



सत्यमेव जयते  
Ministry of Education  
Government of India



12<sup>th</sup> Dec 2022 to 19<sup>th</sup> Dec 2022

# Total Factor Productivity and Macroeconomic Development: Issues and Implications

(Virtual Event)

Department of Humanities and Social Sciences  
Indian Institute of Technology Tirupati

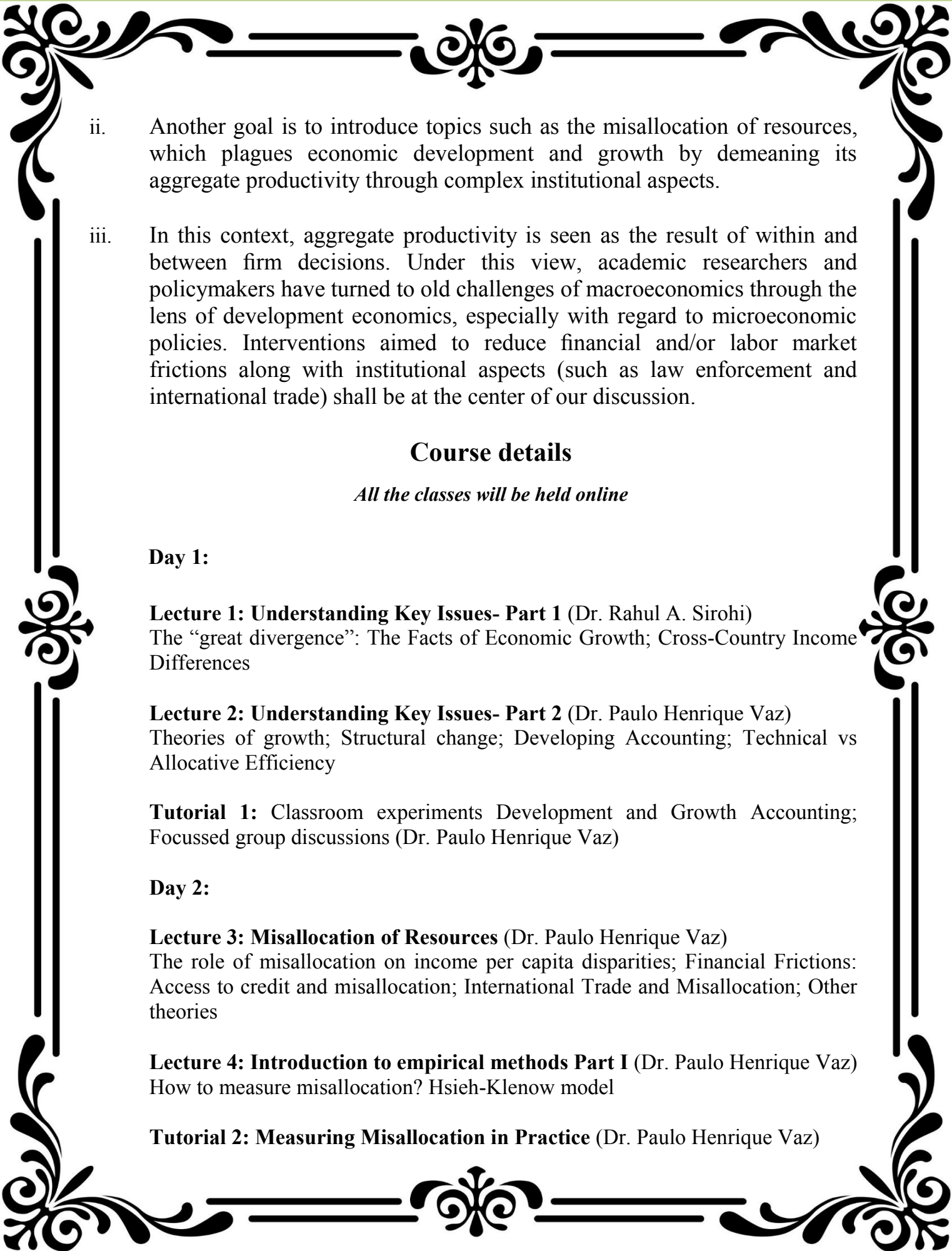
## Overview

One of the most pressing concerns of development economics is the persistence of global inequalities i.e. inequalities across countries. Measured in terms of per capita income, although the gaps have declined over the last quarter of the 20th century, the changes have not been large enough to make a large dent in the global economic hierarchy and as a result, enormous differences in standards of living continue to exist between various economies in the world. This reality stands in contrast to traditional wisdom in economics. In the literature in macro-development that emerged in the post-War period, for example, there was a sense of optimism in what economies across the world could achieve and therefore differences in income levels across economies were viewed as being temporary phenomena. But more recently economists have come to perceive the possibility that such differences may be persistent and as a result, there has been a flurry of studies aiming to explain and understand the nature of these trends.

One of the most influential sets of studies, which is also the focus of this course, looks at how differences in productivity levels across economies can lead to the kind of divergences that have been visible over the last century or so. This emerging literature makes a very simple point. It explains the global trends that we see as a result of the fact that developed economies make better use of their available inputs not only because they have access to the most advanced technologies, but also because they have the requisite institutional environment to allocate resources efficiently. The interplay between firms, institutions, state policies, and technological development are thus important factors underlying the growth and development of modern economies. This course aims to introduce students to this emerging line of analysis.

