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Does Economic Growth Reduce Crime? Evidence from India Using an ARDL Model

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Does Economic Growth Reduce Crime? Evidence from India Using an ARDL Model

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Abstract

Crime is one of the major persistent social challenges faced by developing economies coexisting alongside economic growth and social transformation. This study analyses the short-run and long-run factors such as Gross Fixed Capital Formation (GFCF), Government Expenditure, Inflation, Rule of Law, and Population Growth which affect crime in India using annual time-series data from 1995 to 2022. The study uses the Autoregressive Distributed Lag (ARDL) modelling approach which is well-suited for variables with mixed order of integration and examines both short-run and long-run relationships among the variables.

The results reveal that sustained investment acts as a protective barrier and significantly reduces crime in the long-run. In contrast, Government expenditure has mixed short-run effects but a positive long-run impact on crime highlighting the need for effective and efficient composition of public spending. Inflation is one of the major factors causing crime with a lagged effect and improvements in the rule of law can significantly reduce crime occurrence in the nation. Population growth also shows a significant long-run relationship with crime indicating the importance of demographic pressure.

Overall, the findings suggest that crime is not only a result of underdevelopment but is also influenced by the quality of growth, government effectiveness and macroeconomic stability. The study also provides policy recommendations for promoting inclusive development and ensuring social stability along with economic growth.

Keywords: Economic Growth; Crime Determinants; ARDL Model; Institutional Quality; Macroeconomic Stability; India

1 Introduction

In a world where countries are increasingly prioritizing rapid economic growth, many of these countries are neglecting some very important aspects of development like crime and social stability. We consider crime as a separate issue different from economic processes like investment, inflation or governance. However, crime, economic performance and institutional quality are deeply interconnected and interrelated to each other. Emerging advocates in development economics often question whether economic growth alone is enough to ensure social well-being, thus adding to the severity of the situation that growth can coexist with rising inequality, institutional stress and social unrest. This gives rise to an important concern that can economic growth if uneven or poorly governed can contribute to higher crime rates rather than ensuring social stability.

In developing countries like India, the impact of rapid economic growth, urbanization and population growth is varied with respect to the rate and nature of crime. Between 1995 and 2022, total crimes recorded have increased significantly highlighting the existing structural and social challenges. Over the same period, India experienced sustained economic expansion, rising investment and increased public expenditure along with the increasing inflationary pressure and rapid economic growth. These trends show us the side of the picture where not poverty but rather economic conditions, institutional effectiveness and demographic pressure somewhere force crime in the country.

While economic growth is often viewed as a solution to the social problems faced by the countries but the coexistence of crime challenges this assumption. Countries with lower crime rates usually have stronger institutions, effective governance and inclusive growth process. However, weak rule of law, inflationary pressure and uneven investment can impact social stability during periods of economic progress. Therefore, it is very important to understand how these macroeconomic variables and institutional factors influence crime over time for effective policy formulation and enforcement.

Existing studies on crime in India are limited mostly in terms of analysing long-run relationships. Most of them rely on cross-sectional data or examine only a few economic variables, which provides us with limited information as to how economic and institutional factors influence crime in the country. Very few studies analyse the combined effect of investment, government spending, inflation, institutional quality and population growth on crime in both the short and long run.

This study addresses these gaps by examining the short-run and long-run factors affecting crime in India using annual data from 1995 to 2022. The Autoregressive Distributed Lag Approach is used to analyse how Gross Fixed Capital Formation (GFCF), Government Expenditure, Inflation, Rule of Law and Population Growth affect crime over time and allows variables with different integration orders to be interpreted for both short-run

and long-run relationships. Additionally, the findings of this study provide policymakers with useful insights for designing effective and efficient strategies to promote economic growth, ensure social stability and foster inclusive development.

2 **Review of Literature**

The rational choice concept of Becker (1968) inspires the economic analysis of crime in that criminal behaviour is a choice in which the individual will evaluate the benefits of the illegal activity against the cost of punishment. This theoretical basis has been extensively deployed in empirical studies in an attempt to examine the impact of economic and institutional conditions on the problem of crime.

The initial empirical research in the Indian context was mainly aimed at establishing the trends and patterns of crime using the official crime data. Crime patterns in the police-recorded crime data reveal that the trend over time in some categories of crimes have changed differently with some recording crime patterns increasing and others such as crime against women recording a decreasing pattern. These results indicate the usefulness and the weaknesses of the official crime data in the understanding of the dynamic of crime in India (Ansari et al., 2015).

Later studies have broadened the analysis to investigate the spatial and regional differences in crime in India. Spatio-temporal analysis shows that the crime patterns have considerable regional differences, implying that the socioeconomic development and demographic characteristics, and institutional performance differ among the states and affect the distribution of crime in a geographical area (Kabiraj, 2022). These results show that the crime cannot be equally spread over the regions and might be affected by the neighbouring regions in terms of social and economic relations.

The contribution of economic conditions toward explaining crime variation has also been studied by a number of researches. There is empirical evidence that the macroeconomic factors including unemployment, income inequality, and demographic pressures have a great influence on crime rates in the Indian states. These works suggest that economic instability and imbalanced distribution of opportunities may provide incentives to criminal behaviour, especially in the regions with a quick social and economic change (Hazra, 2020).

