Forman Journal of Economic Studies
Vol. 19(1), 2023 (January–June), pp. 77-97 DOI: 10.32368/FJES.20231904

The Plight of Child Labor in Pakistan: An Economic Perspective

Kalsoom Zulfiqar[1], Abdul Rehman Nawaz[2], Kashmala Shokat[3] and Shafique Ahmad[4]

Abstract

Child labor is a widespread problem in most less-developed countries, with Pakistan being no exception to it. The study tries to shed light on some push factors that contribute to the high prevalence of child labor in Pakistan by utilizing the Autoregressive distributed lag (ARDL) model and time series data from 1984 to 2020. We find that the increase in secondary school enrollments and per capita income of families can significantly reduce the extent of child labor. Similarly, inflation, population growth, and young dependency also aid in child labor. The provision of quality education in schools and vocational training programs for children, particularly in marginalized and impoverished communities may be key to reducing the prevalence of child labor. The government may introduce targeted social safety net programs and economic development initiatives to lift families out of poverty.

Keywords: Education, Inflation, Population Growth, Young Dependency

JEL Classification: J13, J21, J24, J31

1. Introduction

"Children should have pens in their hands, not tools." Iqbal Masih (1983 –1995)

In the year 2020, there were around 160 million involved in child labor. Nearly one in ten children globally fall into this category. Child labor has been a significant problem for a long time, especially in the context of the lack of access to education, poverty, and gender inequality (*UNICEF*, 2023). With a greater emphasis on human welfare and well-being in today's world, the issue has become even more pertinent. There is a need to clearly understand and define the concept of child labor and differentiate it from healthy and productive activities, vital for the mental and physical growth of children. According to the International Labor Organization (2007), child labor involves "*work that deprives children of their childhood, potential, and dignity, and that is harmful to physical and mental*

[1] School of Economics, University of the Punjab, Lahore, Pakistan
[2] Institute of Development and Economic Alternatives, Lahore, Pakistan
[3] School of Economics, University of the Punjab, Lahore, Pakistan
[4] School of Economics, University of the Punjab, Lahore, Pakistan
Corresponding Author's Email: abdulrehman.pu@outlook.com

development." When children under 15 years of age engage in labor activities, it disrupts their schooling and may prevent them from attending school altogether. Furthermore, child workers' health is significantly worse due to poverty, malnutrition, and unhygienic and exploitative working conditions. Child labor is linked with a variety of hazardous chemical exchanges and infectious diseases. Additionally, since poverty and maternal illiteracy are the main drivers of child labor, working children are more likely to suffer from malnutrition and other diseases (Parker, 1997).

Child labor has a long history in Western nations, with young children mostly engaged in farming, home-based congregation operations, factories, mining, and services during the 19th and early 20th centuries. As family income and access to schooling increase, the rate of child labor declines pointedly (Fried, 2008). Preliminary stages of industrialization were dominated by unskilled labor, relocating skilled adult workers. While the later stages of industrialization tend to favor skilled labor. As a result, the demand for child labor typically arises when labor protection or other technical improvements are not implemented. Child labor starts to decline with industrial development to the point that children are no longer useful in an industrial setting (Brown et al., 2003). According to the World Bank (2004), child labor reduced from 25 percent to 10 percent during the last four decades of the twentieth century, this inspiring trend however has recently been overturned. As per UNICEF (2021), the number of child workers globally has risen to 160 million, which is 8.4 million more than the figure recorded four years earlier. It is pertinent to mention here that most of these children are engaged in the most awful forms of child labor, like drug trafficking, camel racing, and prostitution. As a result, it is difficult to estimate the incidence of human and child trafficking accurately (ILO, 2020). Moreover, in recent times COVID-19 has led to an addition of nine million more children to the labor market.

Child labor has significant negative effects on economic growth as it leads to a reduction in labor productivity and hampers the adoption of skill-intensive technology (Edmonds et al., 2020). Child labor not only has immediate economic consequences but also long-term penalties for economic development. Children engaged in labor at an early age are denied basic education and skills, leading to low productivity and low economic growth. The supply of child labor is related to the proportion of adult unemployment in the family (Ambreen, 2017). Similarly, poverty is considered a leading cause of child Labor. A 10 percent increase in the wages of illiterate male workers reduces the likelihood of child labor by 22 percent and 13 percent for boys and girls, respectively. Similarly, the role of societal norms

in the intergenerational existence of child labor could be a determining factor. Parents who once worked as child laborers are more likely to bring their children to work. Furthermore, greater regional income inequality raises the rate of child labor (Jakline, 2005).

Table 1. Child labor (2013-2021)

Countries	Total	Male	Female
Afghanistan	13	14	12
Bangladesh	7	9	5
Bhutan	4	3	4
India	-	-	-
Nepal	22	20	23
Pakistan	11	13	10
Sri Lanka	1	1	1

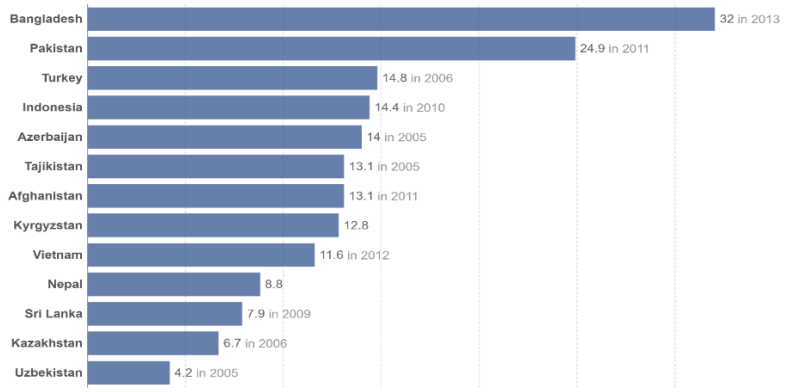
Source: UNICEF

*Percentage of children 5–17 years old involved in child labor at the moment of the survey.

