ISEIS

Journal of Environmental Informatics Letters 12(1) 1-8 (2024)

Journal of Environmental Informatics Letters

www.iseis.org/jeil

An Empirical Analysis of the Effectiveness of Government Fiscal Policies in Promoting Sustainable Economic Growth in India

T. Kashni[1 *]

[1] *Alliance School of Business, Alliance University, Bengaluru, Karnataka 562 106, India*

Received 31 October 2023; revised 01 February 2024; accepted 28 March 2024; published online 05 August 2024

ABSTRACT. This research scrutinizes the effectiveness of government fiscal policies in cultivating sustainable economic growth in India. Drawing on an extensive dataset spanning over a decade, the study meticulously examines crucial fiscal variables, encompassing Gross Domestic Product (GDP) growth, inflation rates (Consumer Price Index and GDP deflator), and real interest rates. Through rigorous statistical analysis, elucidate the intricate relationships between these variables, casting light on the nuanced impact of fiscal measures on the Indian economy. Findings underscore the pivotal role of fiscal policies in shaping economic trajectories. Notably, a substantial negative correlation between real interest rates and economic growth underscores the critical importance of interest rate management. Furthermore, positive correlations between GDP growth and inflation rates signify the delicate balance required for optimal economic stability. This research delves deep into the contextual nuances, considering historical events and policy changes that have influenced these relationships. This research not only contributes empirical insights to the field of finance but also furnishes actionable recommendations for policymakers. By comprehending the intricate interplay of fiscal variables, policymakers can craft more targeted and effective strategies, fostering sustainable economic growth and ensuring the long-term prosperity of the Indian economy.

Keywords: sustainable development goals (SDGs), environmental sustainability, green economy, Indian economic growth, economic impact, public health

1. Introduction

In recent decades, India has undergone dynamic economic transformations marked by growth and challenges, compelling the government to implement an array of fiscal policies (Chatterjee, 2011). To elucidate the multifaceted measures taken by the Government of India, spanning economic, legal, and administrative dimensions. These initiatives, backed by concrete examples, form the cornerstone of empirical analysis, aiming to discern the efficacy of these policies in fostering sustainable economic growth (Singh and Jose, 2023).

Economically, the Indian government has undertaken ambitious reforms and strategic interventions (UChicago, 2005; Rodrik, 2018). The introduction of the Goods and Services Tax (GST) in 2017 aimed to streamline the complex tax structure (Tandon et al., 2016), fostering a unified national market, and reducing tax evasion (Gupta, 2016). Additionally, substantial investments in infrastructure (Tripathy et al., 2016), such as the "Make in India" and "Smart Cities" initiatives, underscore a commitment to propel economic growth through modernization and industrial development (Dahlman and Utz, 2005; Sahoo and Dash, 2009).

Legally, the enactment of the Insolvency and Bankruptcy Code (IBC) in 2016 represents a pivotal stride towards a robust legal framework Abhirami and Rahul (2016). This legislation expedites the resolution of insolvency and bankruptcy cases (Nigam and Boughanmi, 2017), instilling confidence in investors and facilitating the efficient allocation of resources. Furthermore, amendments to labor laws, as seen in the introduction of the Code on Social Security and Occupational Safety, Health, and Working Conditions (Barrientos and Smith, 2007), reflect the government's proactive stance in enhancing the ease of doing business. The demonetization moves in 2016, while controversial, aimed to curb black money and promote a digital economy (Chowdhury and Hosain, 2018). These administrative measures, alongside efforts to improve the ease of obtaining licenses and permits, play a pivotal role in shaping the economic landscape (Mohan and Ray, 2019).

Against this backdrop, this research empirical analysis delves into the intricacies of these measures, examining their impact on economic growth. By scrutinizing the data within the context of specific policy interventions (Jaiswal, 2023), it aims to provide a nuanced understanding of the relationship between government fiscal policies and sustainable economic development in India.

1.1. Background and Research Context

In the realm of finance, fiscal policies play an instrumental role in steering economic stability, growth, and development (Stoica and Sudacevschi, 2019). Governments worldwide deploy fis-

* Corresponding author. Tel.: +91-9041683665.
E-mail address: tarun.kashni@alliance.edu.in (T. Kashni).