Later studies have also delved into the correlation between the bigger macroeconomic variables and crime. The research that has been conducted to investigate economic development, inflation and population dynamics proposes that macroeconomic factors have a significant role in determining the time-varying patterns of crime. According to such analyses, economic pressures, the increase in living costs, and changes in the economic structure can also be used to influence criminal activities by modifying the economic opportunities of individuals and their social environment (Sharma, 2023).

Besides the macroeconomic factors, the socioeconomic conditions and structural inequalities have been cited as key determinants of crime. Studies that have explored the socioeconomic climate of states in India point out that disparities in the economy, unemployment and population pressures play a significant role in influencing differences in the rates of crime. These results highlight that crime is intimately connected to a wider range of socioeconomic buildings and developmental patterns, within regions (Kumar and Sharma, 2018; Iqbal and Khan, 2023).

The performance of the institutions has also become the growing area of interest in crime-related studies. There are indications of the fact that more robust governance structures, superb law enforcement apparatus, and better quality of institutions may be important in reducing crime by augmenting the likelihood of capture and reprimand. The institutional effectiveness thus comes in as a significant factor that determines the interaction between the economic conditions and the criminality.

With these contributions, gaps still exist in the literature which are important. Most of the available studies are based on cross sectional or panel designs which mainly attain short and medium term changes in crime between regions. Moreover, most of the studies concentrate on a few socioeconomic variables and hardly ever use larger macroeconomic variables like investment, government spending, inflation, and institutional quality at the same time. Therefore, the issue on the relationship between macroeconomic conditions, effectiveness of governance, and crime in India has not been fully studied in the long-run.

This paper fills these gaps by examining the short and long-run determinants of crime in India over the time-series (1995-2022). It uses the Autoregressive Distributed Lag (ARDL) methodology, unlike the majority of the past studies that use the autoregressive methodology, which is appropriate to study long-run relationships with small samples and mixed orders of integration. The study includes the variables of Gross Fixed Capital

Formation, government spending, inflation, rule of law, and population growth, and so it offers more insight into the role of economic and institutional factors in crime in India over time.

3 **Methods**

Participants

This study does not involve human participation or survey-based primary data. It relies entirely on secondary, aggregate-level data for India and uses annual time series data for India covering the period 1995-2022. Data on crime incidence were taken from the National Crime Records Bureau (NCRB), while macroeconomic and institutional variables were obtained from the World Bank database. The secondary data used here are from official sources ensuring reliability and consistency.

Variables

The dependent variable "crime" is estimated as the natural logarithm of total reported crimes (LN_CRIME). This was done to stabilize variance and allow proportional inference. The independent variables include Gross Fixed Capital Formation (GFCF) which is used as a proxy for investment, Government Expenditure (GOVEXP), Inflation, Rule of Law (RULE) as an indicator for institutional quality and effectiveness and Population Growth (POPGROWTH).

Procedure

For analysing the relationship between crime and its macroeconomic determinants, the study uses a time series econometric approach. Preliminary tests were conducted to check for the stationarity of data and to determine the order of integration of variables. Based on the results obtained, the Autoregressive Distributed Lag (ARDL) model was selected as our primary estimation technique as it works well with small sample sizes and allows for estimation of both short- run and long-run effects with a single equation.

$$\ln(CRIME_t) = \alpha_0 + \Sigma_{i=1}^{p} \alpha_i \ln(CRIME_{t-i}) + \Sigma_{j=0}^{\varphi 1} \beta_j GFCF_{t-j} + \Sigma_{k=0}^{\varphi 2} \gamma_k GOVEXP_{t-k} + \Sigma_{l=0}^{\varphi 3} \delta_l INFLATION_{t-l} + \Sigma_{m=0}^{\varphi 4} \varphi_m RULE_{t-m} + \Sigma_{n=0}^{\varphi 5} \psi_n POPGROWTH_{t-n} + \varepsilon_t$$

Lag lengths for the ARDL model were determined using the Akaike Information Criterion (AIC), with a maximum length of two used due to the limited sample size and annual nature of the data. Additionally, diagnostic and stability tests were performed to ensure model reliability. All the econometric estimations were performed using EViews.

4 **Results**

4.1 Pre-test

Prior to econometric analysis, a preliminary analysis was performed to understand the basic nature and time series behaviour of the variables.

4.1.1Trend Analysis and Descriptive Statistics

As shown in Fig. 1, crime shows a clear upward movement over the period with relatively slow growth during late 1990s and early 2000s and a sharp rise after 2010. A notable rise is visible around 2020 after which crime levels decline slightly but still remains higher than the earlier years.