Child labor is a significant problem in South Asian and African regions, with more than 90% of the total child employment concentrated in these two regions. Recent statistics show that Asia has the largest number of child laborers while Africa has a higher percentage of active child labor force. India has the highest number of child laborers in the world, where around forty-five million children are active in the labor market. (Bhalotra, 2001). The percentage of Child labor in South Asia can be seen in Table 1. Nepal has the highest number of both male and female child labor which is 22% and 20% respectively. Despite the economic meltdown, Sri Lanka is still at the lower end in terms of child labor.

According to UNICEF (2021), in Pakistan, around 3.3 million children are indulged in several types of labor having grave penalties for their overall physical health, education attainment, and general childhood incident. Approximately 10% of the total labor force in Pakistan is in the age bracket of 10 to 14 years, and most of them are exposed to dangerous and abusive working conditions. Over 32.5% of Pakistan's child laborers are between the ages of 12 and 14, and most of them have never attended school. The prevalence of extreme poverty, high adult unemployment rates, expensive education, and lack of access to quality education are the main reasons for this high incidence of child labor. Similarly, around 72.5% of child laborers in Pakistan work for longer hours and are often deprived of holidays, training, and access to basic sanitation facilities. These unwarranted working conditions often lead to musculoskeletal pain, growth stunting, and dermatological diseases (Abdul et al., 2021).

Figure 1: Average Weekly Working Hours of Children



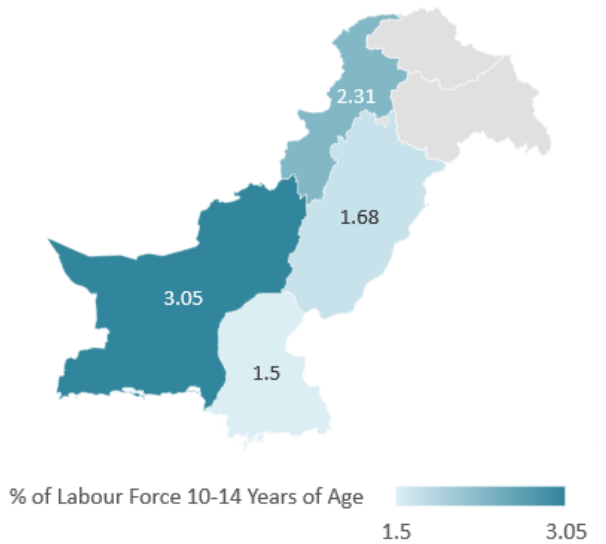
Source: International Labor Organization, UNICEF, and World Bank
*Average weekly working hours for children ages 7-14 who are involved in economic activity for at least one hour in the reference week of the corresponding survey (irrespective of school attendance).

Various cultural and social factors and a lack of political will to provide for children contribute to the persistence of child labor in Pakistan (ILO, 2020). International Labor Organization (2020) stated that around 22% of children in Pakistan aged between 5 and 14 are working as child laborers. One key factor contributing to child labor in Pakistan is poverty. According to the World Bank (2022), poverty is expected to reach 37.2 percent which was around 39.8 percent in 2018. If population growth is considered, we have almost three million more people in poverty as compared to 2018. Many families in Pakistan live in poverty and consider child labor as an additional source of income to meet their basic needs. Figure 2 indicates the distribution of labor age (10-14 years) in various provinces of Pakistan. Baluchistan has the highest number of child laborers, which is 3.05% of the total labor force. Sindh has the lowest child labor force. Child labor employment varies from sector to sector in Pakistan. The agriculture sector has the highest number of child laborers which is around 0.69% of the total labor force in Pakistan. Similarly, the non-agriculture sector, formal sector, and informal sector have 0.55%, 0.05%, and 0.5% respectively (Labor Force Survey, 2021).

The International Labor Organization (2011) shows that a vast majority of children in Pakistan are engaged in physically hazardous work, including domestic labor, crop agriculture, informal services, street trades, mining and extraction, brick kilns, and rag picking. As child laborers, these children are often unable to attend school or enjoy their childhood due to their physical and mental exhaustion. Many poor families compel their children to work for rich landlords to pay off their debts (Arif, 2004; Labor Watch Pakistan, 2011; Osment, 2014; Bureau of International

Labor Affairs, 2015). According to Imran et al. (2016), access to education and ownership of assets in the family can significantly reduce female child labor in Pakistan while large family sizes can increase it. Additionally, an increase in gross per capita income and primary school enrollment can also decrease child labor in Pakistan. Regardless of the legal ban on child labor in the country, poor surveillance and institutional support make it a common occurrence. Therefore, improving the quality of institutions could potentially help reduce child labor (Azhar et al., 2020).

Figure 2. Distribution of Child Labor Force across Provinces



Source: Labor Force Survey 2020-2021

Although determinants of child labor vary across various regions of Pakistan gender bias, parent attitudes, poverty, and ignorance are the common push factors in child labor (Ali et al., 2010). In urban areas of Pakistan, the situation is far better as compared to slums, young girls are in a relatively better position, as they are not considered responsible for earning for the family due to socio-religious and economic betterment (Ali and Khan, 2004). Maybe because possession of assets, family business, and male dominant society pressurize the male children to work. Karim (1995) finds that low family income, illiteracy of parents, and high dependency ratio significantly influence the decision of parents regarding their child labor and push children to work. While analyzing the causes of female child labor in Multan, Ali and Hamid (2004) conclude that poverty and large family size propel child girls to earn and contribute to family income. Malik et al. (2012) finds that family income, poverty, and parent's education level, are the key factors that

define the choice between school and work for young children in Sukkur and Multan in Pakistan. They further suggest that poverty reduction, financial inclusion, and incentivizing parents to send their children to school can effectively reduce the extent of child labor.

