Determining the Role of Major Macroeconomic Indicators in Widening Income Gap in Pakistan

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Abstract

The impact of rising inequality on economic growth and stability is widely recognized, as it can lead to suboptimal use of human resources, political and economic instability, and an increased risk of disaster. Income inequality is also associated with lower levels of social cohesion. Therefore, it is crucial to identify the causes of economic inequality in a country. To this end, a study was conducted on Pakistan's economy to identify the factors behind income inequality. The study used financial development, FDI, GDP growth, remittances, inflation, poverty, and unemployment as independent variables and employed a deductive approach with quantitative research methods. The study utilized the statistical software EViews and the Microsoft Office suite of products to conduct various processes and empirical analyses. The autoregressive distributed lag model (ARDL) was used to obtain long-term co-integration among the dataset's variables without losing the data's short-term context. The study found that unemployment, inflation, and poverty contribute to a widening income gap, while economic growth, remittances, and financial development are driving factors behind a reduction in income inequality. However, there is little proof that foreign direct investment improves a country's economy.

Keywords: *Income inequality, Financial development, FDI, GDP growth, Remittances, Unemployment*

Introduction

The level of income inequality within a society is influenced by the economic growth it experiences and how income is distributed through factor markets, particularly labour and capital markets. The distribution of income also has an impact on the consequences of economic growth. If a nation's economic growth leads to greater income disparity, individuals with lower average incomes would not benefit from increased national income. Regions with significant income inequality, especially countries with pre-existing wealth disparities, may experience a weaker correlation between economic growth and improvements in food security, nutrition, and average wage growth (Omar & Inaba, 2020).

Societies facing the challenge of hunger and malnutrition must address these issues alongside economic growth, ensuring that inequality is not pervasive (Omar & Inaba, 2020). In recent years, there has been a reversal in the global income distribution trend. In certain industrialized countries and developing nations, the income gap has widened again after narrowing in previous decades. Researchers have identified several factors that may contribute to this phenomenon and explain the disparities between nations, including economic growth, income distribution, income inequality, foreign direct investment (FDI), remittances, inflation, poverty, and unemployment (Munir & Sultan, 2017).

Vo, Nguyen, & Tran (2019) note that income distribution among different social groups and classes and questions related to poverty and economic development have always been fundamental topics in economics. Even eminent economists like David Ricardo and Karl Marx have tackled such questions. Distribution has recently gained significant attention in research, particularly in development economics, growth theory, and new political economy. The concern has shifted from income distribution among various groups or classes to personal income distribution in the current research.

Economic growth is crucial for reducing poverty since it increases people's median income. However, growth is not an essential criterion. If growth leads to an increase in inequality, the poor will benefit less than the rich. Growth will benefit the poor more if there is a decrease in inequality (Saleem et al., 2021). Economic expansion may exacerbate existing inequalities, and poverty may worsen instead of improving. This is because the negative impact of rising inequality will cancel out the beneficial impact of growth, as expanding inequality carries a greater effect than growth.

The term "immiserating" was used by Bhagwati (1988) to describe a particular kind of change. Investigating the effects of growth and inequality on poverty is important. The Kuznet Curve illustrates the trend of income distribution deteriorating in the initial stage of an economy's growth cycle, followed by a recovery as the growth continues. Some people believe that the problem arose because workers left the more egalitarian agricultural industry for the economically more unequal industrial sector in pursuit of higher salaries. (Mahmood & Chaudhary, 2021).

Furthermore, developing nations have witnessed a rapid increase in external funding through remittances and foreign direct investment from other countries, which has emerged as a crucial source of financing. Khan et al. (2021) suggest that as economic activity increases and foreign funds become more accessible, wealth distribution in developing countries becomes more equitable. Remittances, in addition to aiding developing countries' balance of payments, have the potential to fuel economic growth by increasing investment and consumption. Households receiving remittances may help boost the local economy if they spend and invest more in their community. There has been a surge in empirical research in recent years examining the connection between remittances and income disparities in various countries and regions, potentially due to increased recognition of the importance of remittances in promoting income equality. (Ali, 2018).

Determining whether increasing remittances can impact economic inequality in developing countries is important. While some argue that this influx of wealth may only benefit affluent households and worsen income disparities, several studies have shown that remittances can actually help reduce overall inequality. Furthermore, foreign direct investment plays a crucial role in the growth of emerging economies. (Mdingi & Ho, 2021).

Scope of the Study

The recent research adds to our knowledge by examining the impact of economic growth, FDI, remittances, inflation, poverty, and unemployment on income inequality. These macroeconomic variables are sensitive to changes and affect national income inequality (Khan et al., 2016). The study suggests that remittances and FDI inflows can be used efficiently to reduce income disparity and level wage disparities. This will ultimately lead to a reduction in income inequality in developing nations like Pakistan.

Statement of the Problem

It is crucial to address the issue of economic inequality, as it can harm the overall economy. The wealth gap can lead to inefficiencies in resource utilization, political and economic instability, and an increased likelihood of a crisis. Therefore, it is necessary to determine the root cause of this division. Studies have shown that various factors such as economic growth, foreign direct investment, remittances, inflation, poverty, and unemployment affect income inequality and can be utilized to reduce it. Specifically, remittances and FDI inflows can decrease wage discrepancies and ultimately decrease income inequality, particularly in developing nations like Pakistan.