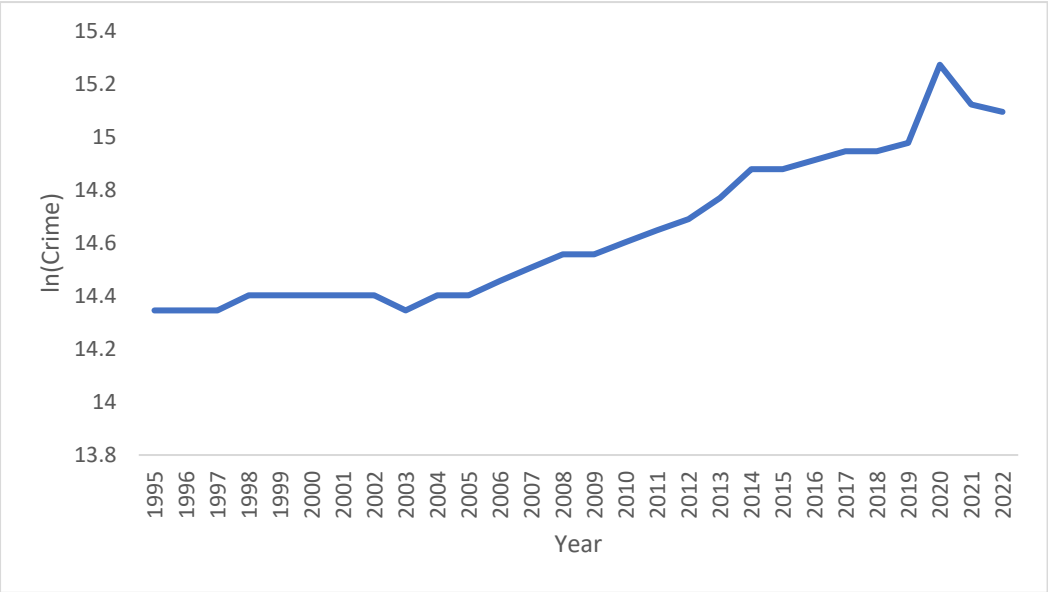


Fig. 1 Trend In Crime Incidence In India

Investment, as depicted in Fig. 2, has increased steadily from the mid-1990s and was higher during the mid-2000s, showing a period of rapid economic expansion. However, it declined after 2011, showing a slowdown in investment activity before showing a moderate recovery in recent years.

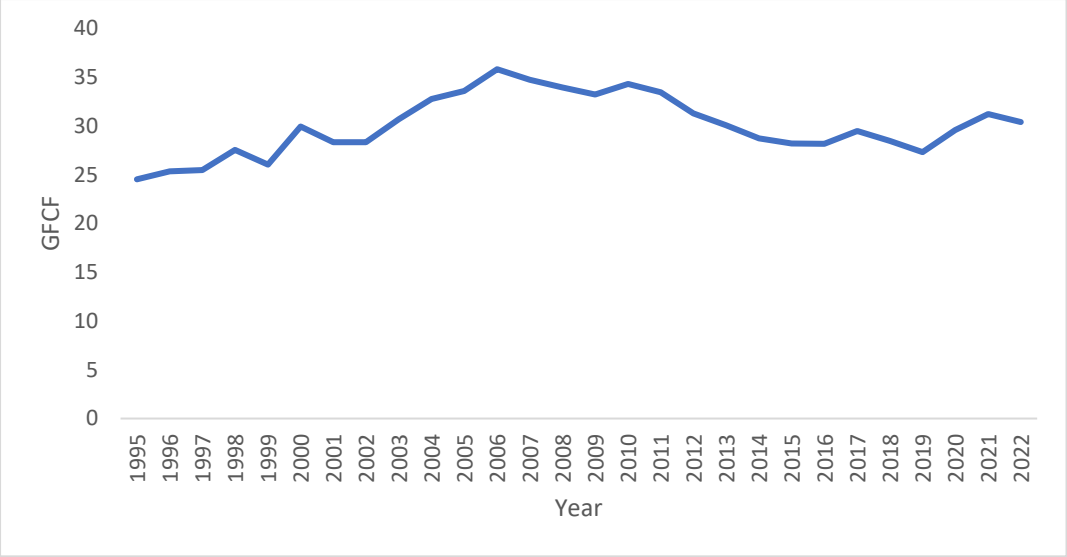


Fig. 2 Trend In Gross Fixed Capital Formation (GFCF)

Public spending shown in Fig. 3 has moderate fluctuations but has a rising trend after 2010. This shows increased government participation in the economy during periods of economic stress. The institutional quality as depicted by the rule of law in Fig. 4 remains relatively stable over time with mild fluctuations. The lack of strong improvement in the rule of law explains the persistence of crime even after economic growth.

