



Economic Insights Beyond GDP: ICOR

For Prelims: [Gross Domestic Product](#), Incremental Capital Output Ratio, Harrod-Domar model, [Unified Payments Interface](#), [National Payments Corporation of India](#), [Inflation](#), [Informal sector](#).

For Mains: Factors Behind Declining ICOR in India, Limitations of Using ICOR as an Economic Indicator

Source: [ET](#)

Why in News?

India's latest [Gross Domestic Product \(GDP\)](#) data is making headlines with a remarkable **7.8% growth during the April to June quarter of 2023**, solidifying its position as one of the **world's fastest-growing major economies**.

- However, India's economic narrative extends beyond the numerical figures. [Incremental Capital Output Ratio \(ICOR\)](#) is also gaining traction, offering insights into **capital efficiency and resource allocation**.

What is GDP and ICOR?

- **GDP** is one of the most widely used indicators of **economic performance and development**. It measures the **total value of goods and services produced within a country in a given period of time**.
 - While GDP has its merits, it **does not offer a complete view of economic well-being**. It overlooks factors like **efficiency, income distribution, and institutional quality**, which are essential for sustainable growth.
 - Merely increasing investment may inflate GDP, but true [sustainable growth](#) relies on **productivity enhancements**.
 - Therefore, economists and policymakers often use other complementary indicators to assess the **efficiency, sustainability, and quality of economic growth**.
- One such indicator is the **ICOR**; it has evolved from the **Harrod-Domar Growth Theory** and examines the **relationship between fresh investments and economic growth**, indicating how much additional capital is required to generate a **1% higher output**.
 - **A lower ICOR signifies greater efficiency** and productive use of capital.
 - According to an **SBI report**, India is experiencing an upward trend in savings and investments, which is accompanied by a simultaneous **decrease in the ICOR**.
 - The **current ICOR in India stands at 3.5 (as of FY22)**, however, this was 7.5 in FY12.

Note: The **Harrod-Domar model**, created by economists **Roy Harrod and Evsey Domar**, asserts that **economic growth relies on the availability of capital for investment**, and the rate of capital accumulation is directly linked to the rate of savings.

What are the Factors Behind Declining ICOR in India?

- **Economic and Technical Innovation:** India has been a hotbed for **cost-conscious innovation**, where companies develop **cost-effective solutions** that require minimal capital investment and minimum wear and tear replacement.
 - For example, companies like **Tata Motors developed the Nano car**, a low-cost alternative for the **middle-class population**, showcasing how frugal innovation can lead to lower ICORs.
- **Economic Diversification:** India's shift towards a **more services-oriented and technology-intensive economy** reduces the capital intensity of economic activities.
 - Services, such as **IT and software development**, typically require less capital per unit of output compared to traditional manufacturing.
 - **Unified Payments Interface (UPI)** developed by **National Payments Corporation of India (NPCI)** has become a **cost-effective and efficient digital payment system** that has accelerated **financial inclusion** and made transactions more accessible to a broader population.
 - However, it's essential to exercise caution and **maintain a balanced approach by also nurturing the manufacturing sector.**
- **Decentralized Manufacturing:** The rise of **decentralized and distributed manufacturing using 3D printing** and other technologies reduces the need for centralized factories and heavy capital investment in large-scale production facilities.
 - **India's first 3D-printed post office** has been inaugurated in Bengaluru.
- **AI and Machine Learning Integration:** **Artificial Intelligence** and **Machine learning (ML)** are playing a pivotal role in lowering the ICOR in India by enhancing efficiency and productivity across various sectors.
 - For instance, in healthcare, **AI-driven diagnostics reduce reliance on costly equipment**, lowering the healthcare sector's ICOR.
 - In manufacturing, **ML-based predictive maintenance** decreases downtime and extends machinery life, reducing the need for frequent capital replacements.
 - Also, **AI-enabled precision farming in agriculture** enhances resource utilization, resulting in higher crop yields with reduced capital expenditure.

What are the Limitations of Using ICOR as an Economic Indicator?

- **Informal Economy Impact:** India's informal economy is **vast and dynamic**, but it **largely operates outside the scope of formal data collection.**
 - The informal sector's interactions with the formal sector can be complex and challenging to capture accurately in ICOR calculations.
 - As a result, **ICOR may not fully account for the informal sector's contribution to economic growth** and capital efficiency.
- **Price Distortions:** ICOR is based on **nominal values of investment and output**, which are affected by price changes over time.
 - Therefore, **inflation or deflation may distort the true relationship between investment and output**, leading to misleading results of ICOR.
 - Also, obtaining reliable ICOR calculations can be hindered by the availability and accuracy of data.
- **Infrastructure Bottlenecks:** Despite a declining ICOR, **India continues to grapple with infrastructure bottlenecks.**
 - This could mean that while **new capital investments are relatively efficient**, existing infrastructure constraints could hinder the overall economic efficiency and productivity.
- **Regional Disparities:** Regional variations in India can significantly affect the **interpretation of ICOR.** A declining national ICOR might **hide disparities where some regions benefit from more efficient capital use while others lag behind.**
- **Natural Resource Depletion:** A lower ICOR **may not reflect the depletion of natural resources**, which can lead to long-term sustainability challenges.
 - Capital-intensive industries that exploit natural resources might show a declining ICOR while harming the environment.

How can ICOR be Improved?

- **Regional and Sectoral Analysis:** Instead of only national-level analysis, **there is a need to conduct regional and sectoral assessments of ICOR.**
 - This allows for a more **granular understanding of where capital investments are most efficient and where improvements are needed.** Targeted policies can then be designed accordingly.
- **Blockchain for Transparent Data Recording:** Utilizing **blockchain technology** to ensure **transparent and tamper-proof recording of economic data**, can reduce the risk of data manipulation or inaccuracies. This can enhance the reliability of ICOR calculations.
- **Public-Private Collaboration:** Fostering collaboration between **public and private sectors to jointly address capital allocation inefficiencies.**
 - Public-private partnerships can **leverage resources, expertise, and innovation** for more efficient infrastructure and development projects.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims:

Q. Increase in absolute and per capita real GNP do not connote a higher level of economic development, if: (2018)

- (a) Industrial output fails to keep pace with agricultural output.
- (b) Agricultural output fails to keep pace with industrial output.
- (c) Poverty and unemployment increase.
- (d) Imports grow faster than exports.

Ans: (c)

Q. In a given year in India, official poverty lines are higher in some States than in others because: (2019)

- (a) Poverty rates vary from State to State
- (b) Price levels vary from State to State
- (c) Gross State Product varies from State to State
- (d) Quality of public distribution varies from State to State

Ans: (b)

Mains

Q1. Define potential GDP and explain its determinants. What are the factors that have been inhibiting India from realizing its potential GDP? **(2020)**

Q2. Explain the difference between computing methodology of India's Gross Domestic Product (GDP) before the year 2015 and after the year 2015. **(2021)**