Khalid and Shahnaz (2004) find that high consumption expenditures, household income, capabilities, and choices of parents' force children to take economic responsibility at an early age instead of going to school or getting some training or skill. Bonded labor at brick kilns is also a common phenomenon in certain districts of Pakistan. Poor families must work at brick kilns in lieu of their debt repayment due to a lack of income. It is a cycle of discrimination and exploitation as it involves interest payments as well. Arfan et al. (2016) investigated the socioeconomic causes of child labor in the Jhang district after interviewing the children that work at brick kilns. They find that child labor at brick kilns had financial stress and an intention to enhance family income. Similarly, Mumtaz et al. (2012) discover that poverty, lack of education, and unemployment opportunities compel young boys to work in automobile workshops in Sargodha. Most of these boys never went to school, have illiterate parents, and earn exceptionally low monthly wages ranging between Rs. 500- 700 (2.5 USD).

The prevalence of illiteracy among mothers, high dependency ratios, and insufficient family incomes push children to work at an early age and hence damage their mental and physical growth. It also reveals that the parents of working children are mostly poor and without proper jobs and are desperately looking for financial support (Awan et al., 2011). Poverty combined with low household income, large family size, and parents' education is the core problem for the prevalence of child labor in Southern Punjab (Haider and Qureshi, 2015). Kashif and Hussain (2013) findings are consistent with other researchers. They consider job insecurity, inflation, poverty, and lack of effective policy as the push factors behind the occurrence of child labor. Hussain et al. (2017) mention that child labor incidence can be explained by household income, the employment situation of parents, the level of education of the household head, and overall macroeconomic conditions. Tanveer et al. (2014) indicate that around 56% of the working children in the Lahore district never attended school and are underpaid, and they work to provide financial assistance to their families. Fasih (2007) believes that male children are comparatively affected more as girls are usually engaged in informal household chores and the act does not apply in informal settings.

The literature review shows that most of the existing research is focused on limited surveys, covering specific districts, towns, and small areas in Pakistan.

Most of the studies have considered poverty, large family size, and lack of education, financial status as the main causes of child labor in Pakistan. Keeping in view the significance of the issue from the perspective of human development and well-being current research intends to provide an analysis of the economic contributing factor of child labor in Pakistan from a macroeconomic perspective. This study's importance lies in providing needed information on the economic dimensions of child labor by using the latest data available to make informed policy choices and efforts to reduce child labor in Pakistan. The study identifies the economic drivers of child labor on a macro level and provides valuable insights for policymakers, NGOs, and other stakeholders working to eradicate child labor in Pakistan.

2. Theoretical Framework and the Empirical Model

In neo-classical analysis, Human capital theory explains the linkages among labor markets, economic growth, and education. Human beings are productive resources, and this productivity can be enhanced through education. Education is like an investment having a cost as well as a return. Hence a more educated workforce will not only be more productive but will also lead to higher incomes, poverty alleviation, and a reduction in child labor. It will not be possible for a country to maximize its productivity and reap the full benefits of its human resources if children start working from an early age without any education and training. Similarly, Basu (1999) describes child labor as having bad equilibrium as it replaces more productive better-paid adults with underpaid child workers leading to overall low productivity.

In the existing literature, child labor is mostly described as an outcome of poverty, unemployment, and low education (Muntaner et al., 2010; Sengenberger, 2002). Households that have a higher education have better earning potential and incomes hence enabling them to invest in their children's education and aiding them in enhancing their productivity through education and skill building (Engle and Black, 2008). Education, work, and social life are interconnected hence education alone may not be sufficient to deal with the problem (Musterd and Andersson, 2006; Ray and Lancaster, 2004).

Poor segments of society are more vulnerable to the effects of macroeconomic instability, high unemployment levels, and inflation. Hence any negative economic shock pushes more people down the poverty line and causes an increase in child labor (Lim, 2002). International trade, particularly exports, has implications for both supply and demand for child labor. Edmonds (2009)

concludes that in developing countries international trade reduces child labor through the channels of relative prices and living standards. Similarly, trade sanctions lower the price of exportable goods produced by unskilled labor, and as a result, the income of the poor fall which raises the child labor (Jafarey and Lahiri, 2002). A rise in the overall literacy rate and per capita income also leads to a reduction in the prevalence of child labor (Rafia, 2009; Toor, 2005)

The study intends to investigate the causes of child labor in Pakistan, and we utilize the model described in Equation 1. The variables used in the model are included based on previous literature and theoretical foundations as discussed above. Here dependent variable is child labor. Equation 1 describes child labor as the function of education, GDP per capita, inflation, net exports, population growth, and young dependency.

$$CL = \beta_0 + \beta_1(EDU) + \beta_2(GPC) + \beta_3(INF) + \beta_4(NE) + \beta_5(PG) + \beta_6(YD) + \varepsilon_t \quad (1)$$

3. Data Description, and Estimation Technique

The study utilizes the latest available time-series data for the years 1984 to 2020. Table 2 provides a brief description of the variables used in the study and data sources.

Table 2. Brief Description of the Variables

Variables	Definition	Sources
Child Labor (%) (CL)	Children between the ages of 10 and 14 who are engaged in economic activities can be labeled as child laborers.	Federal Bureau of Statistics
Education as % of secondary enrollment (EDU)	Education is measured by the percentage of secondary school enrollment, which indicates the proportion of students attending secondary school.	World Development Indicators
Gross per capita income in LCU (local currency unit) (GPC)	Gross per capita income, measured in local currency, is the average income earned per person in each area.	Economic Survey of Pakistan
Annual Inflation rate (%) (INF)	Inflation refers to the rate at which prices are increasing in an economy and is measured as an annual percentage.	World Development Indicators
Net Exports of goods and services in current US $ (NE)	Net exports are the total value of all goods and services that a country exports less than the value that it imports, measured in the current US. Net exports are taken as an indicator of the trade balance of a country or region.	World Development Indicators
Population Growth rate (%) (PG)	Population growth is measured by the rate at which the population of a country expands.	World Development Indicators
Young dependency (%) (YD)	Young dependency is the ratio of the number of young people under the age of fifteen who are economically inactive to the number of active labor force.	World Development Indicators