ISSN: 2663-6859 print/2663-6867 online
 doi:10.3808/jeil.202400133

cal instruments to navigate economic currents, influencing factors as diverse as investment, consumption, and inflation Chugunov and Makohon (2019). This study shines a spotlight on the intricate web of fiscal policy dynamics, with a specific lens on India—a nation marked by its economic diversity and a history of policy innovations (Aviram et al., 2020).

From the sweeping liberalization reforms of the early 1990s to its present status as one of the world's fastest-growing major economies, the nation stands as a testament to the transformative power of fiscal policies (Goyal, 2018). India's burgeoning middle class, its position as a global manufacturing and service hub (Chakravartty and Schiller, 2011), and its strategic economic alliances have positioned it as a compelling subject of financial inquiry.

To decipher the link between government fiscal policies and sustainable economic growth, confront an array of fiscal variables, each with its unique nuances (Gorodnichenko and Auerbach, 2013). Gross domestic product (GDP) growth serves as the quintessential metric of economic advancement (Church, 2016), while inflation rates, including the consumer price index (CPI) and the GDP deflator (Padhi et al., 2021), encapsulate the cost dynamics that shape purchasing power and consumption. The real interest rate, another pivotal variable (Faia and Monacelli, 2007), governs the costs of borrowing and investment, further influencing economic choices.

This research approaches hinges on the rigor of empirical analysis, endeavor to unlock the mysteries of these fiscal variables and their intricate interactions (Persson and Tabellini, 2003). A decade-long examination, bolstered by historical context, positions to draw nuanced conclusions about the efficacy of fiscal policies (Clift, 2019). Through a comprehensive investigation, this research seeks to not only provide fresh empirical insights into the finance domain (Allioui and Mourdi, 2023) but also to supply actionable guidance for policymakers. By understanding the link between fiscal variables and economic growth (Udeagha and Ngepah, 2023), aim to illuminate pathways toward a more prosperous and sustainable financial landscape for India.

1.2. Multiple Imputation under Joint MVN Model

In an era marked by economic dynamism and global interdependence, the efficacy of government fiscal policies in fostering sustainable economic growth remains a paramount research question (Chiu and Lui, 2005). While numerous studies have explored the relationships between fiscal instruments and economic development (Woolcock, 1998), the specific nuances of India's economic landscape warrant dedicated attention. This research endeavors to dissect the multifaceted dynamics of fiscal policies and their impact on economic growth within the context of India.

1.3. Literature Review

The existing literature provides comprehensive insights into the intricate dynamics of fiscal and monetary policies and their impact on economic growth in India.

The vital role of coordinated fiscal and monetary policies in India's economic reform process since the early 1990s. This Research emphasizes the challenge of sustaining accelerated growth while ensuring fiscal and financial stability (Mohan and Ray, 2019). India's recent economic success to a virtuous circle fueled by a dynamic private sector, a favorable external environment, and a well-functioning democracy. The study highlights the need for policies addressing constraints like infrastructure, agriculture, and fiscal space to sustain high growth rates (Kumar et al., 2007). A link between public expenditures, taxes, and the quality aspects of growth. Their findings suggest that increased spending on public goods, coupled with reduced subsidies for private goods, correlates with faster and more inclusive growth, emphasizing the importance of fiscal reallocation (Ramón et al., 2008). The environmental Kuznets curve, investigating the relationship between CO_2 emissions and GDP for India. The findings support an inverted U-shaped relationship in the short run, advocating for environmentally friendly regulatory mechanisms in the wake of liberalization policies (Sajeev and Kaur, 2020). Comparative analysis of fiscal policies across Indian states over two decades emphasizes their role in macroeconomic management. The study establishes the contributory role of fiscal measures in economic development, offering insights for policy formulation (Bishnoi, 2023). A growth strategy for India, focusing on export-led growth, fiscal consolidation, global competitiveness, and liberalization of the private sector. The study advocates measures like special economic zones and deregulation to foster economic growth (Bajpai, 2001). The impact of macroeconomic policies on carbon emissions in BRICS economies findings suggest that both expansionary and contractionary fiscal and monetary policies influence environmental quality, offering implications for effective policy design (Chishti et al., 2021). The importance of fiscal and monetary policy coordination for sustainable economic development highlights the need for a balanced budget and favorable monetary conditions (Chugunov et al., 2021). Government health financing in Indian states identifies the positive long-run effects of rising economic growth on government health expenditure. The importance of prioritizing healthcare and enhancing fiscal capacity for equitable health financing (Behera et al., 2019). The effects of fiscal and monetary policies on carbon dioxide emissions in BRICS economies fiscal policies, both expansionary and contractionary, play a significant role in influencing environmental quality (Antonino and Alem, 2012).