Objectives of the Study:

This research aims to examine the correlation and strength of influence of several macroeconomic indicators on income inequality in Pakistan. These indicators encompass

GDP, foreign remittances, FDI, unemployment, inflation, financial development, and poverty level, all of which are believed to play a direct role in income inequality.

Hypotheses of the Study

The following hypotheses are established and included in the research model.

- H1: Economic Growth significantly and positively impacts income inequality.
- H2: Remittances have a significant and positive impact on income inequality.
- H3: Foreign Direct Investment has a significant and positive impact on income inequality.
- H4: Unemployment has a significant and positive impact on income inequality.
- H5: Inflation has a significant and positive impact on income inequality.
- H6: Financial Development has a significant and positive impact on income inequality.
- H7: Poverty has a significant and positive impact on income inequality.

Definition of the Key Terms

Economic growth

Economic growth refers to the increase in a nation's real gross domestic product (GDP) over time, indicating a rise in the production and consumption of goods and services within an economy. It is typically measured by the percentage change in real GDP, reflecting the expansion of economic activity and a country's overall prosperity (Mankiw, 2014).

Foreign Remittances

Foreign remittance refers to transferring money or financial assets from individuals living in one country (usually migrants or expatriates) to individuals or households in another country. Play a significant role in the economies of many developing countries by providing a source of income and financial support to recipient households (Klassen & Murphy, 2021).

Foreign Direct Investment (FDI)

Foreign Direct Investment (FDI) refers to the investment made by a company or individual from one country into businesses or assets in another country. It involves establishing operations or acquiring ownership in a foreign enterprise. FDI significantly facilitates international economic integration, promotes technology transfer, job creation, and stimulates economic growth (Organization for Economic Cooperation and Development [OECD], 2020; Investopedia, 2021).

Unemployment

Unemployment refers to the state of being without a job and actively seeking employment (U.S. Bureau of Labor Statistics, 2021). It is a crucial economic indicator that measures the percentage of the labor force that is currently unemployed (Hayes, 2022).

Inflation

Inflation refers to the sustained increase in the general price level of goods and services in an economy over time, decreasing the purchasing power of money. It is measured using various inflation indices, such as the Consumer Price Index (CPI) or the Producer Price Index (PPI), which track changes in the prices of a basket of representative goods and services (Mankiw, 2014).

Financial Development

In this study, financial development means the continuous improvement of financial efficiency brought by the expansion of financial transaction scale and the process of financial industry upgrading. It can be measured by financial depth, such as the stock of private credit and market capitalization as a share of GDP (Guru & Yadav, 2019).

Poverty

Poverty is a state of deprivation or lack of basic necessities and resources for a decent living standard. It is characterized by a lack of income, assets, and access to essential services, such as education, healthcare, and housing (World Bank, 2021).

Review of Literature

Income Inequality

Studying inequality is difficult due to the limited data available. Despite recent developments in inequality data, many empirical studies use different data sets, methodologies, time periods, and geographical locations. As a result, the body of knowledge on the topic is extensive and complex. This article aims to provide a comprehensive overview of existing empirical research on inequality and the macroeconomic factors that contribute to it. Since economic growth is essential to macroeconomics, many scholars have focused on studying the relationship between economic development and inequality, but a consensus has not been reached. (Guru & Yadav, 2019).

A significant study b Omar and Inaba (2020) provided a historical context by emphasizing the parabolic correlation between income and inequality. The study highlighted that higher incomes initially increase inequality before eventually reducing it. However, recent research conducted by Bilan et al., (2020) and Mijs (2021) suggests that income inequality decreases as the degree of inequality increases. On the other hand, Bonacini et al., (2021) argued for a nonlinear relationship between economic growth and inequality. They emphasized that while economic expansion can benefit developed countries, it can be detrimental to developing ones.

According to a recent study by Rodriguez-Pose and Storper (2020), income and inequality are not necessarily strongly correlated. However, an uneven income distribution significantly contributes to the ongoing struggle to end poverty and hunger. Despite progress being made in reducing extreme poverty, a widening wealth gap persists between different groups of people. This suggests that the primary driver of progress in eradicating poverty has been rising prosperity rather than narrowing income gaps. Unfortunately, this wealth gap has remained alarmingly steady for the past fifteen years.

The shared prosperity premium, which measures the difference between the annual growth rate in income or consumption of the poorest 40% of the population and the annual growth rate of the average population in the economy, shows that nearly half of the world's countries, including many low and middle-income countries, are experiencing increasing inequality. This is because the bottom 40% of the population is seeing a slower increase in income or consumption than the average population. However, when focusing on low and middle-income countries, it becomes apparent that income distribution trends are not consistent. The accompanying graphic shows that countries above the line have experienced an increase in income disparity between 2000 and 2015, while those below the line have seen a decrease. Unfortunately, the discrepancy between the rich and poor has grown considerably in several African and Asian countries over the last 15 years. This inequality often leads to increased dependence on a country's ability to provide basic necessities. Of the countries studied, 12 saw no change in income inequality, while 26 saw an increase (Wilkinson, 2020).

