the shift of poor into new options in response to the economic reforms. The study revealed that reforms had both positive and negative impacts depending on the type of activities in which the poor are engaged. Fan *et al.*, (2000) employed a simultaneous equations framework to determine the impact of varied social reforms on rural poverty in India. They have used state-level data from 1970-93 and analyzed those economic reforms like government spending on education and infrastructure

reduced rural poverty by generating more employment opportunities in the nonfarm sector. Fan *et al.* (2004) observed the same results as stated above by using provincial-level data from 1953-2004 in the case of China. Smith (2012) maintained that trade reforms also help in poverty alleviation through increased comparative advantage, efficiency and employment opportunities. Liberalized trade help in generating income and improvement in social sector spending.

Lustig (2015) examined the role of fiscal reforms including reforms in the tax structures and social sector spending in poverty eradication. These reforms prove fruitful in increasing education, health and skills development that help to increase standard of living and decreasing inequalities across poverty groups. Ferrarini (2016) explored the impact of social sector reforms and poverty levels for low-, middle- and high-income countries. Panel analysis for 40 countries confirmed the significant role of cash transfers in poverty eradication especially in case of low-income countries. This effect comes through increased education and health spending as a result of increased cash transfers. Celikay and Gumus (2017) observed the relation between social sector reforms and poverty. It was observed that social spending including expenditures on health, education, safety nets help to eradicate poverty in the long run.

On the other hand, some researchers have found a negative impact of economic reforms on poverty eradication. Datt (1999), Gupta (1999) and Jha (2002) have established the fact that reforms are generating inequalities. Datt (1999) found that head count index of rural poverty declined during the pre-reform period (1973-74 to 1990-91), however no such trend was found during the post reform period from 1991-1997. In the case of urban sector, poverty reduction was observed in both periods i.e., pre and post reform period. Gupta (1999) observed that reforms are not pro-poor thus the level of poverty has increased in India. A study by Jha (2002) also established the fact that economic reforms have widened the regional disparities. Cockburn (2002) used micro simulation to investigate the impact of trade reforms on poverty in Nepal. He was of the view that liberalization can only be properly *examined by using a computable general equilibrium (CGE) framework*. The study revealed that urban poverty has declined while rural poverty has increased, and income equality has augmented with the rise in income.

Siddiqui and Kemal (2006) analyzed the impact of trade

liberalization and remittances on the level of welfare and poverty employing computable general equilibrium (CGE) framework in case of Pakistan. The study revealed the fact that trade liberalization through tariff reduction in the absence of reduced remittances reduced poverty during 1990s. However, they observed that a decline in remittances overweighs any positive effect of liberalized trade in the case of urban areas as opposed to the dominance of trade liberalization on remittances in rural areas. Therefore, they concluded that trade liberalization in the presence of fall in remittances reinforced poverty in Pakistan.

Vadlamannati K. C. (2008) investigated the impact of economic reforms on poverty in India from 1975 - 2006. The study constructed a composite economic reforms index comprising seven subcomponents i.e., Social Sector Reforms, Trade Reforms, Fiscal Reforms, Domestic Financial Reforms, International Financial Reforms, Structural Reforms and Public Sector Reforms. The author has used cointegration and Vector Error Correction Model (VECM) to examine the relationship among the variables. The results displayed the fact that current level of reforms effect poverty positively while the past reforms have a negative impact on the level of poverty. Dollar and Kray (2010) suggested that fate of poverty reduction in wake of economic reforms largely depends on the level of economic growth and how the fruits of economic growth are distributed among masses. In this regard openness of international trade, sound monetary and fiscal policies and developed financial system also play a decisive role. Dev (2016) analyzed the role of economic reforms initiated in 1991 in addressing poverty in India. According to the findings these reforms were successful in reducing poverty at a greater pace in second half of 2000s as compared to the poverty reduction in 1990s. These results are largely affected by productive employment creation and income distribution. Vaselevic *et al.* (2019) studied the factors determining poverty in Serbia and also discussed the conditions in which reforms can help decreasing poverty. It was concluded that during the transition period, some inequality in income distribution is inevitable due to liberalization policies. This inequality is somehow important in the initial stages of reform as they bring increase in economic growth rates, which is important for the success of reforms. However careful efforts should be directed towards managing and controlling this inequality and should not be left to the market forces.