The economic determinants of child labor are investigated and analyzed by employing the ARDL model (Pesaran and Shin, 1995, 1999; Pesaran et al., 1996; Pesaran, 1997). The ARDL technique is used to estimate dependable results for

both long-run and short-run relationships. The general form of the ARDL model with n lags for variables Y and m lags for variable X is as follows.

$$Y_t = \delta_0 + \sum_{i=1}^{n} \delta_i Y_{t-i} + \sum_{i=0}^{m} \beta_i X_{t-i} + U_t \quad (2)$$

Whereas the general form of the ARDL error correction model is as follows:

$$Y_t = \delta_0 + \sum_{i=1}^{n} \beta_j Y_{t-i} + \sum_{i=0}^{m} \beta_j X_{t-j} + \psi ECM_{t-1+} \varepsilon_t \quad (3)$$

In the above equation, ψ represents the speed of adjustment parameter and for significant ECM model ψ must be negative. Error correction term explains how much deviation from the long-run is corrected each period and the time it will take to return to the long-run equilibrium position.

Following is a portrayal of the estimated model used to examine the economic determinants of child labor in Pakistan. The ARDL approach is used to determine the long-run association among the variables. The long-run and short-run ARDL models are presented in Equations (4) and (5) respectively,

$$\Delta CL_t = \gamma_o + \sum_{i=1}^{k} \gamma_1 (CL)_{t-i} + \sum_{i=1}^{a} \gamma_2 (EDU)_{t-i} + \sum_{i=1}^{b} \gamma_3 (GPC)_{t-i} + \sum_{i=1}^{c} \gamma_4 (INF)_{t-i} + \sum_{i=1}^{d} \gamma_5 (NE)_{t-i} + \sum_{i=1}^{e} \gamma_6 (PG)_{t-i} + \sum_{i=1}^{f} \gamma_7 (YD)_{t-i} + \varepsilon_t \quad (4)$$

$$\Delta CL_t = \delta_0 + \sum_{i=1}^{k} \delta_1 (CL)_{t-i} + \sum_{i=1}^{a} \delta_2 (EDU)_{t-i} + \sum_{i=1}^{b} \delta_3 (GPC)_{t-i} + \sum_{i=1}^{c} \delta_4 (INF)_{t-i} + \sum_{i=1}^{d} \delta_5 (NE)_{t-i} + \sum_{i=1}^{e} \delta_6 (PG)_{t-i} + \sum_{i=1}^{f} \delta_7 (YD)_{t-i} + \delta_8 ECT + \varepsilon_t \quad (5)$$

Where γ *and* δ are the long run and short run coefficients, respectively. ECT represents the error correction term showing the speed of adjustment. In addition, if the value of the error correction term is negative, significant, and less than one it reflects that the model is stable. Here Δ is the first difference and $\lambda = (1 - \sum_{i=1}^{k} \gamma_1 (CL)_{t-i})$ is the mathematical representation of lambda.

3. Empirical Results

As the study is based on time series data as a first step, we investigated the stationarity of each variable by using Augmented Dicky Fuller (ADF) test. If all the variables were stationary at the level, we would have applied OLS. However, all variables have a mixed order of integration but none of them is integrated of order 2 so Auto Regressive Distributed Lag Model (ARDL) is applied.

Table 3. Augmented Dicky Fuller (ADF) Test

Variables	p-values	Order of integration
Child Labor	0.0000	I (1)
Education	0.003	I (1)
Gross per capita Income	0.0004	I (1)
Inflation	0.0108	I (0)
Net Exports	0.0003	I (1)
Population growth	0.0002	I (0)
Young Dependency	0.012	I (1)

Source: Authors' Calculations

Table 3 shows that all the variables are stationary at the first difference except inflation and population growth.

Table 4. Correlation Matrix of the Variables

Variables	CL	EDU	GPC	INF	NE	PG	YD
Child Labor	1.000000						
Education	0.127863	1.000000					
	0.805114	----------					
	0.4256	----------					
Income	0.267748	0.938625	1.000000				
	1.735448	16.99339	----------				
	0.0906	0.0000	----------				
Inflation	0.303513	0.050876	-0.111665	1.000000			
	1.989275	0.318132	-0.701737	----------			
	0.0537	0.7521	0.4870	----------			
Net Exports	-0.324268	-0.919564	-0.933612	0.001286	1.000000		
	-2.140730	-14.61467	-16.27306	0.008030	----------		
	0.0386	0.0000	0.0000	0.9936	----------		
Population Growth	-0.216756	-0.881529	-0.839952	-0.037446	0.783262	1.000000	
	-1.386606	-11.66023	-9.666264	-0.234017	7.868002	----------	
	0.1734	0.0000	0.0000	0.8162	0.0000	----------	
Young Dependency	-0.431427	-0.901033	-0.969153	0.018850	0.926285	0.872915	1.0000
	-2.986497	-12.97278	-24.55735	0.117741	15.35102	11.17373	---------
	0.0049	0.0000	0.0000	0.9069	0.0000	0.0000	---------

Source: Authors' Calculations

Table 4 shows the correlation among the variables. The results reveal that education, gross domestic product (GDP) per capita income, and inflation are linked with child labour, while net exports, population growth, and young dependency are negatively linked with child labour. These findings imply that higher levels of education, GDP per capita income, and inflation relate to an increase in child labour, whereas higher levels of net exports, population growth, and young dependency are linked with a decrease in child labour.

To decide the appropriate lag length for the model, the minimum value of the Akaike Information Criterion (AIC) was selected, with a maximum of three lags. The minimum value of the AIC length criterion was found to be 64.3658, which was chosen as the lag length criterion for the model. Additional details

regarding the selected lag length criterion are provided in (Table A in the appendix). We have applied the bound testing approach to check the existence of a long-run relationship between dependent and independent variables. F-statistics shows a value of 3.6006 which is greater than the upper bound value at the 5% level of significance leading to the acceptance of the null hypothesis that there exists a long-run relationship (Table B in the appendix).