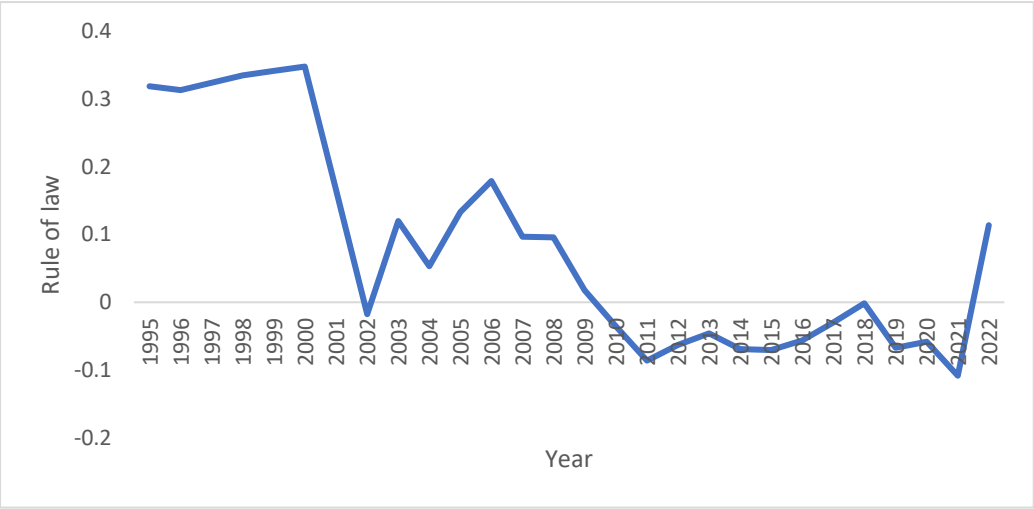


Fig. 3 Trend In Rule Of Law

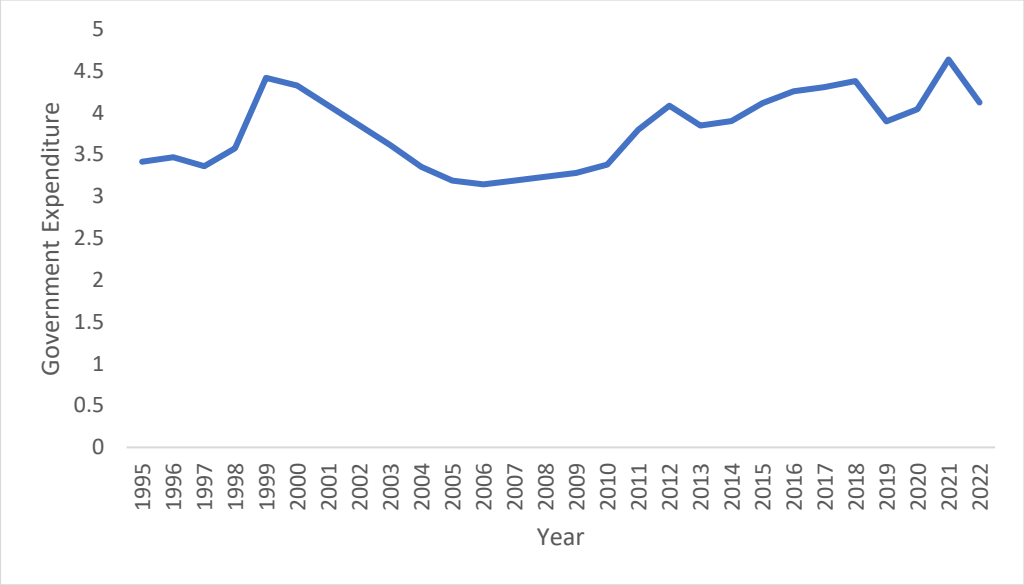


Fig. 4 Trend In Government Expenditure

As shown in Fig. 5, Inflation was highly volatile, particularly during the late 1900s, mid-2000s, and early 2010s. Periods of declining inflation are visible after 2014. These fluctuations explain how economic uncertainty and cost-of-living pressures affect crime in the country, with an average lying approximately between 5-7%.

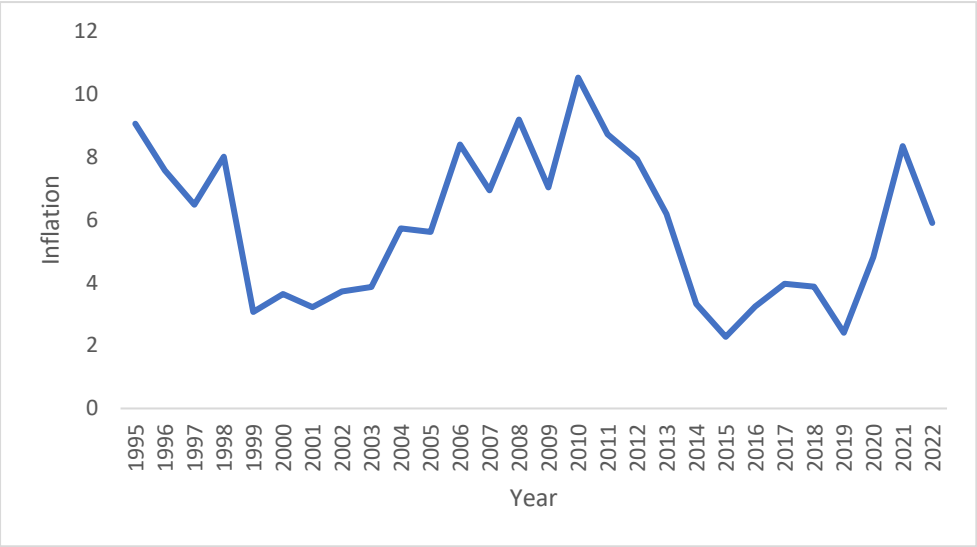


Fig. 5 Trend In Inflation

As depicted in Fig. 6, Population growth rate shows a declining trend over these years with a moderate variation over time highlighting sustained demographic pressure that can affect crime levels through urbanization and labour market pressure which may lead to increased unemployment and crime in the country.