The relationship between income disparity and food security is complex during recessions or economic slowdowns. Low-income individuals in nations with more inequality are more affected by economic downturns in food and nutrition security since they spend a higher proportion of their income on food than those with higher incomes (Wilkinson, 2020). An FAO study of 75 low- and middle-income countries found that a high Gini coefficient, defined as greater than 0.35, increases the likelihood of acute food insecurity by 33%. Colciago et al. (2019) research reveals that high-income inequality nations have a severe food insecurity rate three times higher than those with low-income inequality (7% vs. 21%). In addition, higher household incomes are associated with less severe food insecurity, especially in countries with high levels of inequality. Obesity is linked to different forms of inequality than undernourishment, and both are highly correlated with wealth and income disparities. In poor and medium-income countries, these inequalities are linked to health issues since the

poor have limited access to healthcare, healthy food, and other preventive services. For example, in most countries, stunting among children under five is 2.5 times higher in the lowest income quintile than in the highest wealth quintile.

It is important to note that even within the borders of a single country, there is a great deal of diversity among the people and communities that call it home. Arndt et al. (2020) put forth the theory that higher incomes and wider wealth gaps are closely related, with economic inequality typically worsening during the early stages of development before eventually improving over time. Many studies have been conducted on the topic of economic growth and inequality, with a variety of results documented in the database. While there are some studies, such as Rubin and Segal's (2015), that suggest a positive correlation between the two, others, like Majumdar and Partridge (2009) and Nissim (2007), imply a negative relationship. It is important to note that other studies also have conflicting results. (Huang et al. 2015; Chambers 2010).

Recently, the World Inequality Lab published the Global Inequality Report 2022, highlighting that the top 10% of the world's population receives more than half of the world's income, while the poorest half only receives a small fraction. In terms of numbers, the report shows that the average income of the richest 10% is around 82,700 euros per year, while the poorest half of the world earns only 2,800 euros per year. These differences are largely due to income disparities between countries. However, the report also indicates that income disparities within countries have been increasing in recent decades, which is a worrying trend. For instance, in Spain, the average income of an adult is around 26,560 euros, but the richest 10% earn an average of 91,560 euros per year, while the poorest half only receives 11,200 euros. This means that the income gap between the richest and poorest in Spain is eight times higher. These income disparities are similar to those of France and lower than those of Germany, England, and the United States (Sarkodie & Adams, 2020).

Additionally, two main factors contribute to income inequality. The primary driver is the scarcity of employment opportunities, which is responsible for a significant portion of individuals falling into the lowest income bracket. According to 2019 data from our country, two-thirds of people in the bottom 10% of income are unemployed. This is why income inequality surged during the Great Depression of 2008, as the massive loss of employment widened the gap between those who retained their jobs and those who did not. Those with lower levels of education are the most affected by the lack of employment opportunities. In fact, obtaining higher levels of education, whether through vocational training or university, is now much more crucial than it was two decades ago, particularly for young people (Eika et al., 2019).

Two main factors drive income inequality. The first is the lack of job opportunities, which leads to a significant portion of individuals falling into the lowest income bracket. As per 2019 data, two-thirds of people in the bottom 10% of income are unemployed. The Great Depression of 2008 saw a surge in income inequality due to the large-scale loss of employment that widened the gap between employed and unemployed individuals. Those with lower levels of education are most affected by this lack of job opportunities, and obtaining higher education is now more crucial than ever. The second factor contributing to income inequality is poor-quality jobs that do not provide sufficient income to meet basic needs. This affects employed individuals who cannot escape poverty due to low work intensity or hourly wages. Women are particularly affected by low work intensity, with two out of every three experiencing involuntary partiality. To reverse the growing trend of income inequality, public interventions are necessary, including income redistribution policies such as progressive tax measures and public benefits. A recent report suggests that without such policies, income inequality would be almost double the current rate in our country. However,

redistributive policies alone are insufficient, and measures to improve job quality and provide equal opportunities for education and training are also crucial.

Two primary factors cause income inequality. The first is the absence of job opportunities, which leads to a significant portion of individuals falling into the lowest income bracket. According to 2019 data, two-thirds of people in the bottom 10% of income are unemployed. The Great Recession of 2008 resulted in a surge in income inequality due to widespread job loss, which widened the gap between employed and unemployed individuals. The lack of job opportunities affects those with lower levels of education. Obtaining higher education is now more crucial than ever. The second factor contributing to income inequality is poor-quality jobs that do not provide sufficient income to meet basic needs. This affects employed individuals who cannot escape poverty due to low work intensity or hourly wages. Low work intensity is particularly challenging for women, with two out of every three experiencing involuntary partiality. Public interventions are necessary to combat the growing trend of income inequality, including pre-distributive policies that prevent instead of correcting. Providing quality education is essential to equip all citizens with the necessary skills to access employment. Vocational training plays a central role in this challenge, provided that it is modernized and extended to better align people with the jobs that our society currently generates. The new vocational training law is excellent news due to its modernizing elements and a clear commitment to extending it. Access to inclusive quality education in the school stage must also be accompanied by institutions that enable continuous training throughout life for everyone because, in their absence, people's skills will become obsolete in a rapidly changing world of work, relegating many groups to unemployment and widening the inequality gap.

To address the issue of income inequality, it is necessary to take bold political actions in the productive stage. This includes implementing measures that eradicate the increasing

job insecurity prevalent in a significant portion of our labour market. Such measures could include provisions for a fair minimum wage, which can help limit job insecurity and ultimately narrow the income gap. The ongoing labour reform negotiations may provide a useful platform for implementing these measures.