The existing literature reveals a rich tapestry of research exploring the dynamics of fiscal and monetary policies in India, offering valuable insights for policymakers. In conclusion, existing studies underscore the need for coordinated fiscal and monetary strategies to sustain economic growth, address environmental challenges, and ensure inclusive development. These findings provide a robust foundation for objectives in evaluating the impact of fiscal variables on economic growth, analyzing historical fiscal policies, and providing policy recommendations for sustainable development.

The research endeavors by Mohan and Ray (2019) and Rajiv et al. (2007), among others, have systematically explored the impact of fiscal variables on economic growth, shedding light on specific findings. Additionally, analyses of the historical context

of fiscal policies, as conducted by Sajeev and Kaur (2020), have enriched an understanding of the evolution of economic strategies. Amid the wealth of knowledge presented, a discernible gap emerges in the identification of targeted policy measures that can effectively promote sustainable economic growth. The need for context-specific recommendations, grounded in a nuanced understanding of India's economic landscape, becomes apparent.

1.4. Objectives and Hypotheses

The research objectives entail: (1) evaluate the impact of fiscal variables on economic growth; (2) analyze the historical context of fiscal policies; (3) provide policy recommendations for sustainable economic growth.

The hypotheses used in this study include: H_{01}: There is significant impact of fiscal variables on inflation rate GDP deflator; H_{02}: Historical events and policy changes have influenced the effectiveness of fiscal policies, as indicated by changes in fiscal variables, on sustainable economic growth in India; H_{03}: Empirical findings and analysis will lead to practical policy recommendations for government fiscal measures that can effectively promote long-term economic development in India.

2. Research Methodology

2.1. Research Design

This study adopts a quantitative research design to rigorously assess the effectiveness of government fiscal policies in promoting sustainable economic growth in India. The research design allows for the empirical analysis of key fiscal variables and their impact on economic indicators over a specific time frame.

2.2. Data Collection

The data used in this research is sourced from reputable institutions, including the World Bank, OECD National Accounts data files, the International Monetary Fund (IMF), and the International Financial Statistics and data files. These sources provide reliable and standardized data on critical fiscal variables, including GDP growth, inflation rates (measured by the CPI and GDP deflator), real interest rates, and total gold reserves. The data covers a comprehensive time frame from 2008 to 2022, ensuring a thorough analysis of government fiscal policies' impact on economic growth over the past decade.

2.3. Statistical Analysis Techniques

The research employs a set of statistical and econometric analysis techniques to investigate the relationships between fiscal policies and economic growth in India.

2.3.1. Descriptive Statistics

Descriptive statistics offer an initial understanding of the dataset by providing measures such as mean values, standard deviations, and correlations. These statistics help summarize and visualize the central tendencies and relationships within the data. Formulas for descriptive statistics include mean (μ), standard deviation (σ), and correlation (r):

$$\mu = \frac{\sum x}{n} \tag{1}$$

$$\sigma = \left[\frac{\sqrt{\sum (x-\mu)^2}}{n} \right] \tag{2}$$

$$r = \frac{\sum \left[(x-\mu x) \times (y-\mu y) \right]}{\left(n \times \sigma x \times \sigma y \right)} \tag{3}$$

where σ represents the standard deviation; Σ denotes summation, indicating that sum the values inside the brackets for all data points; x_i represents individual data points; μ represents the mean (average) of the data points; n represents the total number of data points; r represents the correlation of data points.

2.3.2. Multiple Regression Analysis (Econometric Modelling)

Multiple regression analysis is employed to assess the relationships between fiscal variables and economic growth. It allows for a comprehensive evaluation of the impact of GDP growth, inflation rates, real interest rates, and gold reserves on economic growth. This technique helps identify the quantitative contributions of each fiscal variable while controlling for the influence of others.

Formulas: The multiple regression model involves the following formula:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon \tag{4}$$

where Y represents the dependent variable (economic growth); X_1, X_2, X_3, and X_4 are the independent variables (GDP growth, inflation rates, real interest rates, and gold reserves); β_0 is the intercept; β_1, β_2, β_3, and β_4 are the regression coefficients; ε represents the error term.