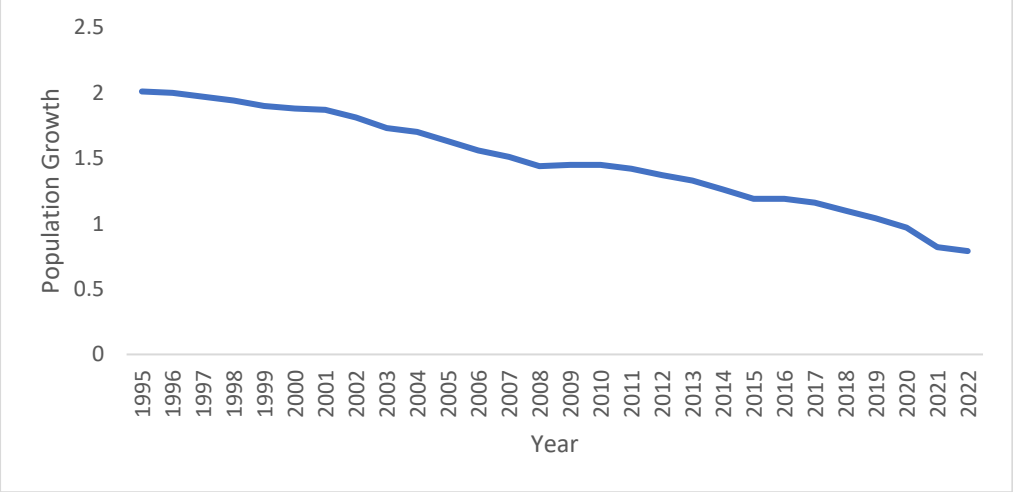


Fig. 6 Trend In Population Growth

Table 1 presents the descriptive statistics of the variables used in the study, including the mean, standard deviation, minimum, and maximum values.

Table 1 Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
GFCF	30.032	3.071	24.524	35.812
GovExp	3.794	0.442	3.142	4.635
Inflation	5.825	2.386	2.280	10.530
Rule	0.802	0.155	-0.108	0.348
PopGrowth	1.482	0.366	0.790	2.010

4.1.2 Correlation Analysis

Table 2 presents the Pearson correlation matrix among the variables used in the study.

Table 2 Pearson Correlation Matrix

Variable	**ln_crime**	**inflation**	**govexp**	**gfcf**	**popgrowth**	**rule**
ln_crime	1.000					
inflation	-0.225	1.000				
govexp	0.583	-0.531	1.000			
gfcf	0.014	0.423	-0.392	1.000		
popgrowth	-0.948	0.131	-0.448	-0.264	1.000	
rule	-0.701	0.116	-0.276	-0.361	0.778	1.000

Crime shows a moderate positive correlation with government expenditure, indicating that higher public spending is associated with a higher incidence of reported crimes, which may reflect an improved crime reporting mechanism. In contrast, crime is negatively correlated with inflation, population growth, and the rule of law, showing that stronger institutions and demographic adjustments lead to lower crime rates in the country. The correlation between crime and Gross Fixed Capital Formation is very. Overall, the correlation values are moderate which indicates that there is an absence of serious multicollinearity and supports the inclusion of all variables in the ARDL framework

4.1.3 Stationarity Tests

Stationarity test was performed using the Augmented Dickey-Fuller (ADF) unit root test for the variables which shows a mixed order of integration as shown below in Table 3. Gross Fixed Capital Formation (GFCF) and Government Expenditure are stationary at a level, whereas crime, inflation, the rule of law, and population growth become stationary after first differencing. Here, none of the variables included in the final model are integrated of order two which is a necessary condition for running ARDL model.

Table 3 Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variable	**ADF Statistic (Level)**	**ADF Statistic (First Difference)**	**Order of Integration**
LN_CRIME	Non-stationary	−4.38***	I(1)
GFCF	−3.96***	-	I(0)
GOVEXP	−5.08*** (Trend)	-	I(0)
INFLATION	Non-stationary	−6.48***	I(1)
RULE	Non-stationary	−4.69***	I(1)
POPGROWTH	Non-stationary	−4.18***	I(1)

*** *denotes significance at the 1% level.*
ADF tests include an intercept; a linear trend is included where required.
Lag length is selected using the Schwarz Information Criterion (SIC).

4.2 Post-Test

4.2.1 ARDL Model

The Autoregressive Distributed Lag Model (ARDL) was used to analyse the dynamic relationship between crime and its macroeconomic determinants with respect to Indian Economy. Lag length was determined using Akaike Information Criterion with the maximum lag restricted to two as we have a limited sample size collected annually. The selected model was ARDL(2,1,2,2,1,1).

The short-run ARDL estimation results are presented in Table 4.