Financial Development

Financial development is crucial for allocating resources to productive enterprises, poverty reduction, and long-term economic growth (Vo et al., 2019). Consequently, it is essential to continue evaluating its development and analyzing challenges in this area. The World Bank and the IMF publish reports that provide valuable input for local actors assessing financial development. The Capital Markets Mission is expected to solve market development problems and promote institutional strengthening and best practices to align with developed countries' financial performance (Furceri & Ostry, 2019).

According to a study by Park and Mercado Jr. (2018), institutional investors have a positive and statistically significant impact on economic growth using panel data from 54 world economies between 1999-2011 and estimating through the generalized method of moments (GMM). This study is based on the work of Bauer in 2018, who investigated the relationship between financial development and economic growth for five Central and Eastern European economies using panel data from 1994-2011. Both studies used similar variables divided into two groups: one for standard growth equations and one for the sector and financial development of the sample countries. In addition, a measure of institutional investors' presence was included to test their effect on economic growth, measured separately for insurance companies, mutual funds, pension funds, and bank loans as a percentage of GDP. While other studies have examined the relationship between economic growth and institutional investors, this study focuses on a specific sample of countries, years, econometric methodologies and explanatory variables.

According to Huang's (2019) study, institutional investors, such as pension funds, insurance companies, and investment firms, play a significant role in developing the stock market and overall economic growth in OECD countries. However, their impact on the development of financial intermediaries, such as loans and deposits, is not as strong. This suggests that institutional investors may be taking over the role of the banking sector and promoting the growth of stock markets at the expense of traditional banking activities.

Previous studies on the relationship between economic growth and institutional investors have mainly used cross-sectional methodology or panel data. However, a more efficient estimate without bias can be obtained using dynamic panel data, a technique based on Trump (2018), which considers the indigeneity of the explanatory variables by using instruments based on previous realizations. This study aims to contribute to understanding this relationship and can be a starting point for future analyses. Institutional investors include banks, finance companies, insurance companies, AFPs, national reinsurance entities, and fund managers authorized by law. Entities designated by the Superintendence may also have this character if they meet certain conditions, such as making financial investments with third-party funds and having relevant participation in the market. Financial and market intermediaries can reduce costs and risks, exercise corporate control, and mobilize savings, so economies with more developed financial and market intermediaries tend to have higher growth rates (Coady & Dizioli, 2018).

A recent study by Rao et al. (2019) investigated the link between financial development and income inequality across 17 countries from 1995-2016. The study analyzed four aspects of financial development and performed three types of analysis to investigate the relationship between financial development and income inequality. The researchers found that financial efficiency and stability can help decrease income inequality, while financial depth and liberalization can increase income inequality. The results also show that for high-

income countries, financial depth is positively related to inequality, while for high-middle-income countries, it is negatively related.

Foreign Direct Investment

Investing in foreign countries can bring about job creation, development, foreign currency, technology transfer, and export boost (Chiu & Lee, 2019). FDI is drawn to markets, efficiency, and natural resources (De Haan, Pleninger, & Sturm, 2018). Argentina, Chile, and Colombia have the highest FDI concentration, while Mexico's rate is lower than previously observed (Sehrawat & Giri, 2018). The correlation between FDI growth and regional economic or developmental progress is limited or non-existent (Jung & Cha, 2021). The evaluation of FDI in national development is complex, requiring consideration of the harmful effects of foreign capital, such as credit capital and financial investment, privatized pension funds, and fiscal policies that favour foreign capital over public resources, as well as its impact on the environment (Ullah et al., 2021).

According to Kaulihowa and Adjasi (2018), deregulatory regulations have benefited foreign and large national capital at the expense of weakened institutions. Moreover, public resources are fiscally fragile, and fiscal policies have favoured national and foreign capital with exemptions and avoidance facilitation. Little attention has been given to higher education, research, and technological development, leading to the innovation process being observed only in large corporations, regardless of whether they are foreign or regional multinationals, while basic public services such as education, health, and social security are deteriorating. Furceri and Ostry (2019) have recently studied the problems and risks associated with international treaties that establish the rules of international arbitration, highlighting the risks of national treatment, the legitimacy of international courts, the scope of the interpretation of international courts on issues such as indirect expropriation and national treatment, and financial costs. Neoliberal governments have developed their

economic policies with the approval of international agencies, such as brokerages rating country risk for foreign investment, international institutions like the IMF and the World Bank, or international competitiveness measurements.

Remittances

Turegano & Herrero (2018) believe that remittances have become a significant source of income for many people in developing countries, in contrast to government development assistance and foreign direct investment. There is an ongoing debate about the effects of remittances on poverty, inequality of income and wealth, consumer behaviour, health and education, economic growth and development, and the stability of national balances of payments. Ali et al. (2022) believe that remittances' influence on the recipients' household income is positive in the short term. One of the great advantages of remittances is that they are paid directly to individuals and families, which usually results in their targeted use to satisfy the specific needs of the recipient families. It should be noted that remittances are private capital and are solely up to the individual migrants and their families and, therefore, cannot be directly compared to other sources of money like state development aid and foreign direct investments.

Migrants abroad are crucial for their families during economic crises, as they often increase their level of support. This behaviour has been observed to help save economies during financial crises, such as the one in Asia. Increasing remittance flows during a recession can support domestic consumption and help overcome export slumps, according to LE and Nguyen (2020). Remittances provide significant support to lower and middle-income households by improving their standard of living and reducing their vulnerability to natural disasters or economic crises. However, comparing different case studies shows contradictory results regarding the effects on income distribution, which may be due to traditional migration patterns. Those in the middle-income bracket are typically the first to migrate as

they can bear the high migration costs, but once migration networks have formed, even poorer groups can emigrate. This migration behaviour exacerbates income inequality in the short term but balances out in the long term.

