Agriculture, Manufacturing, and Services: Key Concepts of Structural Transformation

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1 Introduction

Structural Transformation (ST)

- ST is the reallocation of economic activity across broad sectors.

- Kuznets listed ST as a key feature of modern economic growth.

- Typical sector split

  - agriculture: tangible edible output;
  - manufacturing: tangible non-edible output (exception processed food);
  - services: intangible output.

- ST has important aggregate implications when sectoral composition matters: labor market outcomes, productivity, skill premium, urbanization etc.

2 The Stylized Facts of ST

2.1 How to Measure ST

- The three most common measures of sectoral economic activity are: employment, value added, and final expenditures.

- Employment shares are calculated either by using workers or hours worked by sector, depending on data availability.

- Value added shares and final consumption expenditure shares are typically expressed in current prices ("nominal shares").

- There are at least two reasons for differences among these measures:
  - investment and trade imply that production and consumption measures differ;
 - value added is a distinct concept from final expenditure.

Background: Some Basic Concepts

- **Industries:** collections of establishments that produce similar goods or services.

  - Establishments produce (gross) output from capital, labor and intermediate goods.
  - Establishments sell output to final uses, other establishments, or themselves.

- **Sectors:** aggregates of industries with similar characteristics.

- **Value added:** value of gross output minus value of intermediate inputs.

- **Final expenditures:** gross output delivered to final uses.

  - Final expenditure are a composite of value added from different sectors.
  - Total requirement matrix gives the composition
    (like in Herrendorf, Rogerson & Valentinyi, AER, 2013).

