

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

# The main indicators of economic development

Growth, poverty, inequalities, and development

Arthur Silve

Agence Française de Développement  
Paris School of Economics

2013

# Sustainable and inclusive growth

The role of public policies

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

MACRO 1: introductory workshop to the main  
macroeconomic concepts

- countries eligibility to budget support
  - identify the macroeconomic vulnerabilities
  - assess the adequacy of implemented policies
- dialogue with the authorities – stabilization policies

MACRO 2: follow-up workshop

- dialogue with the authorities
  - stabilization policies (going further)
  - development policies
- going further on the concepts discussed  
(redistribution, political economy)

# Development, a multidimensional concept

The main  
indicators of  
economic  
development

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Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators

## Development: Sen 1999

Broadening choices and reducing deprivations:

- hunger, illiteracy, health problems, insecurity, humiliation, access to basic infrastructures, political rights and freedom of speech

## Development: World Bank

Qualitative changes and restructuring of a country's economy, in conjunction with social and technological progress. Largely linked to economic growth.

# Development, a multidimensional concept

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators

## Three main dimensions of development

- economic
  - standard of living – households purchasing power
  - distribution of wealth – poverty and inequalities
- social
  - health, education
  - social protection
- political
  - individual freedoms and human rights
  - political freedoms and democracy
  - quality of regulation and corruption

# Growth, a multidimensional concept as well

x:HDI et y:GDP/cap in PPP in Africa

The main indicators of economic development

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## Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

## Determinants

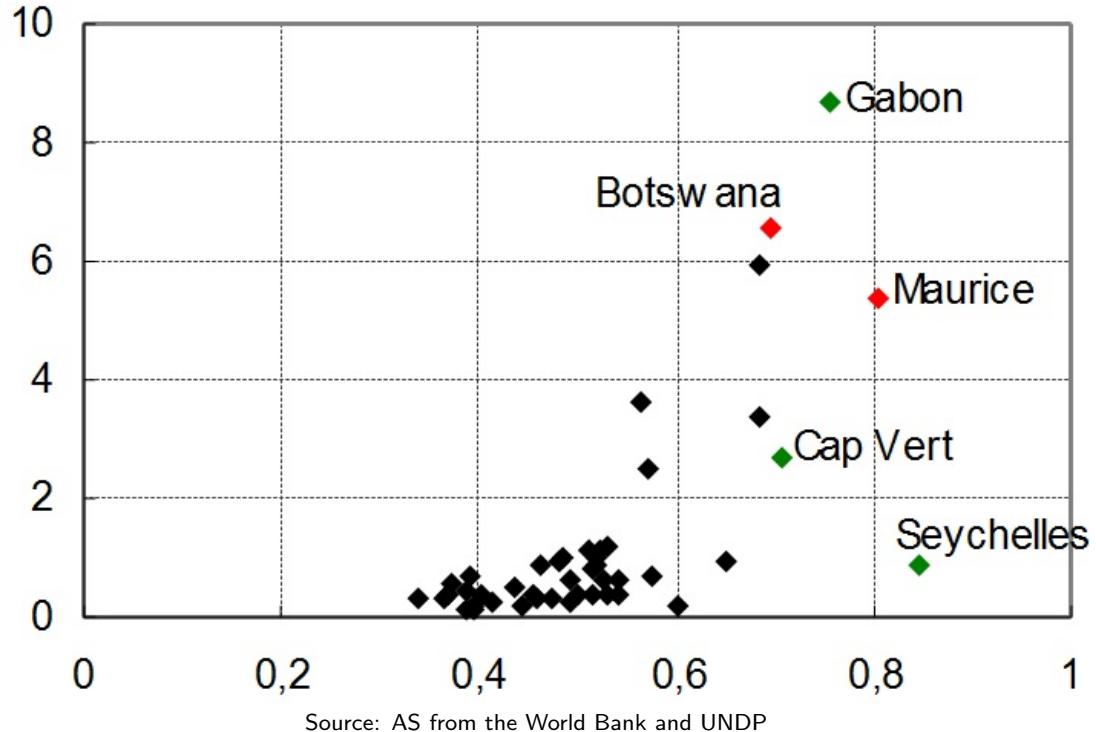
Proximate causes  
Fundamental causes

## Development

Income

Redistribution

Social and political indicators



# Objective of this sequence

The main indicators of economic development

Arthur Silve

## Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

## Determinants

Proximate causes  
Fundamental causes

## Development

Income

Redistribution

Social and political indicators

Gather the whole set of relevant indicators to characterize

- The production of wealth – its nature and determinants
- Redistribution of this wealth – poverty and inequalities
- The social barriers to development – health, education and social security
- The political process / the business environment