The above review of literature suggests that the effects of

economic reforms on poverty depend on various factors including country characteristics, stabilization policies, changes in income distributions, stability of economy and generation of opportunities for population. Pakistan has been actively pursuing different reform programs related to economic and social sector in mitigating poverty since decades. Gauging the impact of reforms in poverty alleviation is however crucial for sound policy making and achieving optimal utilization of resources directed towards poverty eradication programs. There is a research gap existing on this issue in case of Pakistan which the present study aims at addressing.

DATA, MODEL SPECIFICATION AND METHODOLOGY

Data

The sample size covers the period from 1975-2013

constituting 39 observations. The data has been taken from World Development Indicators and Pakistan Statistical Yearbook (various issues). Major contribution of the present study is construction of economic reforms indices. Social sector reforms include social sector spending and rural development spending. Domestic financial reforms index consists of three indicators i.e., discount rate, number of scheduled commercial banks and ratio of total reserves to total deposits (liabilities) of banking system. Two indicators have been used to measure trade reforms index i.e., sum of exports and imports as a percentage of GDP⁶ and value of imports as a percentage of aggregate consumption. The indices of economic reforms are constructed by using the methodology developed by Morris and McAlpin in 1982-83 to construct Physical Quality and Life Index.

Table 1. Data description and sources.

Variables	symbol	definition	Data source
poverty	p	Head count index. Percentage of population living below the international poverty line i.e., \$1.9 a day	Pakistan statistical yearbook (various issues)
Social sector reforms	sr	Index of Social sector reforms comprises of two indicators i.e., social sector spending and rural development spending.	Constructed by Authors following the methodology of Morris and McAlpin (1983)
Trade reforms	tr	Index of trade reforms is constructed by using i.e., sum of exports and imports as a percentage of GDP and value of imports as a percentage of aggregate consumption	Constructed by Authors following the methodology of Morris and McAlpin (1983)
Domestic financial reforms	dfr	Domestic financial reforms index consists of three indicators i.e., discount rate, number of scheduled commercial banks and ratio of total reserves to total deposits (liabilities) of banking system	Constructed by Authors following the methodology of Morris and McAlpin (1983)
Unemployment	u	Number of unemployed workers in labor force	Pakistan statistical yearbook (various issues)
Inflation	inf	Inflation is measured by calculating change in general price level measured by Consumer Price Index.	Pakistan statistical yearbook (various issues)
Inequality	gini	Gini index is used to measure inequality in Pakistan	World Development Indicators
Economic output	g	Real GDP measured at constant prices	Pakistan statistical yearbook (various issues)

Source: Table is made by the authors.

For the construction of each reform index, the indicators selected are first normalized by using the following formula. X index= X- min/max-min. In the next step, geometric mean is calculated to obtain the composite index.

Econometric Model

Various models have been employed in the literature to estimate the relationship between reforms and poverty.

However, the results hinge on many factors, such as the period of sample, nature of the data, frequency and the countries under consideration. Following is the model

⁶ Gross Domestic Product is in 2000 US constant dollars

specified for this study.

$$\ln p_t = \beta_1 + \beta_2 \ln sr_t + \beta_3 \ln dfr_t + \beta_4 \ln tr_t + \beta_5 \ln u_t + \beta_6 \ln inf_t + \beta_7 \ln g_t + \beta_8 \ln gini_t + \varepsilon_t \text{----(1)}$$

In the above equation, all variables are taken in the log form as symbolized by the letter “l” preceding each variable. The theoretical underpinnings advocate that the impact of economic reforms is ambiguous as reforms may augment or reduce the level of poverty. Real GDP is expected to reduce poverty, while a positive relationship is expected for unemployment, inflation and gini index.