## Objectives

- i. This course aims to discuss the role played by total factor productivity (TFP, aggregate, and at the firm-level) in current macroeconomics debates. First, we shall cover seminal papers focused on the relationship between aggregate TFP and income per capita level and growth, paving the road to get into the disaggregate type of analysis.

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- ii. Another goal is to introduce topics such as the misallocation of resources, which plagues economic development and growth by demeaning its aggregate productivity through complex institutional aspects.
  - iii. In this context, aggregate productivity is seen as the result of within and between firm decisions. Under this view, academic researchers and policymakers have turned to old challenges of macroeconomics through the lens of development economics, especially with regard to microeconomic policies. Interventions aimed to reduce financial and/or labor market frictions along with institutional aspects (such as law enforcement and international trade) shall be at the center of our discussion.

### **Course details**

*All the classes will be held online*

#### **Day 1:**

##### **Lecture 1: Understanding Key Issues- Part 1** (Dr. Rahul A. Sirohi)

The “great divergence”: The Facts of Economic Growth; Cross-Country Income Differences

##### **Lecture 2: Understanding Key Issues- Part 2** (Dr. Paulo Henrique Vaz)

Theories of growth; Structural change; Developing Accounting; Technical vs Allocative Efficiency

**Tutorial 1:** Classroom experiments Development and Growth Accounting; Focussed group discussions (Dr. Paulo Henrique Vaz)

#### **Day 2:**

##### **Lecture 3: Misallocation of Resources** (Dr. Paulo Henrique Vaz)

The role of misallocation on income per capita disparities; Financial Frictions: Access to credit and misallocation; International Trade and Misallocation; Other theories

##### **Lecture 4: Introduction to empirical methods Part I** (Dr. Paulo Henrique Vaz)

How to measure misallocation? Hsieh-Klenow model

**Tutorial 2: Measuring Misallocation in Practice** (Dr. Paulo Henrique Vaz)

**Day 3:**

**Lecture 5: Measuring Productivity at the firm-level** (Dr. Paulo Henrique Vaz)  
What determines productivity? Understanding TFP through microdata; Productivity Estimators: Options and Robustness;

**Lecture 6: Macro meets IO** (Dr. Paulo Henrique Vaz)  
Semi-parametric models to estimate productivity accounting for endogenous decisions of inputs and exit; Parametric and non-parametric techniques: Stochastic Frontier vs Data Envelopment Analysis. Applications to development economics

**Tutorial 3: Estimating Productivity at the Firm Level** (Dr. Paulo Henrique Vaz)

**Day 4:**

**Lecture 7: Causal Inference on Firm Dynamics Part 1** (Dr. Paulo Henrique Vaz)  
Unveiling the Determinants of Measured Productivity. Tackling Endogeneity through RCTs or Natural Experiments; Introduction to commonly used identification strategies (Differences-in-Differences and Regression Discontinuity)

**Lecture 8: Causal Inference on Firm Dynamics Part 2** (Dr. Paulo Henrique Vaz)  
Applications of causal inference on firms and development. On the effect of financial frictions, trade, training, and so on.

**Tutorial 4: Estimating Causal Inference Models** (Dr. Paulo Henrique Vaz)

**Day 5:**

**Lecture 9: Aggregate Productivity: Other perspectives Part 1** (Dr. Paulo Henrique Vaz)

Structural Transformation; TFP and Human Capital: Possible Interactions

**Lecture 10: Aggregate Productivity: Other perspectives Part 2** (Dr. Paulo Henrique Vaz)

Production Networks; Granular Economies; Propagation of production shocks; Micro- Macro linkages; Empirical models

**Tutorial 5: Getting Network Features from Data**

## Day 6:

### **Lecture 11 : Project Discussion** (Dr. Paulo Henrique Vaz)

Presentations by participants of assignments with question and answer sessions and discussion

**Tutorial 6:** Focussed group discussion and final remarks (Dr. Paulo Henrique Vaz)

### **Mode of evaluation**

- There will be no examination. Evaluation will be done based on assessment of regular quizzes, data related assignments; presentations and group discussions.

### **Who can attend**

- The course will be aimed at final year MA students and first year doctoral students in economics.
- Faculty from reputed institutions.

### **Teaching Faculty:**

**Dr. Paulo Henrique Vaz** is an Assistant Professor and Vice-head of the Graduate Program in Economics at the Federal University of Pernambuco (UFPE), Brazil, and also a founding member of the Impact Evaluation Group for Public Economic Policies- GAPPE. His research focuses on Firms, Economic Development, and Applied Econometrics.



### **Course Coordinator:**

**Dr. Rahul A. Sirohi**  
Assistant Professor (Economics)  
Department of Humanities and Social Science  
Indian Institute of Technology  
Tirupati District, Andhra Pradesh  
Email: rahul.sirohi@iittp.ac.in  
Contact Number: 9100760099



### **Registration**

The participants fee for the taking this online course as follows

Students : Rs. 1000/-

Faculty Members : Rs. 1500/-

Foreign Applicants: 40 USD

### **Deadline:**

Interested Candidates kindly fill the Google form

<https://docs.google.com/forms/d/e/1FAIpQLSebXEYk7qNAnws99OE9NG7Ei3T-BZE82yCUY4ISxeO9OD6gEg/viewform>

Last Date for receipt of Application: 1<sup>st</sup> of December 2022

Shortlisted participants will be intimated by their registered E-mail Address