According to Park & Mercado Jr (2018), remittance recipients spend additional financial resources on daily consumption, house building, land acquisition, medical care, and children's education, with only a small portion saved or invested. Meanwhile, Dewi et al., (2018) found that in some isolated cases, remittances negatively impact growth. For instance, in Kenya, farmers receiving remittance income achieved significantly poorer field yields than those without financial support from abroad. This phenomenon may be attributed to a shift in the incentive structure, where families lose motivation to be productive and instead focus on receiving money from overseas relatives. However, it is important to note that individual behaviour may vary.

Inflation

Inflation has been found to impact income distribution, with a transfer of income from wealthy elderly households to middle-class young households with mortgages. Sehrawat and Giri (2018) suggest that growth-line policies may settle moderate inflation and close the inequality gap. However, Ratnawati (2020) notes that inflation can also result in an income transfer from households to the government/corporate sector, which has a tax-increasing effect on households as a whole. Additionally, if home prices rise due to asset inflation, the lives of mid-career buyers will become even more difficult. Younsi and Bechtini (2020) explain that inflation is a phenomenon of an increase in the prices of goods and services produced in a country, which results from companies attempting to improve their profitability. Huh, and Park (2021) notes that a significant consequence of inflation is the fall in real wages, which impacts purchasing power. Law and Soon (2020) add that inflation often affects purchasing power and can lead to a wage-price spiral, with real wages falling and

purchasing power decreasing. Cigu et al. (2018) mention that inflation can devalue savings if the inflation rate is higher than the interest rate, making less money liable for company loans and impacting production and unemployment. Therefore, depending on the form of inflation and which "group" one belongs to, inflation can result in winners and losers.

Poverty

Poverty in living conditions refers to a situation of lasting economic difficulty defined as the inability to cover, for financial reasons, a certain number of daily living expenses considered desirable, even necessary, to have decent living conditions. Since 2009, material deprivation has been defined at the European level. The “material deprivation” indicator is based on 9 expenditure items; a person is said to be poor in living conditions when accumulating at least 3 deprivations or material difficulties among the 9 on the list. According to Destek et al. (2020), the EU, in 2017, defined a new indicator of "material and social deprivation," which extends the list to 13 items concerning in particular expenditure on housing, clothing, food and leisure.

According to Del Amo et al. (2018), inequality is influenced by various factors, including economic slump, demographic data, and political choices like labour market deregulation and tax cuts. While there is a consensus that higher inequality leads to higher poverty rates, some studies suggest an inverse relationship between inequality and poverty. Akinyemi et al. (2019) highlight the dilemma of whether public policies should focus on reducing poverty or inequality and suggest that both phenomena are related. Kousar et al. (2019) propose measures such as changes in tax and redistributive policies, preventing unemployment and underemployment, and investing in human capital to eliminate poverty. Monfort, Ordóñez, and Sala (2018) emphasize that isolated measures cannot achieve economic recovery and reduction in poverty and inequality rates, and restructuring of health

and education systems is also necessary. Poverty is often understood in relative rather than absolute terms and can be an extreme manifestation of inequality.

Unemployment

According to a study by Mansi et al. (2020), the economic crisis of 2008-2009 resulted in an increase in unemployment across all socio-professional categories. The decline in the unemployment rate in recent years first affected executives in 2015 and intermediate professions in 2016 before eventually affecting workers and employees. Although unemployment fell in 2020, it did so in a misleading way, especially during the first confinement of the population, which limited job search procedures and reduced availability for work. However, the decline in the unemployment rate in 2020 was more pronounced for employees and manual workers.

Ulu (2018) claimed that two factors are responsible for the increasing income gap in the world. Firstly, the polarization of the labour market resulting from technological advancements eliminates middle-class jobs that include routine tasks. While new job opportunities are opening up, those who cannot or will not adapt to the evolving labour market are being pushed out, and those who are most adversely affected are ending up in low-paying jobs with irregular schedules and low compensation. Secondly, Kollamparambil (2020) asserts that the lasting impact of the recent economic crisis is the second key factor responsible for the widening gap. Layoffs are common during economic downturns and temporary employees, predominantly young women and recent immigrants, are disproportionately affected. Despite the fact that the length and number of hours worked per week have reduced, temporary work is still the preferred contractual modality in 90% of contracts. This means that even those who manage to find work again may earn less than they did before the crisis and may be subject to greater salary volatility.