2.3.3. Time Series Analysis

Time series analysis is applied to identify trends, seasonality, and patterns in fiscal variables over the study period. It allows for the examination of long-term changes and fluctuations in these variables, helping identify historical context and potential policy effects.

2.3.4. Correlation Analysis with Scatter Plots

Correlation analysis is conducted to determine the strength and direction of relationships between fiscal variables and economic growth. Scatter plots provide visual representations of these correlations, enhancing the interpretability of the findings. The correlation analysis aims to identify the extent to which fiscal variables are associated with economic growth.

Table 1. Economic Indicators Analysis

Variable	N (Valid)	Mean	Median	Mode	Std. Deviation
GDP (in Billion)	15	$2,237.22	$2,103.59	$1,198.90a	$645.10
GDP (PPP) Per-Capita (in Billion)	15	$1.68	$1.59	$0.99a	$0.40
Total Gold Reserve (in Billion)	15	$27.00	$24.74	$10.00a	$10.02
Growth Rate (%)	15	5.84	6.79	–5.83a	3.64
Inflation Rate GDP Deflator (%)	15	6.02	6.19	2.28a	2.76
Inflation Rate-CPI (%)	15	7.04	6.67	3.33a	2.76
Real Interest Rate (%)	15	3.79	4.20	–1.98a	2.82

Note: The letter "a" after numbers means there are other values with the same frequency as the one listed; "PPP" represents the purchasing power parity.

3. Data Analysis and Results

3.1. Descriptive Statistics

Table 1 depicts that the GDP, with a mean of $2,237.22 billion, demonstrates a robust economic output. However, the presence of a mode at $1,198.90a suggests the existence of significant variability or concentration in economic activities. The standard deviation of $645.10 reflects substantial dispersion around the mean. The per-capita GDP, averaging at $1.6766 billion, indicates a relatively high standard of living. The mode at $0.99a hints at potential disparities in income distribution. The narrow standard deviation of $0.40 implies a more uniform distribution compared to the total GDP. A mean of $27.0019 billion in gold reserves underscores a nation's economic strength and stability. The mode at $10.00a indicates a concentration of gold reserves at a specific value. The standard deviation of $10.02 suggests variability in the total gold holdings. The positive growth rate of 0.0584 signifies economic expansion, though the presence of a mode at –0.0584a raises questions about potential contraction in specific periods. The standard deviation of 0.0364 indicates moderate variability in growth rates. An inflation rate of 0.0602 suggests a modest increase in the general price level. The mode at 0.0228a may indicate a distinct inflationary pattern. The standard deviation of 0.0276 implies relatively stable inflation trends. The CPI-based inflation rate of 0.0704 indicates a higher inflationary pressure compared to the GDP deflator. The mode at 0.0333a may represent a focal point in inflation dynamics. The standard deviation of 0.0276 suggests consistent inflation variability. A positive real interest rate of 0.0379 reflects a return on investment above inflation, promoting economic growth. However, the mode at –0.0198a suggests instances of negative real interest rates, potentially impacting investment decisions. The standard deviation of 0.0282 indicates variability in real interest rate conditions.

3.2. Implications for H_{01}

Table 2 and Figure 1 depict that regression model (Model 1) with a commendable coefficient of determination (R^2 = 0.819), illuminates the substantial explanatory power encapsulated within the specified predictors, namely the growth rate and real interest rate. The adjusted R^2 (0.789) further refines this insight, accounting for potential biases and ensuring a nuanced understanding of the model's predictive efficacy. The points lie along the 45-degree line (the reference line), it indicates that the distribution of residuals is consistent with a normal distribution. The negligible standard error of the estimate (0.0127) attests to the precision and reliability of the model, indicating the minimal dispersion of observed values around the fitted regression line. The *F* change statistic (27.107) attains statistical significance at a *p*-value less than 0.001. The hypothesis that there is a significant impact of fiscal variables on the inflation rate GDP deflator is accepted.