4. Results and Discussion

Table 5 shows the result of the long-run ARDL model. We find that education and child labour interact negatively at a 5% level. A 1% increase in secondary school enrolment will lead to a reduction of 0.16% in child labour. Our findings are consistent with Orrnert (2018) who examines the association between child labour and education. Education empowers children in many ways and helps them in attaining the skills necessary to be more productive and find better employment opportunities at a later stage. If children have access to education, they are better able to break the vicious cycle of poverty and have better prospects for their future. Education also helps children to understand their rights and to understand that they should not have to work at such an immature age. When children are in school, they are also less likely to be vulnerable to exploitation and abuse, as they are in a safer and more structured environment.

Table 5. Results of Long-run ARDL Model Using Child Labor as a Dependent Variable

Variables	Coefficient	Std. Error	t-Statistic	Prob.
Education	-0.1685	0.0542	-3.0394	0.0103
Per Capita Income	-0.1000	0.0000	-6.3034	0.0000
Inflation	0.0390	0.0179	2.1799	0.0499
Net Exports	0.0000	0.0000	0.9206	0.3754
Population Growth	3.6405	1.5384	2.3664	0.0356
Young Dependency	0.4510	0.0395	11.4026	0.0000
Constant	94.9414	6.9823	13.5973	0.0000

Source: Authors' Calculations

Similarly, GDP per capita income and child labour have a significant inverse relationship. If GDP per capita income increases by 1% child labour will decrease by 0.10%. Countries that have higher per capita income, have lower child labour and vice versa. In this regard, the findings of the present study are aligned with many previous studies (Lim, 2000; Cameron, 2002; Behrman et al., 1999; Skoufias and Parker 2001). When families have a higher income, they are more able to meet their basic needs and provide for their children without relying on their children's labour. In situations where families are living in poverty, they may see child labour as a necessary means of survival. However, when families can increase

their income through better-paying jobs or other means, they can afford to provide for the education and other needs of their children.

The results show the direct and significant association between inflation and child labour, a rise of 1% in inflation leads to a 0.039% surge in child labour. Consistent Price hikes or inflation decreases the real income and purchasing power of households and hence puts pressure on parents to send their children to work to make ends meet. If it persists and is not addressed by adequate policies, it becomes increasingly hard for parents to send their children to school. Children who start working in their initial years mostly grow as unskilled and less productive workers in their adulthood later years having low incomes for a lifetime (Gharshin and Kasi, 2019). Families living closer to the poverty line are more vulnerable to such economic shocks as usually, they have low incomes generated from a sole source, they have no assets and social safety nets are also unavailable. Similarly, high levels of inflation not only reduce real wages but also increases the direct and indirect cost of education making it unaffordable for poor parents and leaving them with no other choice but to send their children to work.

The high population growth rate is another important source of the increase in child labour. Working children mostly belong to poor households with large family sizes. The average household size of working children in Pakistan was estimated to be eight by ILO in 1996. An increase of 1% in population growth leads to a rise of 3.6% in Child labour. The current study is based on time series data and explores the long-run relationship between population growth and child labour. This higher coefficient can be further investigated by comparing various cohorts of the population and considering the intertemporal effects. However, in our analysis, it can be explained in terms of the high prevalence of deprivation, elevated fertility levels, and lower school enrolments as found by previous studies (Hazan and Berdugo, 2002). If the population of a country grows unchecked, it can reverse the progress made on the economic front and exert pressure on limited resources. It leads to unemployment, poverty, low per capita income, and excessive supply in the labour market. In an overpopulated country, we have more people to feed, more children to educate and we need more health facilities but usually economies cannot provide for the population which is growing at a rate that is much faster than the rate at which resources are growing. Another dimension of the problem is the fact that poor parents mostly consider their children as helping hands contributing towards family income and assisting their parents in running the household and do not consider education and health as basic rights of their children. In an overcrowded community, it will be exceedingly difficult to provide children with a

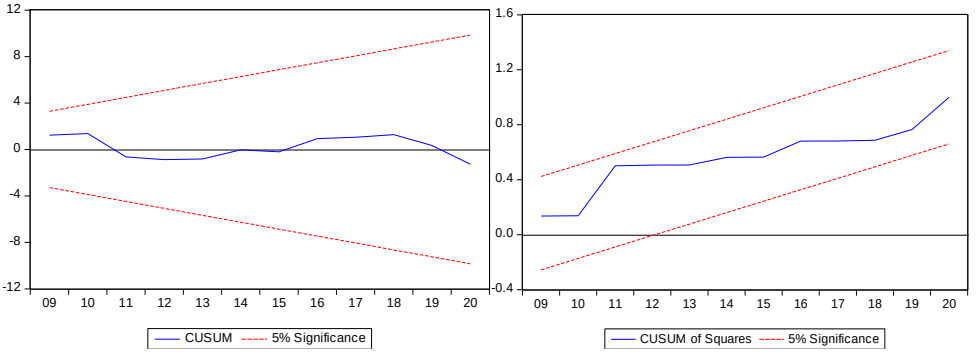
safe and healthy environment where they can nourish and grow. There is a higher likelihood that children in such situations would be unsafe and indulged in forced labour.