Formulate a first diagnosis relative to the development challenges a country faces

- economic, social and political stakes
- main barriers to economic growth

# Course outline

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

## 1 Introduction

## 2 GDP and growth

- GDP, GNP, GNI and growth
- Sectoral decomp.
- Decomp. by expenditures
- Decomp. by income

## 3 Determinants

- Proximate causes
- Fundamental causes

## 4 Development

- Income
- Redistribution
- Social and political indicators

# The gross domestic product - GDP

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

Defined as

- the market value
- of all final products and services produced
- on the national territory
- over one year (usually the calendar year).

The main  
 indicators of  
 economic  
 development

Arthur Silve

Introduction

GDP and growth  
 GDP, GNP, GNI and  
 growth

Sectoral decomp.  
 Decomp. by  
 expenditures  
 Decomp. by income

Determinants  
 Proximate causes  
 Fundamental causes

Development  
 Income  
 Redistribution  
 Social and political  
 indicators

## GNP

- goods and services produced thanks to labor and assets supplied by the nationals of a country
- More pragmatically:  $\text{GDP} + \text{income on factors abroad} - \text{income of non-national in a country}$

## GNI

- $\text{GNP} - \text{indirect taxes (VAT)} < \text{GNP}$
- strongly correlated with GNP. Since the implementation of the ESA 95 (consistent with the SNA 93), GNI is usually preferred

# Short term cycles

potential growth, output gap, overheating

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 indicators of  
 economic  
 development

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Introduction

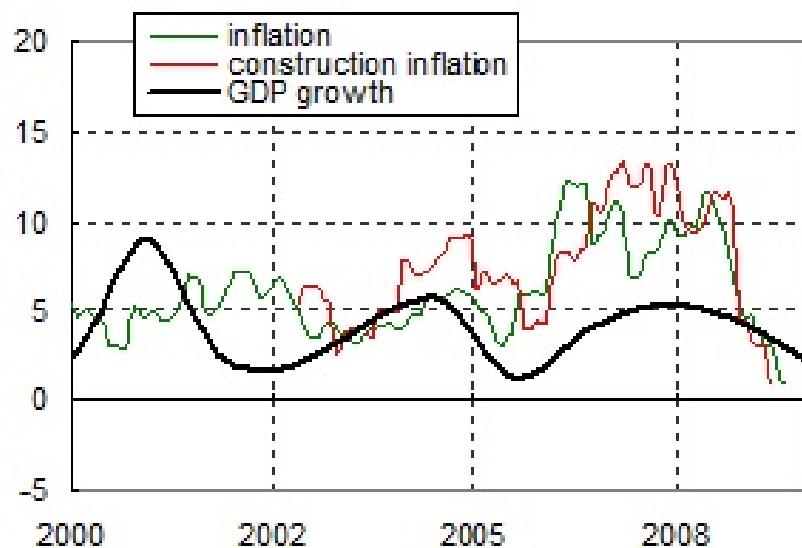
GDP and growth  
 GDP, GNP, GNI and  
 growth

Sectoral decomp.  
 Decomp. by  
 expenditures  
 Decomp. by income

Determinants  
 Proximate causes  
 Fundamental causes

Development  
 Income  
 Redistribution  
 Social and political  
 indicators

- Real growth and nominal growth
- Inertia of the productive sector
- Potential growth, real growth, output gap



Source: AS as from Mauritius INS. x:year, y:%

# Overheating example: Vietnam 2008

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Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.  
Decomp. by expenditures