Sectoral Shares in Rich Countries

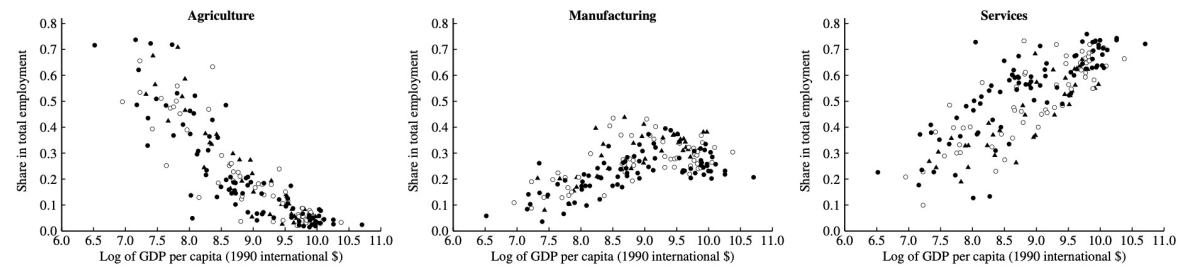**Sectoral Employment Shares – Currently Rich Countries 1800–2000**
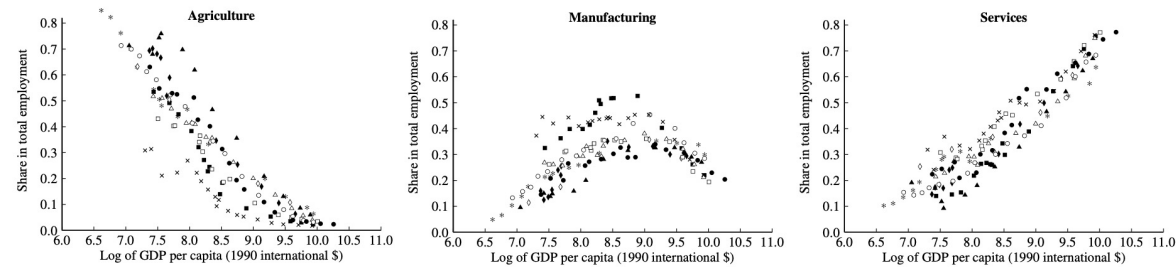
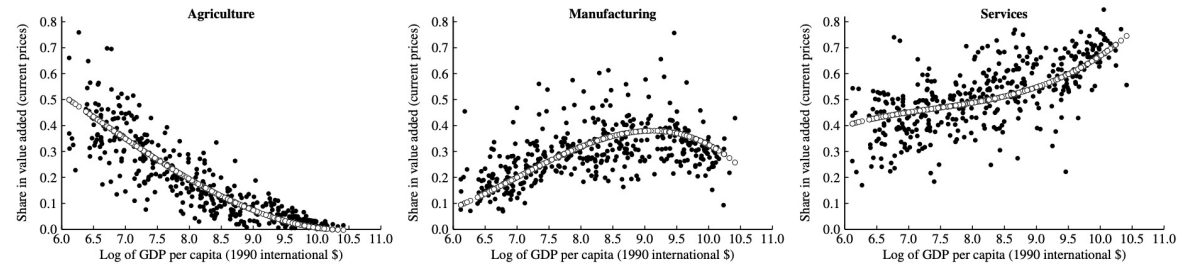**Sectoral Value-Added Shares – Currently Rich Countries 1800–2000**
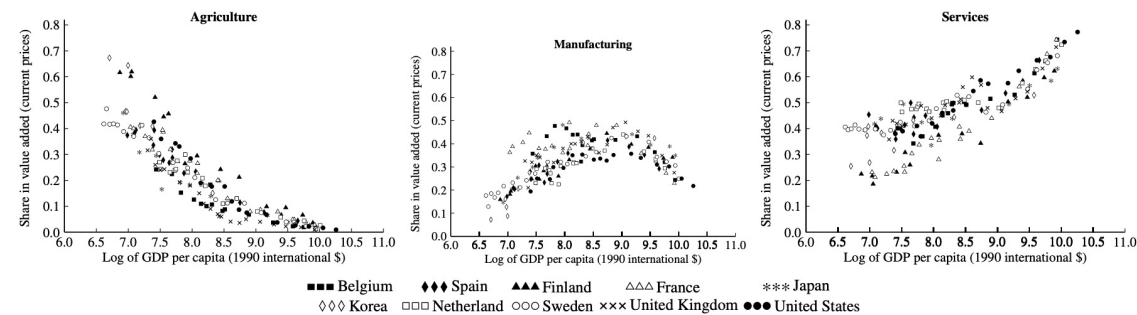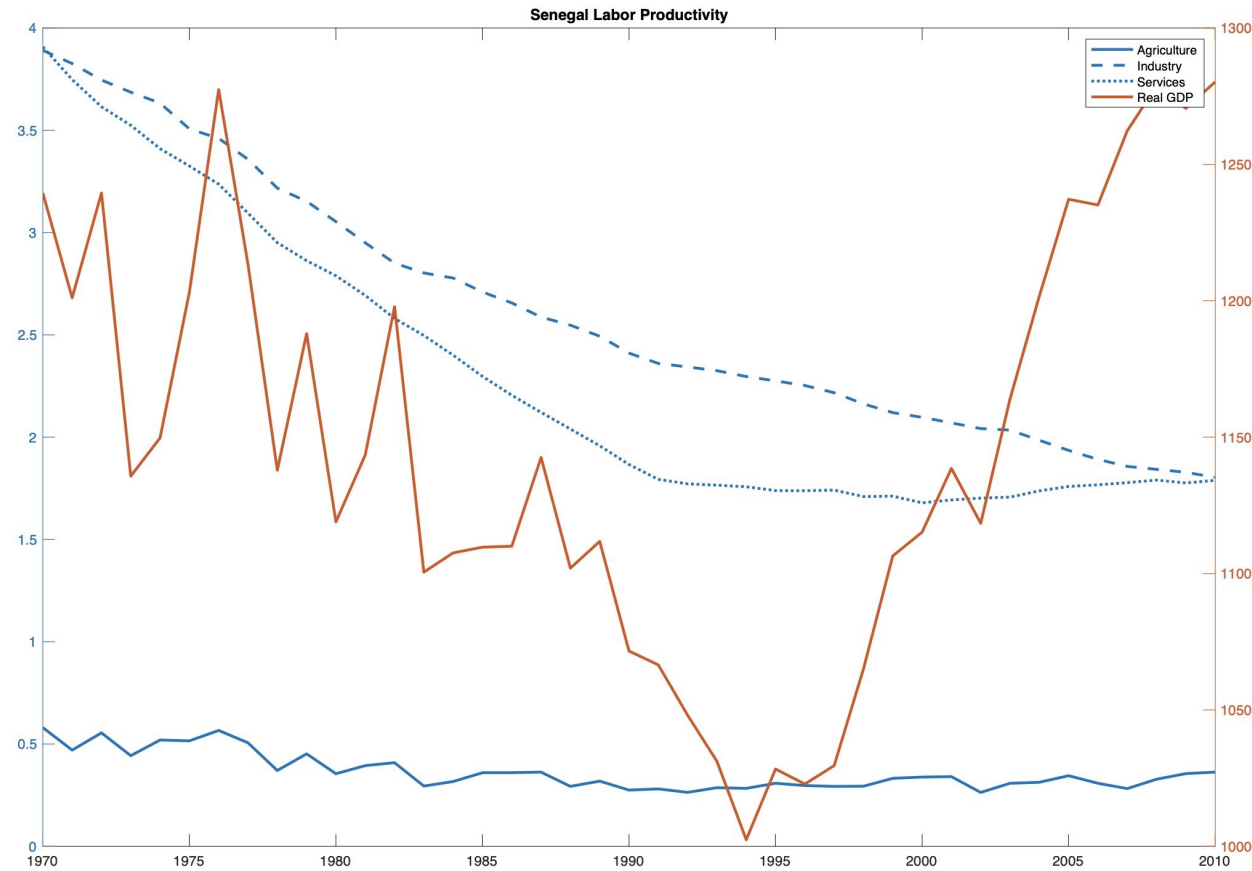
Sectoral Shares Worldwide