Table 4 Autoregressive Distributed Lag (ARDL) Results

Variable	**Coefficient**	**t-Statistic**
GFCF(-1)	−0.031***	−3.08
GOVEXP	0.189***	4.15
GOVEXP(-1)	−0.162**	-2.46
GOVEXP(-2)	0.236***	3.69

INFLATION(-2)	0.015*	2.04
RULE(-1)	−0.310**	-2.06
POPGROWTH(-1)	−1.297**	-2.66
Constant	31.07***	3.67

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

The short-run ARDL results in Table 4 show that Gross Fixed Capital Formation significantly reduces crime which highlights the crucial role of investment in India in terms of crime reduction. Government Expenditure has mixed short-run effects on crime where spending initially increases crime but its impact in the following year helps reduce crime showing thr delayed impact of government expenditure. Similarly, Inflation has a delayed positive impact on crime where rising prices increases economic pressure leading to higher crime rates in the country. Improvements in the rule of law significantly reduce crime incidence pointing out the importance of strong institutions and effective enforcement. Population growth also has a lagged negative effect on crime.

4.2.2 Bound Test for Cointegration

The ARDL bounds test results used to determine the presence of cointegration are reported in Table 5.

Table 5 ARDL Bounds Test Results

Test Statistic	**Value**
F-statistic	7.47
Lower Bound I(0) (5%)	2.62
Upper Bound I(1) (5%)	3.79
Lower Bound I(0) (1%)	3.41
Upper Bound I(1) (1%)	4.68
Cointegration	Yes

The null hypothesis is that no long-run relationship exists.
Critical values are based on Pearsan et al. (2001).

The presence of a long-run relationship among variables was determined using the ARDL bounds Test to check for cointegration. The calculated F-statistic value of 7.47 is more than upper bound critical values at both 5% and 1% levels of significance. Here, the null hypothesis of no long-run relationship is rejected, confirming the existence of a stable long-run equilibrium relationship between crime and its macroeconomic determinants in India.

The estimated long-run ARDL coefficients are presented in Table 6.

Table 6 Long-Run ARDL Coefficients (Dependent Variable: ln(Crime))

Variable	**Coefficient**	**t-Statistic**	**Significance**
GFCF	−0.017***	−5.47	$p < 0.01$
GOVEXP	0.133***	4.47	$p < 0.01$
INFLATION	0.015***	3.37	$p < 0.01$
RULE	0.185**	2.75	$p < 0.05$
POPGROWTH	−0.820***	−22.66	$p < 0.01$
Constant	15.78***	80.88	$p < 0.01$

*** $p < 0.01$, ** $p < 0.05$
*All coefficients represent **long-run effects**.*

The long-run ARDL results show that GFCF has a negative and statistically significant impact on crime, suggesting that higher investment reduces crime by improving economic opportunities and infrastructure. Government expenditure shows a positive and significant long-run relationship with crime, pointing out that increased public spending is associated with higher crime rates due to inefficiencies and uneven allocation of resources. Inflation has a positive and significant effect on crime highlighting increased economic pressure and cost of living stress over time. Improvements in the rule of law significantly reduce crime showing the importance of strong institutions and effective enforcement mechanisms. Population growth has a negative and significant long-run effect on crime suggesting that demographic adjustments and labour absorption may help reduce crime over time.

4.2.3 Error Correction Model

We have obtained ECT value -1.97 and p value,0.01 which confirms the stability of the long-run relationship among the variables. The magnitude of the coefficient shows deviations from long-run equilibrium are corrected rapidly with a substantial portion of short-run disequilibrium adjusted within one period.

4.2.4 Diagnostic Test

To ensure the reliability and adequacy of the estimated ARDL model, several post-estimation diagnostics were conducted including tests for serial correlation, heteroskedasticity and model specification as shown in Table 7.

Table 7 Diagnostic test results

Diagnostic Test	Test Statistic	p-value	Conclusion
Breusch–Godfrey LM (Autocorrelation)	F-statistic	0.1547	No serial correlation
Breusch–Pagan–Godfrey (Heteroskedasticity)	F-statistic	0.3260	No heteroskedasticity
Ramsey RESET (Functional Form)	F-statistic	0.1178	Model correctly specified

The null hypothesis is not rejected for any of the diagnostic tests at the 5% significance level.

The Breusch–Godfrey LM test shows the absence of serial correlation in the residuals confirming that the dynamic specification of the ARDL model is appropriate. The Breusch–Pagan–Godfrey test fails to reject the null hypothesis of homoskedasticity pointing that the residuals have constant variance. Additionally, the Ramsey RESET test indicates that the model is correctly specified with no evidence of functional form misspecification or omitted variable bias. Overall, these results confirm the robustness and reliability of the estimated ARDL model.

4.2.5 Stability Test

The stability of the estimated ARDL model was estimated using the CUSUM and CUSUM of Squares tests in Fig. 7 and Fig. 8, respectively. The results indicate that the cumulative sum of recursive residuals lies within the 5 percent significance boundaries throughout the sample period. Similarly, the CUSUM of Squares plot does not cross the critical bounds. These findings confirm that the estimated coefficients are stable over time and that there is no evidence of structural instability in the model.