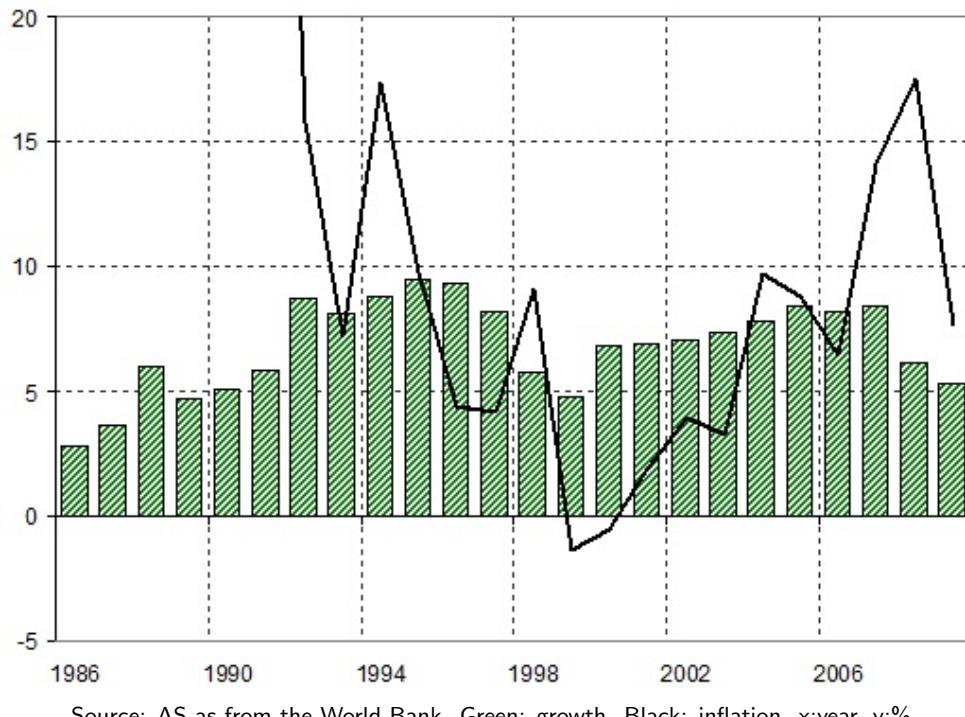
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political indicators



Source: AS as from the World Bank. Green: growth. Black: inflation. x:year, y:%

## Vietnam (continued)

Inflows in excess

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Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.  
Decomp. by expenditures

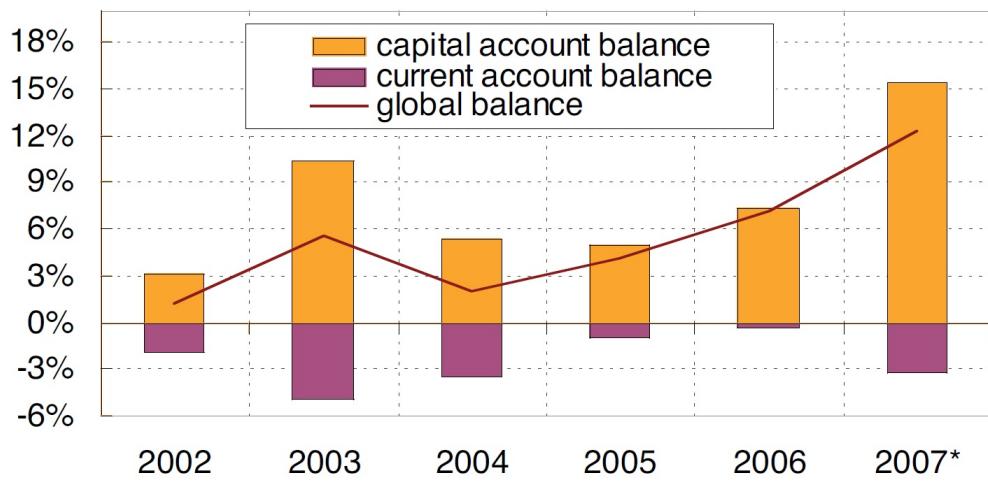
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political indicators



Source: AS as from the World Bank. FDI, portfolio, others, balances of the BP. x:year, y:% of GDP

# Sectoral decomposition

The main  
 indicators of  
 economic  
 development

Arthur Silve

Introduction

GDP and growth  
 GDP, GNP, GNI and  
 growth

Sectoral decomp.

Decomp. by  
 expenditures

Decomp. by income

Determinants

Proximate causes  
 Fundamental causes

Development

Income

Redistribution

Social and political  
 indicators

$$GDP = \sum GDP_{sect}$$

# Sectoral decomposition

The main  
 indicators of  
 economic  
 development

Arthur Silve

Introduction

GDP and growth  
 GDP, GNP, GNI and  
 growth

Sectoral decomp.

