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)**