METHODOLOGY

The data set employed in present study consists of 39 observations. Persaran et al (2001) maintains that for such small sample size ‘bound’ test based on the estimation of autoregressive distributed lag (ARDL) is most appropriate method for cointegration analysis. This

testing procedure is suitable for variables having mixed order of integration. Order of integration of the variables is tested using Augmented Dicky Fuller (ADF) test and Phillips and Perron (PP) tests. ADF tests the null hypothesis that the time series is non-stationary. The testing procedure of ADF test is described in the following equation:

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta \Delta y_{t-1} + \dots + \delta_{\rho-1} \Delta y_{t-\rho-1} + \varepsilon_t \text{----- (2)}$$

Where α is a constant, β is the coefficient of time trend and ρ represents lag order. *The Phillips-Perron test builds on Dicky Fuller test and addresses the issue that the process generating data for y_t might have a higher order of autocorrelation than is admitted in the test equation—making y_{t-1} endogenous and thus invalidating the Dickey-Fuller t-test.* After checking the stationarity of the variables, ARDL method is applied to estimate the equation. The ARDL approach is represented for equation (1) as follows:

$$\begin{aligned} \ln p_t = \alpha_i + \sum_{l=1}^p \beta_0 \ln p_{t-l} + \sum_{l=0}^q \beta_1 \ln sr_{t-l} + \sum_{l=0}^q \beta_1 \ln dfr_{t-l} + \sum_{l=0}^q \beta_1 \ln tr_{t-l} + \sum_{l=0}^q \beta_1 \ln sr_{t-l} + \sum_{l=0}^q \beta_2 \ln u_{t-l} \\ + \sum_{l=0}^q \beta_2 \ln inf_{t-l} + \sum_{l=0}^q \beta_2 \ln g_{t-l} + \sum_{l=0}^q \beta_2 \ln gini_{t-l} + u_{it} \end{aligned}$$

Reparametrizing the above equation

$$\begin{aligned} \Delta \ln p_t = \alpha + \Phi_i (\ln p_{t-1} - \theta_1 \ln sr_{t-1} - \theta_2 \ln dfr_{t-1} - \theta_3 \ln tr_{t-1} - \theta_4 \ln u_{t-1} - \theta_5 \ln inf_{t-1} - \theta_6 \ln g_{t-1} - \theta_7 \ln gini_{t-1}) \\ + \sum_{l=1}^{p-1} \lambda_{1l} \Delta \ln p_{t-l} + \sum_{l=0}^{q-1} \lambda_{2l} \Delta \ln sr_{t-l} + \sum_{l=0}^{q-1} \lambda_{3l} \Delta \ln dfr_{t-l} + \sum_{l=0}^{q-1} \lambda_{4l} \Delta \ln tr_{t-l} + \\ \sum_{l=0}^{q-1} \lambda_{5l} \Delta \ln u_{t-l} + \sum_{l=0}^{q-1} \lambda_{6l} \Delta \ln inf_{t-l} + \sum_{l=0}^{q-1} \lambda_{7l} \Delta \ln g_{t-l} + \sum_{l=0}^{q-1} \lambda_{8l} \Delta \ln gini_{t-l} + u_{it} \end{aligned}$$

In the above equation ‘t’ represent time. λ s are the short run coefficients of lagged dependent variables, while θ s, represent long run coefficients independent variables. Φ_i captures the speed of adjustment from short run to the long run. In the end, post estimation diagnostic tests are also applied to confirm the authenticity of the results.

Empirical Findings and Interpretation

The results of ADF and PP tests in table below, indicate that real GDP and inflation were I (0) while poverty, unemployment, Gini index, social sector reform, domestic reform and trade reform index were all I (1). So, the most appropriate technique of estimation in this case Table 2: Unit root test.

is ARDL.