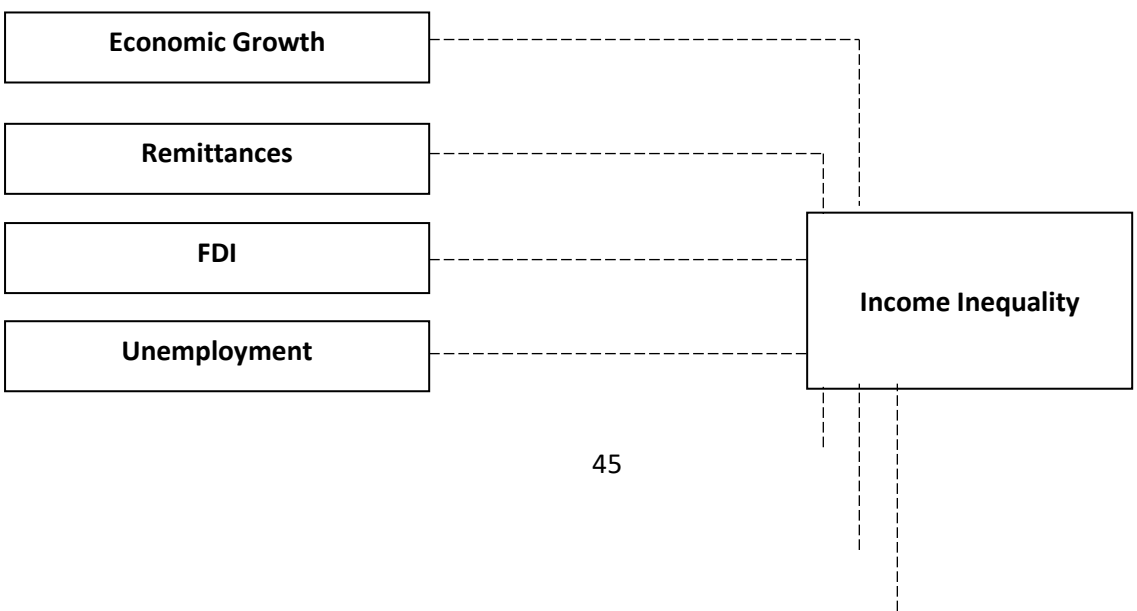
The topic of the optimal amount of income inequality for maximizing social welfare is contentious. While individuals who put in more work should be rewarded with a larger wage, economic disparities in educational and employment opportunities often create an unjust societal perspective. According to Teixeira & Loureiro (2019), limited social mobility in our society makes it almost impossible for kids from the poorest households to become wealthy adults. This is because these children not only end up with lower levels of education but also have a poorer return on their time spent learning. As a result, people from lower-income households tend to have a harder time finding gainful employment than those from more affluent backgrounds. Single-parent households are particularly affected by the poverty trap, requiring special attention.

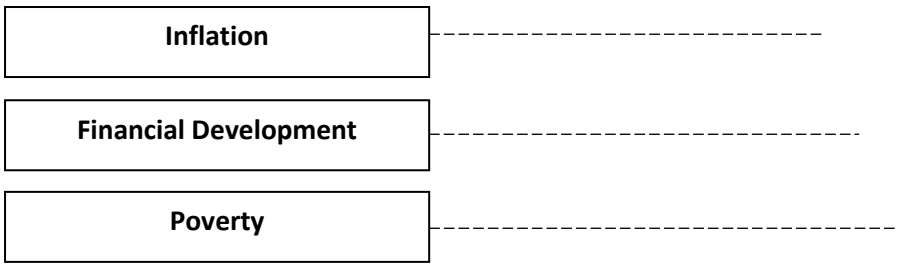
Research Methodology

Research Design:

There are two main approaches to research: deductive and inductive. The study discussed here used a deductive approach, which means starting with general principles and then narrowing down to specific observations. In contrast, inductive research starts with specific observations and then generalizes to broader principles. The current study also used a quantitative research method that systematically collects and analyzes data numerically.

Research Framework





Data Collection & Analysis:

The research methodology utilized secondary data collection in the form of statistical data obtained from online sources. In order to establish and evaluate the relationship between different factors, appropriate social software must be employed in any research endeavor. This study will employ Microsoft Office and the statistical program E-Views for its practical and empirical analysis. The Auto Regressive Distributive Lag (ARDL) model has been selected as it has an in-built criterion to address the problem of stationary data. Furthermore, this model preserves the short-term information in the dataset while establishing long-run co-integration among the variables. An imbalanced panel data set covering 2006 through 2020 will be developed and used for the research. The statistical estimating process based on correlation coefficients of matrices will then commence, including using mean, median, standard deviation, and other descriptive statistics. Finally, the ARDL model will be utilized to validate the direction of the ADF unit root test findings.

Data Analysis and Results

ADF Test

Table 1 displays the results of the ADF test that was conducted to assess the stationarity of the data.

Table 1

Results of Augmented Dickey-Fuller Test

Variables	Level	First Difference	Critical Values of Unit Root			Decision	Order of Integration
			1%	5%	10%		
ECONOG	2.02508	-5.6008*	-4.3393	-3.5875	-3.22923	Nonstationary at level but stationary at 1st difference	$I_{(1)}$
REMITT	6.048036	-4.65813*	-3.6210	-2.9434	-2.6102	Nonstationary at level but stationary at 1st difference	$I_{(1)}$
FDI	1.97046	-3.767919*	-3.6329	-2.94840	-2.61287	Nonstationary at level but stationary at 1st difference	$I_{(1)}$
UNEMP	5.43997	-1.7866***	-2.6416	-1.9520	-1.61040	Nonstationary at level but stationary at 1st difference	$I_{(1)}$
INF	-0.90741	-7.58927*	-2.63921	-1.95168	-1.61057	Nonstationary at level but stationary at 1st difference	$I_{(1)}$
FINAND	-0.38522	-4.336305*	-2.64167	-1.95206	-1.61040	Nonstationary at level but stationary at 1st difference	$I_{(1)}$
POVERT	-5.4062*	-	-4.28458	-3.56288	-3.21536	Nonstationary at level but stationary at 1st difference	$I_{(0)}$

*Significant at 1%, ** Significant at 5% and *** Significant at 10%

Based on the ADF test results presented in Table 1, it can be observed that Poverty (P OVERT) is stationary at the level, while other variables are integrated at first difference. The ARDL method is a suitable co-integration method for this scenario. It can accommodate data stationarity at various orders, but the results would be inaccurate if the data is stationary at a second difference. With no variables integrated at 2nd or higher differences, we can confidently state that the ARDL results are reliable.