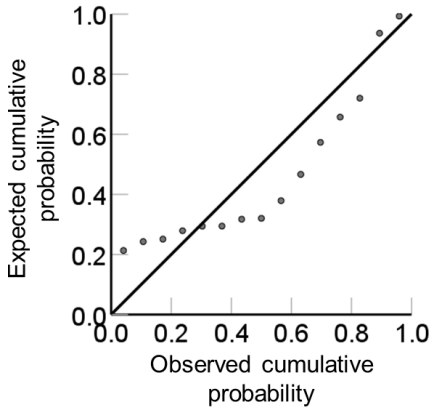

Figure 1. P-P plot of regression standardized residual for inflation rate GDP delfator.

3.3. Implications for H_{02}

Tables S1 ~ S4 and Figure 2 depict that a stagnant trend over time suggests that these variables didn't exhibit significant changes or fluctuations in the years leading up to analysis. However, it's essential to consider and explain any notable events or anomalies in the data, such as the significant decline in growth rate and interest rate in 2020. These events can have a substantial impact on economic indicators. The decline in growth rate in 2020 may be attributed to various factors, with the COVID-19 pandemic being a prominent event during that year. Economic disruptions and lockdowns due to the pandemic can lead to a sharp decline in economic growth. The decline in the interest rate could be a response to economic conditions, as central banks often reduce interest rates to stimulate economic activity during times of crisis. The fiscal variables and economic indicators, including growth rate, inflation rate GDP deflator, inflation rate-CPI, and real interest rate, have shown relatively stable and stagnant trends over the years. This stability suggests a consistent economic environment without significant fluctuations.

Table 2. Model Summary of Multiple Regression Analysis (Econometric Modelling): Growth Rate, Real Interest Rate, and Inflation Rate GDP Deflator

Model Summary[a]									
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df1	df2	Sig. F Change
1	0.905[b]	0.819	0.789	0.0127	0.819	27.107	2	12	0.000

Note: a: dependent variable: inflation rate GDP deflator; b: constant predictors, i.e., growth rate, real interest rate.

Table 3. Correlation between GDP, GDP Per Capita, and Total Gold Reserves Obtained from Correlation Analysis and Scatter Plot

Variables		GDP (Billion)	GDP (PPP) Per-Capita (Billion)	Total Gold Reserve (Billion)
GDP (Billion)	Pearson Correlation	1.000	0.999	0.786
	Sig. (2-tailed)		0.001	0.001
	N	15	15	15
GDP (PPP) Per-Capita (Billion)	Pearson Correlation	0.999	1.000	0.782
	Sig. (2-tailed)	0.000		0.001
	N	15	15	15
Total Gold Reserve (Billion)	Pearson Correlation	0.786	0.782	1.000
	Sig. (2-tailed)	0.001	0.001	
	N	15	15	15

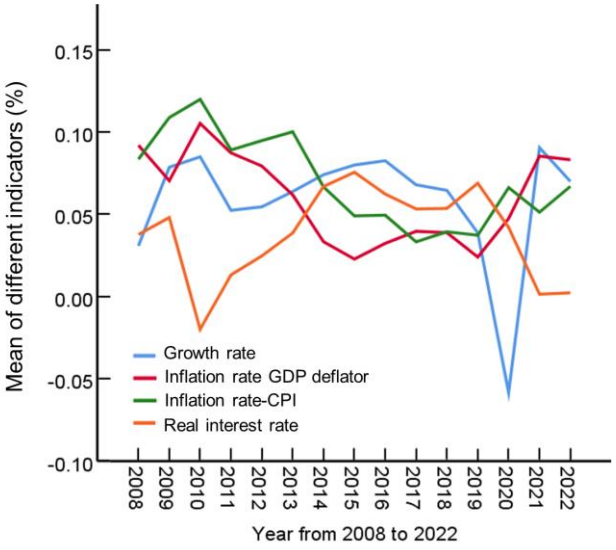

Figure 2. Yearly graph of growth rate, inflation, CPI, and real rate of ınterest by index.

In 2020, there was a significant decline in the growth rate, likely because of the global economic disruption caused by the COVID-19 pandemic. However, in 2021, there was a significant recovery and a peak in the growth rate, indicating a swift rebound in economic activity. Real interest rates saw their highest point in 2015, possibly due to changes in monetary policy or market conditions. Conversely, in 2021, there was a substantial decline, which may have been influenced by policy measures to stimulate economic growth. Inflation rate (GDP deflator) was at its highest in 2010, reflecting inflationary pressures in the economy. In contrast, it reached its lowest point in 2015, indicating a period of lower inflation. These fluctuations may be attributed to changing economic conditions and policy adjustments. CPI Inflation was highest in 2010, suggesting increased consumer prices during that period. However, it reached its lowest point in 2017, indicating relative price stability. Policy measures, consumer behavior, and market dynamics likely contributed to these fluctuations.