The results of the empirical analysis reveal a substantial direct relationship between young dependency and child labour as a 1% surge in young dependency upsurges child labour by 0.45% Young dependency escalates the possibility of child labour if the parents are financially incapable of providing for their children and send them to work so that they can contribute to family income. Sometimes young children are presumed to take part in income-generating activities due to social pressure and cultural norms (Azhar et al., 2020; Bilsborrow, 1977). Their empirical results suggest the absence of any significant association between child labour and exports. It might be attributed to the lower share of child labour in export-related industries however this phenomenon needs further investigation. These findings are however in line with (Zhao et al., 2020). Over time, the impact of trade liberalization on the prevalence of child labour weakens, potentially because it encourages exporters to adopt advanced technology, resulting in reduced demand for unskilled labour.[5]

Table E in the appendix shows the Short-run dynamics of the model. A significant negative error correction term (ECT) further verifies the existence of a stable long-run relationship among variables of our interest. The value of R^2 is 0.9820 showing that the independent variables explain almost 98% of the total variation in the dependent variable and model is a good fit (Table E in appendix). The model is also tested for serial correlation and heteroscedasticity. The test results confirm the absence of heteroscedasticity and serial correlation. (Tables C and D in the appendix). To test the stability of the parameters and to detect the changes in the conditional model parameters CUSUM and CUSUM of squares test is used. The left-hand graph in Figure 2 shows the stability of the parameters at a 5% level of significance and the right-hand graph shows that the blue line is within the boundaries and significant at the level of 5% which shows that the parameters are stable.

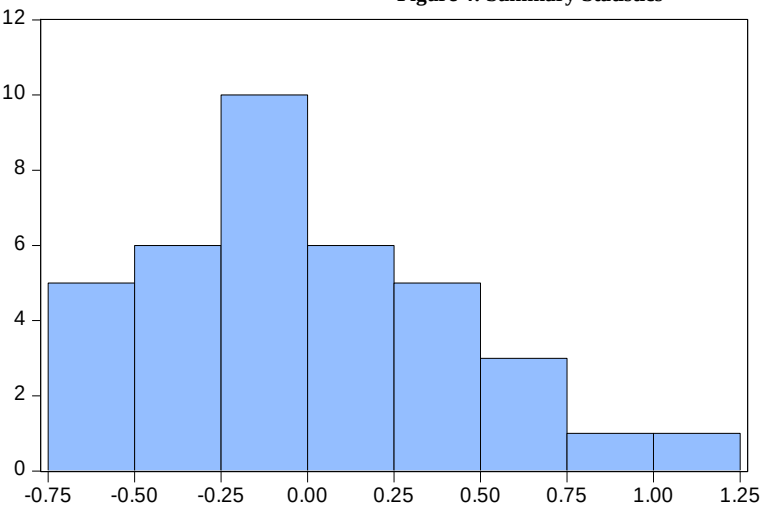
[5] Table A, B, C, D and E are given in the appendix.

Figure 3: Cusum and Cusum Square Tests



Source: Authors' Computation

Figure 4: Summary Statistics



Series: Residuals	
Sample 1984 2020	
Observations 37	
Mean	-1.42e-14
Median	-0.062276
Maximum	1.241398
Minimum	-0.706385
Std. Dev.	0.456480
Skewness	0.516386
Kurtosis	2.982027
Jarque-Bera	1.644868
Probability	0.439361

Source: Authors' Computation

Figure 4 shows that the value of kurtosis is less than 3 shows that the residuals are normal. In addition, the p-value is greater the 5% which is 0.4393. The value of the Jarque-bara is 1.644868, which is greater than 5% depicting the normal distribution of residuals.

5. Conclusion and Policy Recommendations

We find that secondary school enrolment (education) and an increase in per capita income can significantly decrease child labour in Pakistan. However high

population growth rates, inflationary pressure, and greater youth dependency can coerce parents to send their children into the informal exploitative labour market. Families living in poverty prefer child labour over education due to a lack of resources and financial support. Inflation aids child labour by putting a strain on families' real income, hence forcing them to send their children to work at an early age. Rapid population growth exerts supply-side pressure on the labour market resulting in high unemployment and underemployment which drives people to find supplementary sources of income by indulging in child labor. Large numbers of dependents in a family are also a leading cause of child labour in countries like Pakistan which not only have a high population growth rate but simultaneously women have a ridiculously small share in formal employment.

Education plays a crucial role in reducing child labour in Pakistan. By increasing access to schooling and improving its quality, children are more likely to stay in school and receive a formal education. This provides them with the necessary skills and knowledge to pursue decent work opportunities in the future. Government should increase its budget allocation for school education programs with a special focus on skill-based education and training. The public in general needs to be educated to better understand the consequences of child labor and to appreciate the importance of education and having a nurturing childhood. The provision of financial support to poor families can also aid in reducing child labour in Pakistan. By improving the economic well-being of families, they will be less reliant on child labour as a source of income. Pakistan needs to adopt stringent population control and planning measures and educate the masses in this regard. It will not only help to reduce the pressure on limited resources and reduce child labour but will also make the development process more sustainable. There is a need to adopt suitable strategies for enhancing the role of females in the job market through skill and training programs. Another important policy suggestion is to ensure macroeconomic stability which not only ensures consistent growth but also maintains price stability.

References

Ali, K. & Khan, R. E. A. (2004). Simultaneous Decision Making of Child Schooling and Child Labor in Pakistani Urban Households: The Lahore Journal of Economics, 9(1), 127-148

Ali, K. Major Determinants of Female Child Labor in Urban Multan (Punjab-Pakistan) Karamat Ali and Abdul Hamid. *Lahore Journal of Economics*, *4*(1), 62.

Ambreen, (2017). The determinants of child labor: Evidence from rural Pakistan. Journal of Development Studies, 53(1), 1-18.

Arfan L, Shoukat A, Abdullah, A. & Jafer, R. (2-16) Socio-economic and political determinants of child labor at brick kilns: A case study of district Jhang, South Asian Studies A Research Journal of South Asian Studies Vol. 31, No. 1, January – June 2016, pp.161 – 174

Arif, G.M. (2004). Bonded Labour in Agriculture: A Rapid Assessment in Punjab and Northwest Frontier Province, Pakistan. Geneva: International Labor office, http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@declaration/documents/publication/wcms_082027.pdf

Azhar, T., Khan, M. S., Zareen, A., Ali, S., & Ali, S. (2020). Determinants of child labor in Pakistan: A multivariate analysis. Journal of Humanities and Social Sciences, 25(1), 51-58.