Results of the ARDL Technique

Table 2 displays the ARDL co-integration results using Schwarz Bayesian Criterion (1, 0, 0, 1, 0, 0, and 1).

Table 2

Results of ARDL Technique for Gini Coefficient

Variable	Coefficients	T-ratio, p-Value
GINI(-1)	0.74682	10.636, (0.000)*
ECONOG	0.021140	0.32561, (0.706)
ECONOG(-1)	-0.20366	-2.6662, (0.013)**
REMITT	-0.55029	-2.2661, (0.035)**
FDI	-0.15872	-0.2362, (0.816)
UNEMP	0.10713	1.8980, (0.072)**
INF	0.20612	1.7870, (0.081)**
FINANCE	0.010150	0.24561, (0.808)
FINANCD (-1)	-0.10488	-2.7784, (0.012)**
POVERT	3.0631	4.1604, (0.000)*
R square = 0.98433		Adjusted R square = 0.97806
D.W statistic = 1.97		F-statistics = 157.0000 [.000]

**Significant at 1%, **Significant at 5%*

Based on the test approach described above, the F-statistic indicated that there is co-integration among the variables. If the F-statistic is above the upper critical bounds, then co-integration exists. The F-statistic results indicate co-integration among the variables, which means that the null hypothesis of no co-integration can be rejected. The Gini coefficient ranges from 0 to 1, with 0 representing perfect equality and 1 representing perfect inequality. A positive coefficient indicates an increase in income inequality, so a negative sign is desirable. Based on the ARDL co-integration estimation, a lag value of inequality creates inequality in the current period. Unemployment, inflation, and poverty are responsible for increasing income inequality, while remittances, the lag value of financial development, and economic growth are reducing inequality. The impact of FDI is negative but insignificant. The results show that the model has good explanatory power, with 98% of the variations being caused by the explanatory variables.

Results of ARDL Estimates for Long-run

Table 3

Results of ARDL Estimates for Long-run

Variables	**Coefficients**	**T-Ratio, p-value**
ECONOG	-.36218	-3.0600, (0.030)**
REMITT	-2.1735	-2.745, (0.012)**
FDI	-.62690	-.22945, (0.821)
UNEMP	.42313	1.7079, (0.103)***
INF	.33212	2.6086, (0.102)***
FINAND	-.37416	-2.0900, (0.050)**
POVERTY	12.0985	3.1870, (0.005)*
F-statistic = 5.9514	Significant at 95%	
Lower bound = 2.4829	Upper bound = 3.9494	

**Significant at 1%, **Significant at 5% and ***Significant at 10%*

According to the above long-run ARDL estimation, Unemployment, Inflation, and Poverty positively impact income inequality. However, Economic Growth, Remittances and financial development are appeared as reducing factors of income inequality. Finally, the association between Foreign Direct Investment and inequality is insignificant.

Results of Diagnostic Test

This test is important because it helps find the empirical findings' reliability and accuracy. The results are shown below:

Table 4

Results of Diagnostic Test for ARDL Model for Gini-Coefficient

Test	**Co-efficient, p-Value**
LM Lagrange Multiplier for no autocorrelation	1.6418, (0.215)
Ramsey reset test for functional form	1.1715, (0.293)
Jarque-Bera test for normality	0.40919, (0.815)
Regression of squared residual and square fitted residual for heteroscedasticity	1.4409, (0.240)

According to the tests conducted, there was no evidence of autocorrelation in the model, and the model's functional form was accurately specified through Ramsey's reset test. The Jarque Bera results indicated that all estimates of the model are normally distributed, which led to the acceptance of the null hypothesis. As a result, no heteroscedasticity issues were confirmed in the ARDL model provided.

Results for Stability of the Model

Model stability is tested through CUSUM and CUSUMSQ tests. The CUSUM graph shows that it remains within the critical bounds. On the other hand, the CUSUMSQ graph is out of the critical bounds. Therefore, there is a structural break in the model. We have employed Chow Test for the detection of structural breaks as shown below:

Table 5

Results of Chow Test

F-statistics = 149973	Prob. F(9,11) = 0.0000
Log Likelihood ratio = 339.8090	Prob. Chi-Square(9) = 0.0003
Wald Statistics = 134976	Prob. Chi-Square(9) = 0.0000

According to the above results, there is a structural break at 2001. The log-likelihood, F statistic, and Wald statistic indicate the same results. Therefore, the alternative hypothesis is accepted, for instance, structural break existence.

Results of the Gregory-Hansen Test

We have incorporated the Gregory-Hansen test for confronting the structural instability problem.

Dtk = 0 if t < k

Dtk = 1 if t > k

Model 1: Cointegration with level shift

Model 2: Cointegration with a regime shift

After the structural break, the level-shift model includes a dummy that represents the modification of the intercept. When the dummy is multiplied by each model variable, the regime shift model displays the effect on each coefficient. The Gregory-Hansen Method is used to fix structural problems by adding a dummy variable to the ordinary least squares (OLS) test.