In the table above, * shows significant at 5 percent level, numbers in parenthesis represent lag length. The model was estimated using ARDL technique by following a two-step procedure. In the first step, F-deletion statistic, computed through Wald Test is used to establish the existence of long relationship. The results of the F-deletion test are reported in the following table. The value of F- statistic is 6.44 which is greater than the upper bound at 5% level of significance that confirmed the presence of long run relation among the variables. The optimal lag length of 1 was selected by using Akaike Information Criterion. The long run coefficients are shown in table 4.

Order of integration	variables	ADF	PP
I(0)	lng	-3.605* (1)	-4.240* (1)
	lninf	-3.1602* (4)	-3.175* (1)
I(1)	lnu	-4.574* (1)	-6.302* (1)
	lnp	-5.565* (1)	-3.566* (3)
	lngini	-3.589* (1)	-4.503* (1)
	lnsr	-4.019* (1)	-7.677* (1)
	lndfr	-3.486* (1)	-6.558* (1)
	lntr	-4.242* (1)	-6.469* (1)

Source: Calculated by Statistical Data.

Table 3: Wald Test

Test statistic	Value df	Probability
F- statistic	6.4466 (8,11)	0.0030
Chi-square	51.5726 (8)	0.0000

Source: Calculated by Statistical Data

Table 4: Long run coefficients

Regressor	Coefficient	t- ratio	Probability
lnsr	-0.091874	-0.96753	.344
lndfr	-0.91927	-1.6670	.110
lntr	-0.28960	-2.4553	.0010
lnu	0.98753	3.2514	.004
lninf	0.090241	0.66898	0.510
lng	-0.33625	-2.0760	0.050
lngini	-0.62530	-1.0741	0.294
C	8.9606	3.9219	0.022

Source: Calculated by Statistical Data

The estimated coefficients have expected signs. Among the three reform indices only trade reform is found to be significantly reducing poverty in the long run. If the variable 'lntr' increases by one percent, poverty is reduced by 0.289 percent. As the trade reform index includes trade openness and imports of consumption goods thus reflecting the impact of increased penetration of our economy in the global market as well as the rising share of imported consumption goods⁷.

⁷ The impact of imported consumption goods also indicates the improved well-being of the citizens thus reduction in the level of poverty. It also refers to the

This finding is consistent with the work of Qadir, *et al.* (2000). They also found trade reforms in Pakistan to be highly significant in poverty reduction. However, the estimated coefficients of social sector and domestic financial reforms index are found to be insignificant. The aim of social spending in any country is to generate educated, skilled and trained workforce that meets the job market requirements and help to increase income of the poor (Akbar *et al.*, 2020). In case of Pakistan, job market requirements are not properly addressed by our education system and therefore there is low labor absorption which may suppress the impact of such reforms on poverty (Javaid, 2017). Financial reforms fail to impact poverty reduction because in developing countries, poor segment of the society is excluded from the financial system due to low level of income, lack of information and market discrimination (Omar & Inaba, 2020).

Unemployment has a statistically significant and positive effect on poverty in the long run. The elasticity of poverty with respect to unemployment is about 0.99, suggesting that if unemployment goes up by 1 percent, on average, poverty goes up by about 0.99 percent (i.e., approximately 1 percent). These results are consistent with those of Gilani *et al.* (2009) who found that unemployment is considered to be a major blow to the earnings of low-income households. Inflation has no long run effect on poverty while real output significantly

decline in tariffs and an indicator of the liberalized trade policies

reduces poverty. An increase of one percent in real GDP reduces the poverty rate by 0.34 percent.⁸ If the economy grows then standard of living of the people improves thereby reducing the rate of poverty. Inequality does not have any strong relation with poverty in the long run. The short run estimates are reported in table 5.