The results from the time series analysis support the hypothesis (H_{02}) that historical events and policy changes have influenced the effectiveness of fiscal policies in India. The fluctuations in fiscal variables demonstrate the need for dynamic and adaptive fiscal policies that respond to changing economic conditions and external shocks. Effective policy responses, as evidenced by the recovery in 2021, are essential for ensuring sustainable economic growth and stability. Therefore, historical events and policy changes have influenced the effectiveness of fiscal policies in India, is supported by the findings from the time series analysis.

3.4. Implications for H_{03}

Tables 3 and 4, as well as Figure S1 depict that the robust positive correlation (0.999) between GDP and GDP (PPP) per-capita is statistically significant (p = 0.001). This implies a synchronous movement, indicating that countries with higher GDPs also tend to exhibit elevated GDP per capita. The hypothesis is accepted in this regard. Figure S2 shows that the strong positive correlation (0.786) between GDP and total gold reserve is statistically significant (p = 0.001). This suggests that an up-swing in GDP is associated with an augmentation in total gold reserves. The hypothesis is accepted here as well. Figure S3 depicts that the weak negative correlation (−0.118) between growth rate and real interest rate lacks statistical significance (p = 0.675). Though a minor decrease in economic growth with an increase in real interest rates is observed, the relationship is not robust. The hypothesis is accepted tentatively in this context. Figure S4 indicates that the weak positive correlation (0.043) between growth rate and inflation rate-CPI is statistically insignificant (p = 0.879). Similarly, the hypothesis is accepted cautiously,

Table 4. Correlation between Growth Rate, Real Rate of Interest, Inflation Rate-CPI, and Inflation Rate GDP Deflator Obtained from Correlation Analysis and Scatter Plot

Variables		Growth Rate	Inflation Rate GDP Deflator	Inflation Rate-CPI	Real Interest Rate
Growth Rate	Pearson Correlation	1.000	0.096	0.043	–0.118
	Sig. (2-tailed)		0.734	0.879	0.675
	N	15	15	15	15
Inflation Rate GDP Deflator	Pearson Correlation	0.096	1	0.718	–0.905
	Sig. (2-tailed)	0.734		0.003	0.000
	N	15	15	15	15
Inflation Rate-CPI	Pearson Correlation	0.043	0.718	1	–0.545
	Sig. (2-tailed)	0.879	0.003		0.036
	N	15	15	15	15
Real Interest Rate	Pearson Correlation	–0.118	–0.905	–0.545	1
	Sig. (2-tailed)	0.675	0.000	0.036	
	N	15	15	15	15

acknowledging the minimal positive relationship between economic growth and consumer price inflation. Figure S5 is the substantial negative correlation (−0.905) between the real interest rate and inflation rate, which is statistically significant (p = 0.00). Figure S6 shows the statistically significant (p = 0.036) correlated relationship (–0.545) between the GDP deflator and real interest rate. This indicates that as real interest rates increase, inflation tends to decrease. The hypothesis is accepted in these instances, underscoring the importance of monitoring these factors for maintaining price stability. The correlation analysis performed between various fiscal variables, including growth rate, inflation rate GDP deflator, inflation rate-CPI, and real interest rate, does not reveal statistically significant relationships among these variables. This indicates that there is significant empirical evidence to suggest a direct and statistically significant relationship between these fiscal variables and practical policy recommendations for government fiscal measures that can effectively promote long-term economic development in India. As a result, the hypothesis H_{03} is accepted by the correlation analysis.

4. Discussion

Comprehensive analysis reveals intricate relationships between fiscal variables, offering a nuanced understanding of India's economic landscape. Diverse dimensions, including GDP metrics, gold reserves, growth rates, inflationary trends, and real interest rates, expose critical patterns and challenges, guiding the discourse toward nuanced policy implications.

The GDP, at an impressive mean of $2,237.22 billion, signifies robust economic output. However, the presence of a mode at $1,198.90 indicates a concentration in economic activities, prompting exploration into potential variations. The considerable standard deviation of $645.10 underscores the need for closer examination of factors contributing to this dispersion. Despite per-capita GDP averaging at $1.68 billion, suggesting a high standard of living, the mode at $0.99 hints at potential income distribution disparities, necessitating targeted policies for more inclusive growth.