Table 6

Results of Gregory-Hansen Test (with level shift) for Structural Break at 2001

Variable	Coefficient	t-Statistic	Prob
ECONOG	-6.041169	-3.704122	0.0012*
REMITT	-2.402314	-4.366101	0.0002*
FDI	3.208536	2.057053	0.0517**
UNEMP	0.321851	2.148204	0.0430**
INF	0.071962	0.947536	0.3537
FINANCD	125.8862	4.240853	0.0003*
POVERT	-2.067890	-2.604604	0.0162**
C	-335.1303	-4.180753	0.0004*
R2 = 0.899294		Adj R2 = 0.867251	
F – stat = 28.06543		F- stat Prob = 0.000000	

*significant at 1% and ** significant at 5%

Table 7

Results of the Gregory-Hansen Test (with regime shift) for Structural Break at 2001

Variables	Co-efficients	T-test	Prob.
ECONOG	0.527437	4.400917	0.0005*
REMITT	0.057728	2.047926	0.0585**
FDI	0.211642	3.059660	0.0079*
UNEMP	0.002348	0.385924	0.7050
INF	0.002236	0.050238	0.8186
FINAND	-0.003372	-0.677849	0.5082
POVERT	30.31396	16.88762	0.0000*
Dummy	75.63643	4.824409	0.0002*
Dum_GI	1.000000	13.27957	0.0000*
Dum_ECONOG	-0.527437	-1.175275	0.2582
Dum_REMITT	-0.057728	-0.232086	0.8196
Dum_FDI	-0.211642	-0.468687	0.6460
Dum_UNEMP	-0.002348	-0.090047	0.9294
Dum_INF	-0.002236	-0.050238	0.8186
Dum_FINAND	0.003372	0.311728	0.7595
Dum_POVERT	-30.31396	-4.961765	0.0002*
C	-75.63643	-15.12549	0.0000*
R^2	0.999923	Adj.R2	0.999850
F-Stat	13847.04	F-stat Prob	0.000000

*Significant at 1%, **Significant at 5%

According to the above Gregory-Hansen test, the dummy coefficient has a negative sign. The intercepts change downwards after the structural change. Results of regime shift where intercept and slope coefficient change show that variables of Gini-coefficient and Poverty are significant while other variables are insignificant.

Summary and Discussion

Summary

The negative effects of income inequality on economic growth and market confidence make it important to identify its contributing factors. To this end, a study was conducted in Pakistan to identify the factors affecting income inequality. The study used a deductive approach and quantitative research with statistical data collected from online sources. Social

software, such as EViews and Microsoft Office, was employed to conduct the analysis and operations. The Autoregressive Distributive Lag (ARDL) model was chosen due to its ability to deal with stationary data and provide reliable findings. The analysis used an imbalanced panel dataset covering the years 2006 through 2020. The ARDL model was used to double-check the directional accuracy of the ADF unit root test. Long-run estimates from the ARDL model showed that unemployment, inflation, and poverty contribute to income disparity, while economic growth, remittances, and financial development help mitigate it. However, Foreign Direct Investment did not have a significant effect.

Discussion

A study in Pakistan aimed to uncover the factors contributing to income inequality using quantitative research and a deductive approach. The analysis used an imbalanced panel dataset spanning from 2006 to 2020 and relied on the Auto Regressive Distributive Lag (ARDL) model due to its ability to handle stationary data. Long-term estimates from the ARDL model revealed that poverty, unemployment, and inflation contribute to income disparity, while economic growth, financial development, and remittances help decrease it. However, foreign direct investment was found to have a minimal impact. Financial efficiency and economic growth are positively associated with reducing inequality, while financial independence is related to increasing inequality.

Stability in remittances during economic crises is crucial for recipients, as it provides a counter-cyclical increase in support for their families, which can help save the economy during financial crises. A recession could only be avoided by increasing remittance flows, which supported domestic consumption and helped overcome the export figures' slump. The immediate increase in available family income is a significant support, particularly for households in the lower and middle-income brackets. Remittances not only improve living standards but also reduce vulnerability in the event of natural disasters or economic crises.

The study found that lack of employment is the primary driver behind income inequality, and pre-distributive policies, such as providing quality education, are required to prevent it. Public intervention must employ all of its resources to promote pre-distributive policies that prevent income inequality instead of trying to correct it. Quality education is the most prominent policy that equips all citizens with the necessary skills to access employment.

Conclusion and Recommendations

Conclusion

The study aimed to uncover the root causes of income inequality in Pakistan through quantitative research and a deductive approach. It found that poverty, unemployment, and inflation contribute to income disparity, while economic growth, remittances, and financial development can help reduce it. However, foreign direct investment has had a limited impact. The study highlights the importance of pre-distributive policies, such as quality education, to prevent income inequality. Policymakers should prioritize economic development and financial growth to address Pakistan's rising income gap.

Recommendations

- To reduce inequality, changes are needed, such as eradicating extreme poverty and investing more in health, education, social protection, and decent work, particularly for young individuals.
- Empowering and promoting inclusive social and economic growth and employment within countries is crucial. By eliminating discriminatory policies, laws, and practices, equal opportunity can be ensured, and income inequality can be reduced.
- Remittance fees should be decreased, and remittance channels with fees over 5% should be eliminated.
- Well-planned and well-managed policies by governments and other stakeholders can help to promote economic growth and financial development.

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