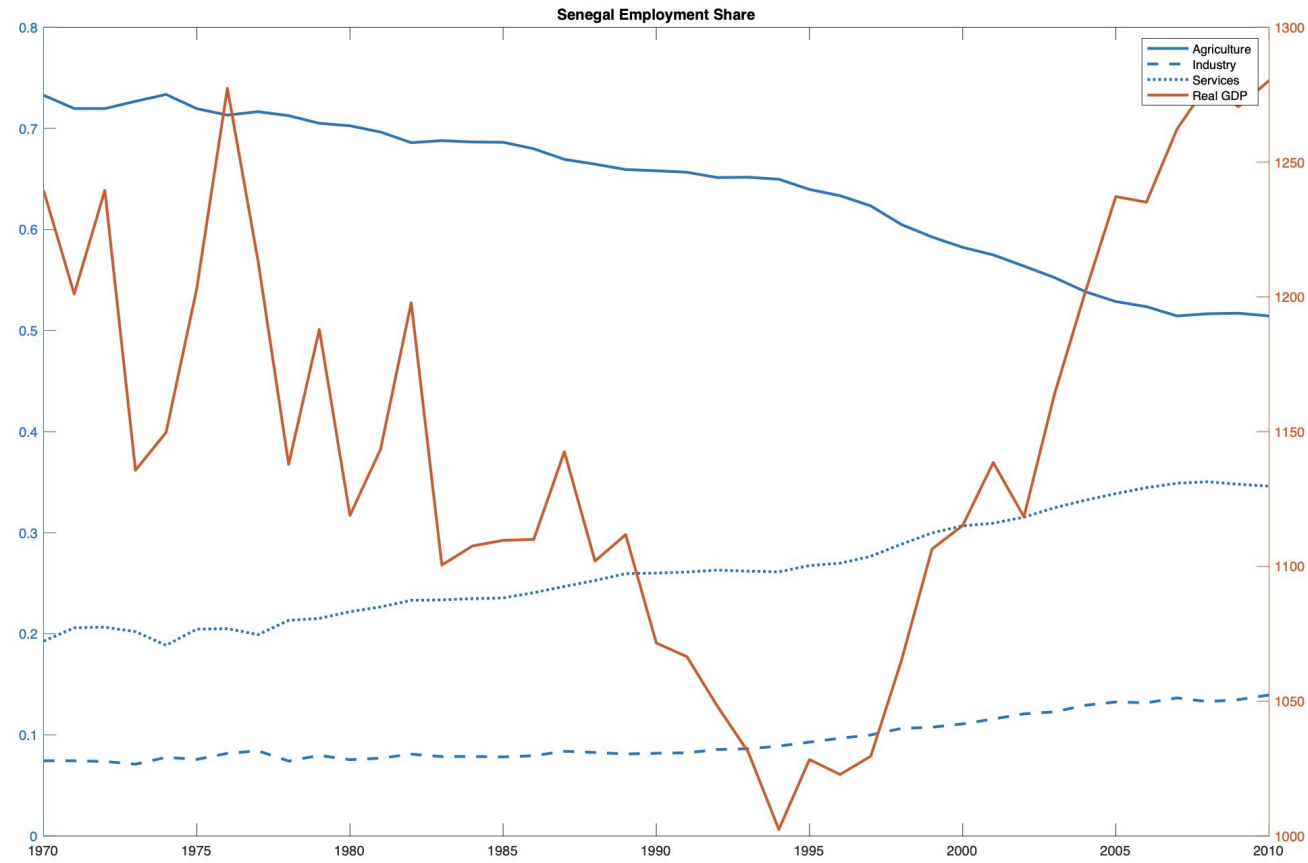**Sectoral Employment Shares – Cross Sections of WDI 1980–2000**