Basu, K. (1999). Child labor: cause, consequence, and cure, with remarks on international labor standards. Journal of Economic literature, 37(3), 1083-1119.

Bhalotra S. Globalisation, social protection and child labour, Background research paper for the JPMI 2013 Vol. 27 No. 03: 285 - 289 289 ILO Director-General's Global Report on Child Labour. Geneva: ILO; 2001.

Bilsborrow, R. E. (1977). The determinants of rural youth migration in low-income countries. International Migration Review, 11(3), 222-236.

Brown, D. K., Deardorff, A. V., & Stern, R. M. (2003). Child Labor: theory, evidence, and policy. *International Labor standards: history, theory, and policy options*, 195-247.

Bureau of International Labour Affairs. (2015). Child Labor and Forced Labor Reports, Pakistan. USA: United States Department of Labour, https://www.dol.gov/agencies/ilab/resources/r eports/child-labor/pakistan

Cameron, (2002). "Child labor and the division of labor." Journal of Development Economics, 67(2), 369-396. Behrman, J. R., & Post, D. (1999).

Child Labor Statistics - UNICEF DATA. (2023, June 7). Available at https://data.unicef.org/topic/child-protection/child-labour/?_gl=1*n4tuw1*_ga*NjEyNDY3OTEuMTY4NjU2MjM1OA..*_ga_9T3VXTE4D3*MTY4NjYzNTY5Ny4zLjEuMTY4NjYzNjAyOS4wLjAuMA.

Edmonds E. V. (2009). Trade, Child Labour, and Schooling in Poor Countries. Dartmouth College, IZA. Downloaded from: http://www.dartmouth.edu/~eedmonds/wbtrade.pdf.

Edmonds, E. V. (2015). Economic Growth and Child Labor in Low Income Economies. *A Systhesis Paper Prepared for IZA/DFID. Bonn: Institute for the Study of Labor*.

Edmonds, E. V., Pavcnik, N., & Topalova, P. (2020). The long-run impact of child labor: Evidence from the end of the UK ban. American Economic Review, 110(3), 871-903.

Engle, P.L. & Black, M.M. (2008). The effect of poverty on child development and educational outcomes. Annals of the New York Academy of Sciences, 1136(1), 243–256. doi: 10.1196/annals.1425.023

Engle, P.L. & Black, M.M. (2008). The effect of poverty on child development and educational outcomes. Annals of the New York Academy of Sciences, 1136(1), 243–256. doi: 10.1196/annals.1425.023

Federal Bureau of Statistics (2020-21). Retrieved from https://www.pbs.gov.pk/sites/default/files/labor_force/publications/lfs2020_21/tables/Table_7.pdf

Findings on the Worst Forms of Child Labor (2019). BUREAU OF INTERNATIONAL LABOR AFFAIRS. Retrieved from https://www.dol.gov/agencies/ilab/resources/reports/child-labor/findings

Gharshin, S., & Kasi, M. T. (2019). The impact of economic shocks on child labor in Pakistan. Journal of Development Studies, 55(6), 1015-1033.

Hazan, M., & Berdugo, B. (2002). Child Labor, fertility, and economic growth. *The Economic Journal*, *112*(482), 810-828.

Hilowitz, J. (2004). Child Labour: A textbook for university students. International Labour Office.

Himes, J. R., de Arboleda, V. C., & Mendez, E. G. (1994). Child labour and basic education in Latin America and the Caribbean (No. inness94/4).

Hopkins, S. (2014, 3 December). Paying their debts back brick by brick: The Pakistani modern-day slaves trapped in a lifetime of hardship. Daily Mail. Available at https://www.dailymail.co.uk/news/article-2858775/Paying-debts-brick-brick-Pakistani-modern-day-slaves-trapped-lifetime-hardship.html

Hussain, M., & Saud, A. (2017). Socio-economic determinants of working children: Evidence from capital territory of islama-bad, Pakistan. Pakistan Administrative Review, 1(2), 145–158.

Imran, A., Farooq, F., & Chaudhry, I. S. (2016). The Determinants of Female Child Labor in Jafarey, S. and Lahiri S. (2002).

International Labor Organization (ILO). (2020). Child labor in Pakistan. Retrieved from https://www.ilo.org/pakistan/areas/child-labor/lang--en/index.htm

International Labour Organizations (2011). UNICEF and ILO call for the end to hazardous and exploitative child labour on World Day Against Child Labour; Press Release 11 June 2011. Islamabad: International Labour Organizations, Retrieved from, http://www.ilo.org/islamabad/info/public/pr/ WCMS_1578 08/lang--en/index.htm

Jafarey, S. and Lahiri S. (2002). Will Trade Sanctions Reduce Child Labour? The Role of Credit Markets. Journal of Development Economics, Vol. 68, No. 1, pp.137-56.

Jakline, (2005). Child labor, human capital, and poverty: Evidence from rural India. Journal of Development Economics, 77(1), 80-96.

Karim, F. (1995). Contemporary Forms of Slavery in Pakistan. Human Rights Watch, Asia, Lahore.

Khalid, U. & Shahnaz, L. (2004). Socio Economic Conditions of Child Labourers in Pakistan: Evidence from the Labour Force Survey. The Lahore Journal of Economics, 9(1), 85-105

Khalid, U., & Shahnaz, L. (2004). Socio economic conditions of child labourers in Pakistan: Evidence from the Labour Force Survey. Lahore Journal of Economics, 9(1), 85-105.

Khan, R. E. A., Khan, T., & Sattar, R. (2010). A comparative analysis of rural and urban child labor in Pakistan. European Journal of Economics, Finance and Administrative Sciences, (27).

Labour Watch Pakistan (2011). Bonded and forced labour in Pakistan, retrieved 20 November 2017 from, http://labourwatchpakistan.com/bonded-andforced-labour-in-pakistan/

Lim, (2000). "Economic growth and child labor." Journal of Development Economics, 63(2), 409-427.