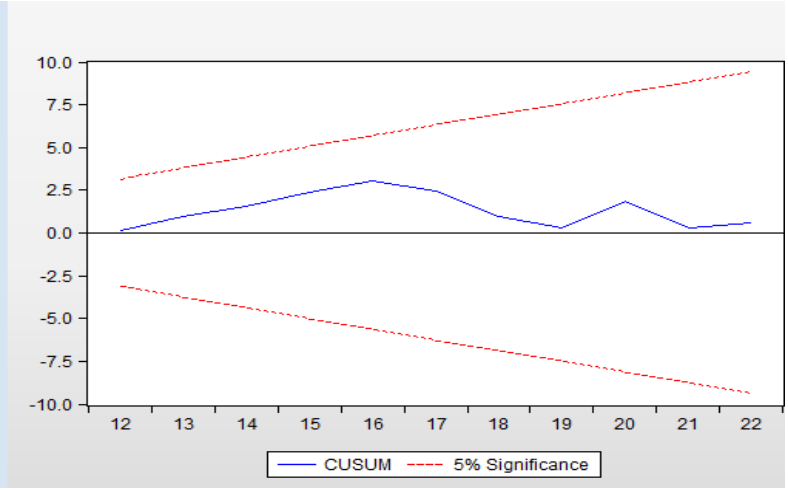


Fig. 7 CUSUM Test Results

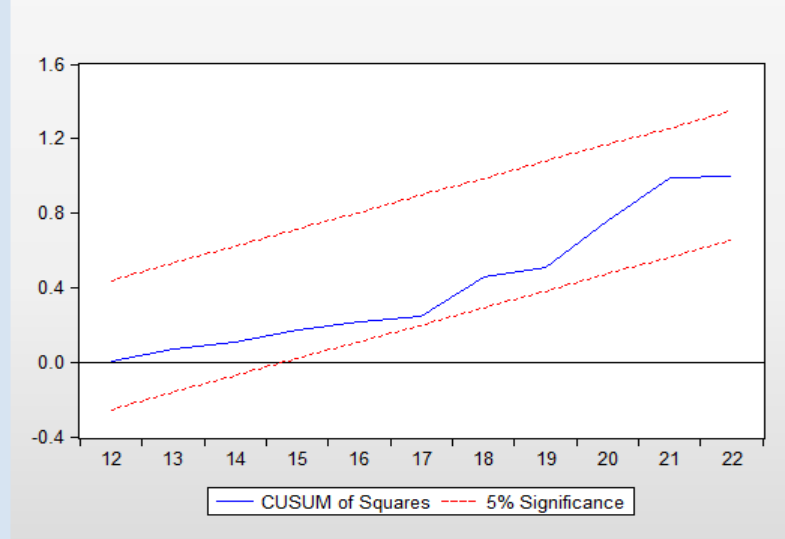


Fig. 7 CUSUM Of Squares Test Results

5 Discussion

This study examined the short-run and long-run factors affecting crime in India using an ARDL time-series framework from 1995 to 2022. The findings provide meaningful insights into how macroeconomic conditions, institutional quality and demographic pressure affect crime in the country over time.

5.1 Investment and crime

From the results, we can interpret that Gross Fixed Capital Formation (GFCF) has a negative effect on crime particularly in the long run. Higher level of investment reduces crime by providing more employment opportunities, improving infrastructure, and increasing economic inclusion and participation which reduces the incentive to engage in criminal activities.

5.2 Government expenditure and crime

Government expenditure has mixed effects on crime. In the short run, public spending shows both positive and negative impacts across different lags while in the long run it has a positive impact on crime levels in the country. This highlights that increase in government spending does not lead to lower crime rates which may happen due to inefficiencies and poor targeting which may reduce the effectiveness of public expenditure in solving social problems. Additionally, higher public spending may expand economic activity and improve crime reporting in the short run.

5.3 Inflation and crime

Inflation has a positive impact on crime, especially with a lag. Rising prices increase the cost of living pressure, which particularly affects the vulnerable population, which may act as an incentive for criminal activities.

5.4 Institutional quality and crime

The rule of law is a crucial factor that demonstrates that improvements in institutional quality significantly reduce crime, especially in the long run. A strong and efficient legal system increases public trust, which can discourage people from engaging in criminal activities.

5.5 Population growth and crime

Population growth has a negative long-run relationship with crime, pointing out that demographic changes can reduce crime over time. Rapid economic growth leads to more pressure on the labour market causing unemployment and migration in the economy.

5.6 Implications for crime debate

The significant and negative error correction term confirms a stable long-run relationship among the variables and the deviations from the equilibrium are corrected over time. This implies that shocks to crime caused by short-term economic or institutional variables do not exist indefinitely as the system gradually returns to its long-run path.

These findings challenge the belief that economic growth is sufficient to reduce crime. While investment plays a protective role, factors such as inflation, governance quality, and effectiveness of public spending significantly affect criminal activity in the country.

6 **Policy Implications**

The findings of the study provide important insights about policy formulation in India, suggesting that crime is not affected by economic growth but also by the quality of investment, effectiveness of government spending, institutional strength, macroeconomic stability and demographic pressures. The long-run crime-reducing effect of GFCF highlights the importance of investment in providing better economic opportunities and reducing crime rates in the country. Existing policies like the National Infrastructure Pipeline and PM Gati Shakti aim to expand infrastructure and promote capital formation across sectors in India. However, the effectiveness of these initiatives depends on the capability of investment to generate employment in the economy and promote inclusive growth. Hence, policymakers should focus on ensuring that capital investments are geographically targeted towards crime-prone and economically disadvantaged regions, and also promote skill development and small-scale local enterprises in those areas.