Sectoral Value-Added Shares – Cross Sections of UN National Accounts 1975–2005
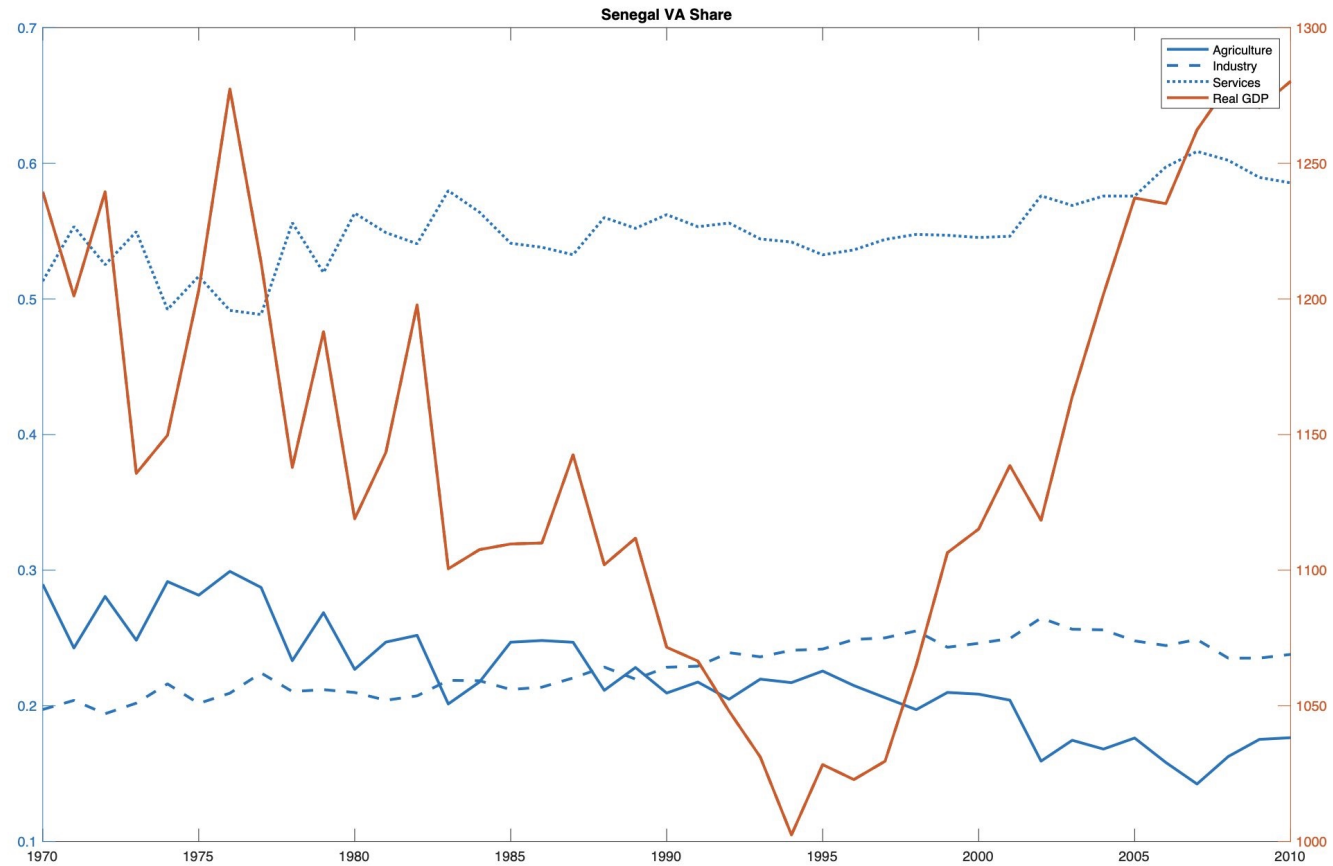
Labor Productivity in Senegal

Employment Share in Senegal

Value-Added Share in Senegal

Summary: Stylized Facts

- When GDP per capita increases, the shares of employment and nominal value added

  - decrease in agriculture;
  - increase in services;
  - follow a hump shape in manufacturing.

- For low levels of development the value added share in agriculture is considerably lower than the employment share (i.e., agriculture is relatively unproductive).

- The employment share and the nominal value added share for the service sector are bounded away from zero even at very low levels of development.

- For a log of GDP per capita around 9

  - the increase in the nominal value added share in services accelerates;
  - the nominal value added share for manufacturing peaks.