A mean of $27.00 billion in gold reserves highlights economic strength. However, the mode at $10.00a suggests concentration, necessitating exploration of contributing factors. The standard deviation of $10.02 suggests variability in total gold holdings, prompting an examination of economic implications.

The positive growth rate of 0.0584 signifies economic expansion, yet the mode at −0.0583a raises questions about potential contraction. Exploration of circumstances leading to this contraction is imperative for crafting resilient fiscal policies. The moderate standard deviation of 0.0364 invites a nuanced understanding of factors contributing to variability in growth rates.

An inflation rate of 0.0602 suggests a modest increase in the general price level, with the mode at 0.0228a indicating a distinct inflationary pattern. The relatively stable inflation trends, evidenced by the standard deviation of 0.0276, necessitate thorough examination of the drivers behind these patterns. Moreover, the CPI-based inflation rate of 0.0704 underscores the importance of aligning fiscal measures with consumer price dynamics for effective policy formulation.

A positive real interest rate of 0.0379 reflects a return on investment above inflation, fostering economic growth. However, the mode at –0.0198a suggests instances of negative real interest rates, potentially impacting investment decisions. Meticulous investigation into factors influencing these negative rates is essential for maintaining a conducive investment climate. The standard deviation of 0.0282 further emphasizes the need for a nuanced understanding of the conditions governing real interest rates.

A commendable coefficient of determination (R^2 = 0.819) underscores the substantial explanatory power of specified predictors—growth rate and real interest rate. The adjusted value of R^2 (0.789) refines this insight, accounting for potential biases. The negligible Standard error of the estimate (0.01268) attests to the precision and reliability of the model. The F change statistic (27.107), reaching statistical significance at a p-value less than 0.001, supports the hypothesis of a significant impact of fiscal variables on the inflation rate GDP deflator.

Time series analysis reveals a stagnant trend, indicating re-

lative stability in fiscal variables. However, notable events, like the decline in growth rate and interest rate in 2020, require thorough exploration. Acknowledging and comprehensively explaining these anomalies is crucial for an in-depth understanding of historical dynamics.

Intricate relationships among fiscal variables. The positive correlation (0.999) between GDP and GDP (PPP) per-capita signifies synchronous movements, emphasizing the need for holistic economic development. While a weak negative correlation (−0.118) between Growth rate and real interest rate lacks statistical significance, substantial negative correlations (−0.905 and −0.545) between Real interest rate and inflation rates underscore the importance of monitoring these factors for maintaining price stability.

5. Conclusions

In the symphony of empirical inquiry into India's fiscal realm, findings resonate with the nuances of economic dynamics. Rigorously discerned substantial correlations and patterns, affirming the pivotal role of fiscal variables in shaping the nation's economic trajectory. The tapestry of discoveries, woven from intricate analyses spanning GDP metrics, gold reserves, growth rates, and inflationary trends, presents a compelling narrative of India's fiscal narrative. This scholarly odyssey navigates not only the peaks but also the valleys of limitations inherent in empirical research. The acknowledgement of constraints—be they in the form of data limitations, temporal considerations, or inherent assumptions—adds a layer of humility to conclusions. These limitations, while tempering the expanse of assertions, serve as beacons guiding future explorations. Concrete findings in the correlation analyses affirm hypotheses and propel us into the realm of policy recommendations. The synchronous movement between GDP and GDP (PPP) per-capita accentuates the importance of holistic economic development. Simultaneously, the delicate interplay between real interest rates and inflation rates underscores the nuanced policy considerations required for maintaining stability. The canvas of conclusions extends beyond the academic frame. The anomalies of 2020 echo a clarion call for adaptive fiscal policies, responsive to historical dynamics and external shocks. Methodological reflections intricately interwoven with findings bolster the scholarly integrity of work. The precision in executing regression models, time series analyses, and correlation evaluations serve not only as a testament to the rigor of inquiry but also as a guide for methodological considerations in future research endeavors.

The supplementary datasets provided beckon future scholars to delve deeper into the labyrinth we have begun to unravel, seeking a more nuanced understanding of India's fiscal narrative.

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