Furthermore, the results also show the mixed short-run effects and a positive long-run association of government expenditure with crime, highlighting that the size of public spending alone is insufficient to reduce crime in the country. This points out the need to improve on the composition, targeting and efficiency of government spending. Schemes like MGNREGA, PM Awas Yojna, and Smart Cities Mission target unemployment, housing problems and urban stress and are effective. However, the public spending should focus on education, affordable housing, urban services and youth employment which can play a major role in preventing crimes in the country.

Inflation is one of the major factors leading to increased crime rate with a lagged effect showing that rising prices add to the cost of living and increase economic stress and vulnerability among low-income households. In order to survive, households are forced to engage in criminal activities.The Reserve Bank of India plays a crucial role in ensuring lower economic fluctuations by following a flexible inflation targeting regime. The study suggests that inflation control should not only be viewed as a macroeconomic objective but also as a measure of social stability. Supply side interventions like improving food supply chains, storage infrastructure and market access along with fiscal measures aimed at protecting vulnerable groups can help control price volatility.

Institutional quality significantly reduces the crime rate both in the short run and the long run. A strong legal system through effective and efficient enforcement of the law can increase public trust and discourage individuals from engaging in criminal activities. India has taken several governance reforms like police modernization efforts and the e-Courts Mission Mode Project to promote transparency and reduce judicial delays. However, certain challenges like case backlogs, low conviction rates, and biased enforcement still exist, which need to be improved.

Rapid population growth, particularly in urban areas adds to stress on housing and employment opportunities which promotes crime in the country. Urban development initiatives like AMRUT and the National Urban Livelihoods Mission aim to solve employment challenges and address infrastructure gaps. To increase their effectiveness, urban planning should also provide safe public spaces, adequate lighting, reliable transport and access to basic services. They should also target rural development to reduce urban migration which will automatically reduce urban pressure.

Overall, the policy implications of this study suggest that a comprehensive and integrated development strategy is needed to reduce crime rates in India and economic growth should not be the only target. Aligning crime prevention with development planning will not only help India in achieving faster economic growth but also ensure a safer and more equitable development.

7 **Conclusion**

This research analyses the relationship between crime and macroeconomic and institutional factors in India using annual time series data from 1995 to 2022 under the Autoregressive Distributed Lag (ARDL) framework. The object was to move beyond the narrow explanations of crime and to explain how macroeconomic conditions, institutional quality, demographic structure and government effectiveness affect crime over time.

These findings provide significant evidence on how crime is not only caused by underdevelopment, but also by the role of economic growth, government, and macroeconomic stability. While investment acts as a protective shield by providing better economic opportunities and reducing crime incentives, other factors such as inflation and ineffective public spending attack social stability. The results state that the growth is uneven, unstable and poorly governed and fails to provide the expected social benefits.

The key insight from the study is the importance of institution quality in maintaining social order. Similarly, population growth is another factor that, when not managed well through inclusive urban planning and employment generation can increase the risk of crime in the country.

Methodologically, the use of the ARDL approach allowed us to analyse both short-run and long-run adjustments for a better understanding of crime in the country. Overall, the study highlights the need for crime control more in the country than focusing on economic growth rates and also suggests policy measures to promote inclusive economic development and social stability.

Statements and Declarations

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No particular grant was awarded by any funding agency, whether in the public, commercial, or not-for-profit sectors.

Competing Interests

The authors indicate that they do not have any competing interests.

Data Availability

Data presented in this paper can be found in secondary reports, such as the World Bank open data and other governmental statistical reports. The data produced in the course of the present research can be accessed by the respective author, on a reasonable request.

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References

Ansari, S., Verma, A., & Dadkhah, K. M. (2015). Crime rates in India: A trend analysis. *International Criminal Justice Review, 25*(4), 318–336. https://doi.org/10.1177/1057567715596047 (Salem State University Research Portal)

Becker, G. S. (1968). Crime and punishment: An economic approach. *Journal of Political Economy, 76*(2), 169–217. https://doi.org/10.1086/259394 (EconPapers)

Hazra, D. (2020). What does (and does not) affect crime in India? *International Journal of Social Economics, 47*(4), 503–520. https://www.emerald.com/ijse/article-abstract/47/4/503/510777/what-does-and-does-not-affect-crime-in-india

Kabiraj, P. (2022). Crime in India: A spatio-temporal analysis. *GeoJournal, 88*(2), 1283–1304. https://doi.org/10.1007/s10708-022-10684-7

Sharma, R. (2023). Determinants of crime in India: Evidence from macroeconomic indicators. *Cogent Social Sciences*. https://doi.org/10.1080/23311886.2023.2196814

Kumar, S., & Sharma, P. (2018). Socioeconomic determinants of crime in India. *Journal of Social and Economic Development*. https://doi.org/10.1007/s40953-018-0127-6

Iqbal, M., & Khan, R. (2023). Socioeconomic determinants of crime in India. *International Journal of Social Sciences and Education*. https://ijsse.salmaedusociety.com/index.php/ijsse/article/view/287

World Bank (n.d.) World Bank open data. Available at: https://data.worldbank.org/

World Population Review (2025) Safest countries in the world. Available at: https://worldpopulationreview.com/country-rankings/safest-countries-in-the-world