Lim. J. A. (2002). Regional Review: Child Labour. Strengthening the Role of Labour Standards in Selected Developing Member Countries. ADB/ILO RETA Project No. 5887

Malik, A. K., Bhutto, N. A., Shaikh, D., Akhter, E., & Butt, F. (2012). Another Real Fact about Child Labor: A Comparative Study between Districts of Two Provinces of Pakistan. In Proceedings of 2nd International Conference on Business Management Lahore.

Mumtaz, A., Sadia, R., & Amir, A., (2012) Tiny Hands-on Hefty Work: Determinants of Child Labor on Automobile Workshops in Sargodha. (Pakistan) International Journal of Humanities and Social Science Vol. 2 No. 3; February 2012

Muntaner, C., Solar, O., Vanroelen, C., Martínez, J.M., Vergara, M., San-tana, V., Castedo, A., Kim, I.H., Benach, J. & Network, EM-CONET. (2010). Unemployment, informal work, precarious em-ployment, child labor, slavery, and health inequalities: Pathways and mechanisms. International Journal of Health Services, 40(2), 281–295. doi: https://doi.org/10.2190/HS.40.2.h

Musterd, S. & Andersson, R. (2006). Employment, social mobility, and neighbourhood effects: The case of Sweden. Interna-tional Journal of

Urban and Regional Research, 30(1), 120–140. doi: 10.1111/j.1468-2427.2006. 00640.x

Orrnert, (2018). Child labor, education, and human capital accumulation: A cross-country analysis. World Development, 106, 48-60.

Osment, L. (2014). Child labor: the effect on child, causes and remedies to the revolving menace, Sweden: University of Lund

Parker DL. Child labor. The impact of economic exploitation on the health and welfare of children. Minn Med 1997; 80:10–2.

Rafia K. (2009). Child Labour at District Level: A Case Study of Rawalpindi. Munich Personal RePEc Archive, MPRA Paper No. 19161, Online at http://mpra.ub.unimuenchen.de/19161

Ray, R., & Lancaster, G. (2004). The impact of children's work on schooling: Multicountry evidence based on SIMPOC data(Scholarly Project).InThe impact of children's work on schooling: Multicountry evidence based on SIMPOC data Retrieved from http://repec.org/esAUSM04/up.15362.1076562558.pdf.

Toor I. A. (2005). Child Labour 's Link with Literacy and Poverty in Pakistan. The Lahore Journal of Economics, Vol.10, No. 1, pp-15-32

UNICEF report on Child Labor (2021) Available at www.unicef.org

Will Trade Sanctions Reduce Child Labour? The Role of Credit Markets. Journal of Development Economics, Vol. 68, No. 1, pp.137- 56. *Studies*, *2*(1), 1-10.

Zhao, L., Wang, F., & Zhao, Z. (2021). Trade liberalization and child Labor. *China Economic Review*, *65*, 101575.

Appendix

Table A. Akaike Info criterion for LAG

LAG	LOG L	LR	FPE	AIC	SC	HQ
0	-1627.630	NA	5.45e+28	86.03318	86.33484	86.14051
1	-1283.390	543.5380	1.02e+22	70.49419	72.90748	71.35282
2	-1162.011	146.9323	2.96e+20	66.68478	71.20969	68.29470
3	-1068.950	78.36654*	6.68e+19*	64.36581*	71.00235*	66.72704*

Table B. Bound Test

Significance	*I* (0) bounds	*I* (1) Bounds
10%	2.12	3.23
5%	2.45	3.51
2.5%	2.75	3.99
1%	3.15	4.43
Test Statistic	Value	K
F-statistic	3.600605	6

Table C. Breusch-Godfrey LM Test:

F-statistic	0.010369	Prob. F (2,31)	0.9897
Obs*R-squared	0.026741	Prob. Chi-Square (2)	0.9867

Table D. Heteroscedasticity Test

F-statistic	0.843248	Prob. F (24,12)	0.6536
Obs*R-squared	23.22741	Prob. Chi-Square (24)	0.5064
Scaled explained SS	5.091158	Prob. Chi-Square (24)	1.0000

Table E. Results of Short run ARDL

Variables	Coefficient	Std. Error	t-Statistic	Prob.
D (CL (-1))	1.130181	0.302114	3.740915	0.0028
D (CL (-2))	0.478283	0.203681	2.348194	0.0368
D (CL (-3))	-0.178641	0.108937	-1.639846	0.1270
D(EDU)	0.085651	0.126881	0.675049	0.5124
D (EDU (-1))	0.008911	0.120353	0.074038	0.9422
D (EDU (-2))	0.264898	0.098886	2.678815	0.0201
D(GPC)	-0.000158	0.000037	-4.250384	0.0011
D(INF)	0.015742	0.031403	0.501292	0.6252
D (INF (-1))	-0.085186	0.046546	-1.830152	0.0922
D (INF (-2))	-0.068418	0.036773	-1.860541	0.0875
D (INF (-3))	-0.026429	0.029520	-0.895284	0.3882
D(NE)	0.000000	0.000000	0.921371	0.3750
D(PG)	1.472955	6.816354	0.216091	0.8325
D (PG (-1))	0.589245	1.968047	0.299406	0.7698
D (PG (-2))	-0.498610	0.756561	-0.659048	0.1230
D (PG (-3))	1.577098	0.557802	2.827049	0.0153
D(YD)	0.606082	0.824427	0.735156	0.4764
D (YD (-1))	0.435409	0.906917	0.480098	0.6398
D (YD (-2))	1.337830	0.538808	2.482944	0.0288
CointEq (-1)	-0.661747	0.098526	-6.716456	0.0000
Coenocyte = CL – (-0.1685*EDU -0.0001*GPC + 0.0391*INF + 0.0000*NE -3.6406*PG -0.4511*YD + 94.9414)				
R-squared	0.982045	F-statistic	27.34731	
Adjusted R sq.	0.946135	Prob(F-statistic)	0.000000	