

# **ENDOGENOUS STRUCTURAL TRANSFORMATION IN ECONOMIC DEVELOPMENT**

**JUSTIN YIFU LIN & HAIPENG XING**

**PEKING UNIVERSITY & STATE UNIVERSITY OF NEW YORK,  
STONY BROOK**

# Structural transformation in economic growth

- A sustained income growth is a modern phenomenon, which arises only after the 18<sup>th</sup> century and resulted in the great divergence in the world (Pomeranz 2001)
- To achieve dynamic income growth is a dream for every country, especially for developing countries, but only a few developing countries were able to realize this dream
- Kuznet (1966) identifies that the modern economic growth in a country is accompanied, in addition to the increases of population and per capita income, by switching structural transformation in
  - Technology
  - Sector composition of industries
  - Ratio of rural urban population
  - Hard infrastructure
  - Social, economic, legal and political institutions
  - Preference, value and identity

# Literature and motivation

- Historical, empirical studies on structural transformation abound
  - The catching up process among European countries after the Industrial Revolution (Gerschenkorn, 1962)
  - The Flying Geese pattern in Japan's and East Asian economic development (Akamatsu, 1962)
  - Rapid Structural changes in dynamic growing economies (Commission on Growth and Development, 2008)
  - African Transformation Report (ACET 2014)
  - Asian Transformations (Deepak Nayyar 2019)
- Theoretical literature focuses mostly on technological innovation or changing sector composition with **a given structure**
- The paper proposes a novel method to model **the structural transformation in a market economy** by combining optimal control and optimal switching to study the competitive equilibrium of resource allocation under a given structure and the structural equilibrium when the condition for structural transformation arises

# Attributes of Economic Structure

The overall structure and its constituent structure has the following three attributes:

- **Structurality** refers to the organic relationships of all the economic and noneconomic structures, each with specific characteristics and functions, in the overall structure of an economy or society.
- **Durationality** means that the overall structure and each of its constituent structures in an economy will not change instantaneously and will have different levels of stability.
- **Transformality** means that a constituent structure or even the overall structure is not constant forever; it can transform into another structure under certain conditions during the process of economic development.