Short run results indicate that the error correction term is negative and significant showing that there is a high speed of adjustment from short run fluctuations to the long run equilibrium with 19.4% adjustment each year. The short

run estimates indicate that domestic financial reforms have a significant impact on poverty reduction. One percent increase in 'dlndfr' results in 0.01778 percent reduction in poverty, thus reflecting an improved financial environment of the domestic economy. Financial development can directly reduce poverty in the short run by increasing the opportunities of income creation through easy access to funds for investment (Kheir, 2018). However, the social sector and trade reforms are insignificant in the short run. This may reflect the long gestation period of the underlying policies.

Table 5: Short run coefficients

Regressor	Coefficient	t- ratio	Probability
dlnsr	-0.017782	-0.82880	.414
dlndfr	-0.17792	-2.0702	.048
dlntr	-0.010034	-0.52446	0.604
dlnu	-0.0041703	0.062073	0.951
dlninf	0.10451	3.5699	0.001
dlng	-0.033418	-1.7717	0.088
dlngini	0.45361	1.9242	0.065
dC	1.7343	2.7707	0.010
ECM (-1)	-0.19354	-3.1450	0.004
R-Squared = .83290	R-Bar-Squared=.73415	DW-statistic = 2.3032	F-stat.= F(8, 27) 13.7068[.0000]

Source: Calculated by Statistical Data.

Inflation has a strong impact on poverty level in the short run. If inflation increases by one percentage point, poverty level responds immediately and increases by 0.1 percent. It is commonly observed that in the short run domestic inflation is artificially created through hoarding and other malpractices that immediately reduce the real income of the poor and more people become vulnerable to poverty. Unemployment has a negative and insignificant impact on poverty in the short run. However, Gini index and real GDP are statistically significant at 10 % level. One percent increase in Income

inequality in the short run, increase poverty by 0.4536 percent. This is due to the fact that increase in income inequality leads to decreased output and productivity in the economy, which results in higher poverty rates (Ainous, 2018). Several diagnostic tests were applied to check the robustness of the results. These results indicate that the model doesn't encounter any problem of serial correlation and heteroscedasticity. The model is correctly specified, and the errors are normally distributed as shown below.

Table 6: Diagnostic Tests

Test statistic	LM version	F version
Serial Correlation	CHSQ (1) =1.3603(0.243)	F (1,21) =0.82468(0.374)
Functional Form	CHSQ (1) = 0.18512(0.667)	F (1,21) =0.10854(0.745)
Normality	CHSQ (1) =1.9982(0.368)	N. A
Heteroscedasticity	CHSQ (1) =0.97316(0.324)	F (1,34) =0.94463(0.338)

Source: Calculated by Statistical Data

CONCLUSION

⁸ Dollar and Kraay (2002, 2004) found that an increased

growth rate augmented the income of poor.

The paper investigates the impact of different economic reforms on poverty levels in Pakistan over the period of 1975-2019. Three economic indices i.e., social, domestic financial and trade reforms are constructed and their impact on poverty level is analyzed using the ARDL framework.

The results of the empirical investigation declare that in the long run, only trade reforms significantly affect poverty. Openness of the economy to international market increases the inflow of the consumption goods that increases the welfare of the people and reduces poverty. In the short run the domestic financial reforms significantly reduce the level of poverty. Among the control variables unemployment is strongly and positively related to poverty while real output has a significant negative relation with poverty in the long run. Inflation and income inequality (measured by Gini index) is observed to increase poverty in the short run.

The findings of this paper may be regarded as preliminary due to the unavailability of better time series data. Nevertheless, these findings should be observed as an initial step to address such an important topic.

POLICY RECOMMENDATIONS

Long term financial planning is required that could increase the number of financial institutions in the country. SBP should adopt the policies to reduce the lending rate / discount rate that could ease the credit facilities for investment in the country. It would help to reduce poverty along with achieving sustainable economic growth.

Furthermore, the study suggests that Pakistan should go for more of trade liberalization. The continuation of such policies with strong commitment is also recommended in order to achieve sustained economic growth and poverty reduction. Trade barriers should be minimized in order to get the long-term benefits from trade openness.

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