Decomp. by  
 expenditures

Decomp. by income

Determinants

Proximate causes  
 Fundamental causes

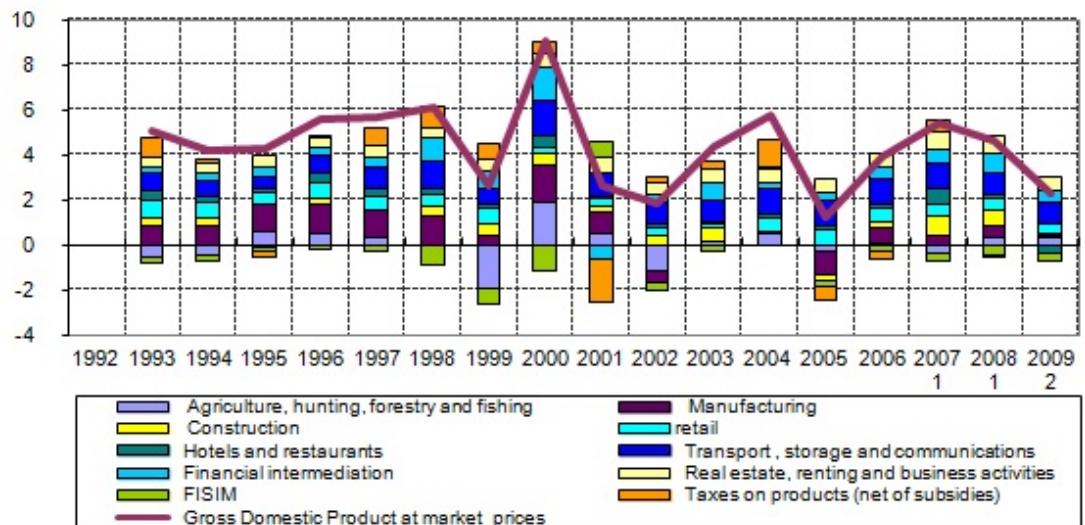
Development

Income

Redistribution

Social and political  
 indicators

If we decompose the Mauritian GDP growth, it gives:



Source: AS as from Mauritian INS. y: %

# First country-case: Mauritania

## Sectoral decomposition of GDP

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

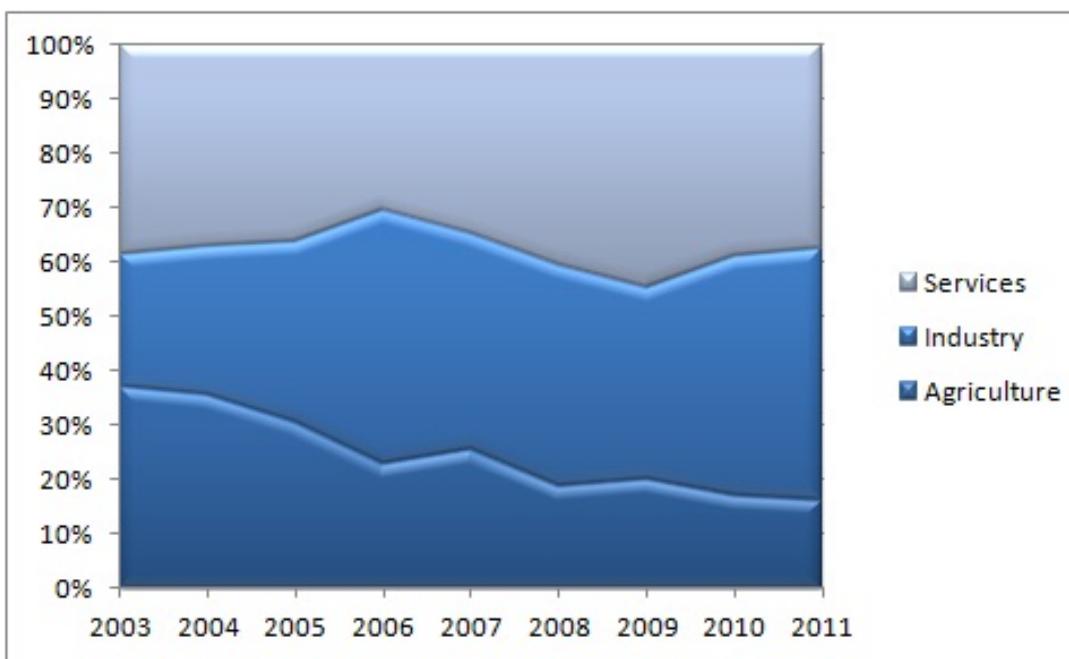
Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income  
Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators



Source: AS as from the World Bank

# Mauritania (continued)

## Sectoral decomposition of growth

The main  
indicators of  
economic  
development

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Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

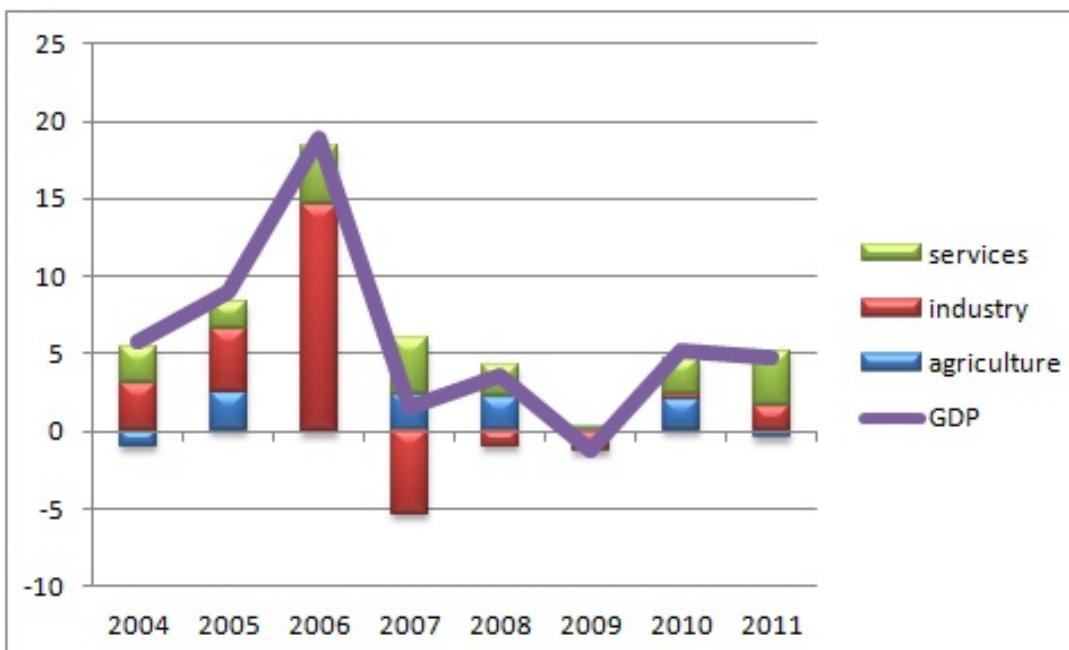
Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income  
Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators



Source: AS as from the World Bank: y: %

## Second country-case: Madagascar

### Sectoral decomposition of GDP

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

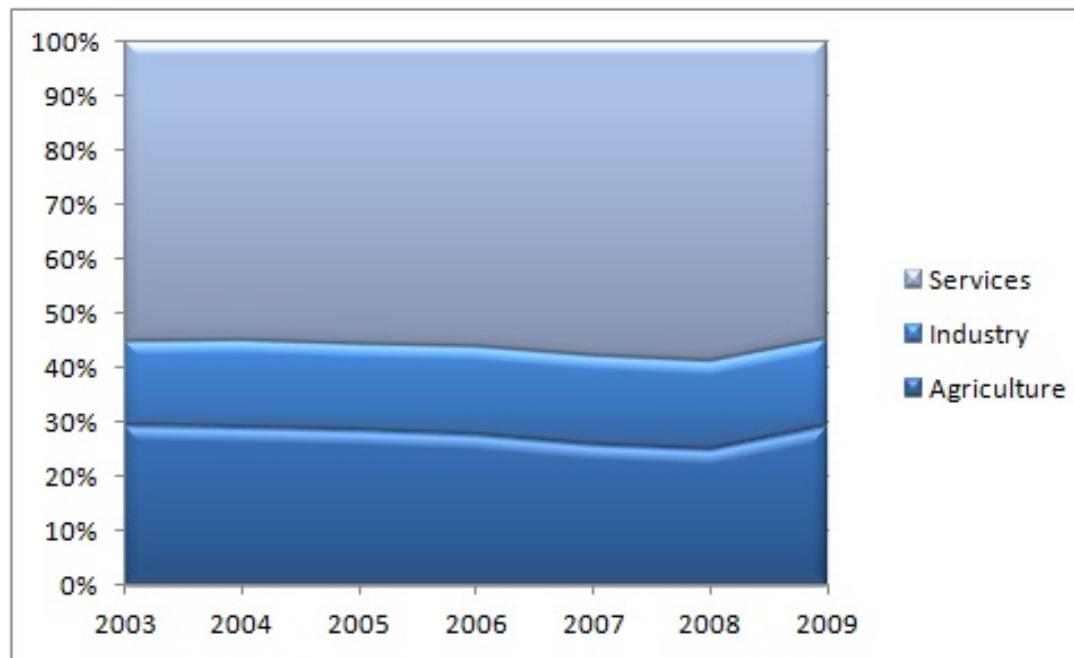
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators



Source: AS from the World Bank

## Madagascar (continued)

### Sectoral contributions to growth

The main  
indicators of  
economic  
development

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Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

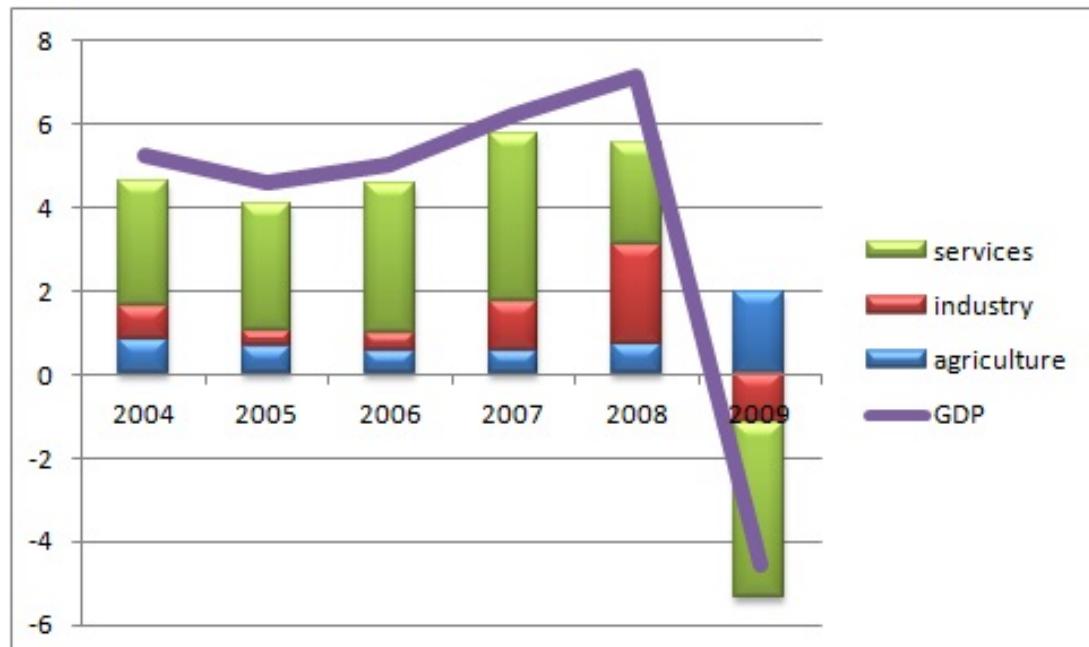
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators



Source: AS as from the World Bank. y: %

# Third country-case: El Salvador

## Sectoral decomposition of GDP

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.  
Decomp. by expenditures

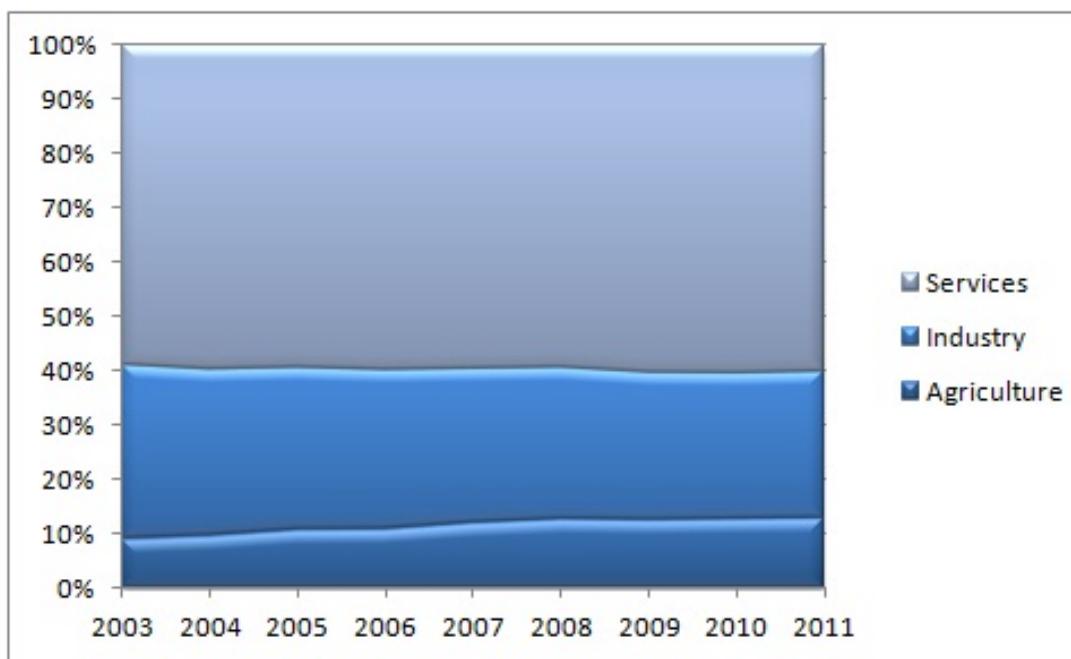
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political indicators



Source: AS as from the World Bank

# El Salvador (continued)

## Sectoral contributions to growth

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.  
Decomp. by expenditures

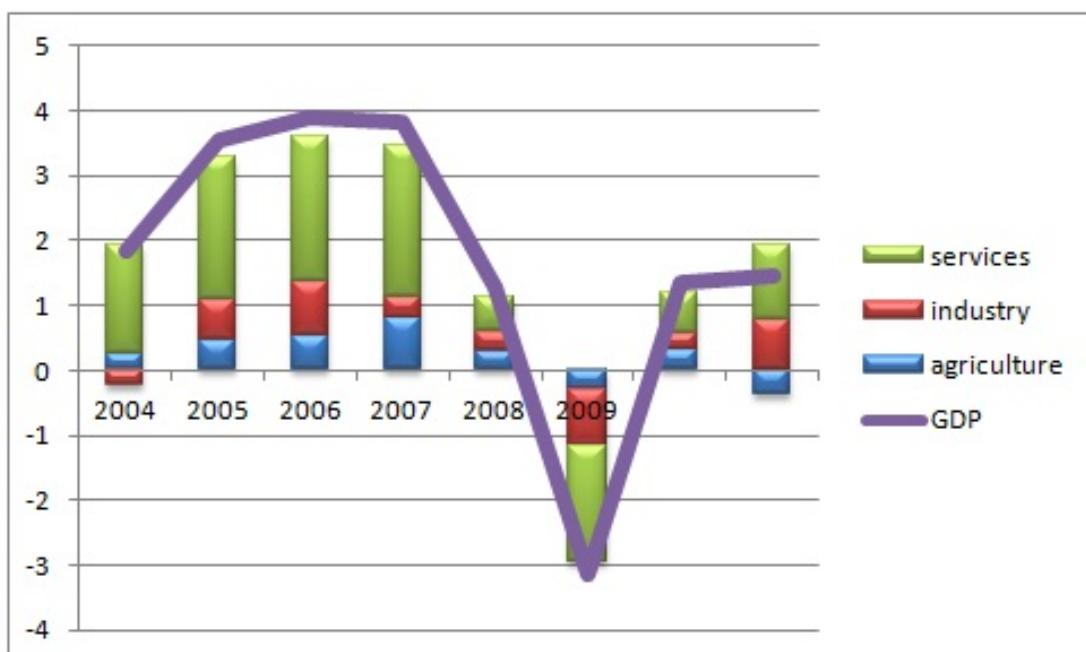
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political indicators



Source: AS as from the World Bank. y: %

# Decomposition by expenditures

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political indicators

$$\begin{aligned}
 Y &= C + I + X - M \\
 &= C_{pub} + C_{priv} + I_{pub} + I_{priv} + \Delta S + X - M
 \end{aligned}$$

# Decomposition by expenditures

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

Determinants

Proximate causes

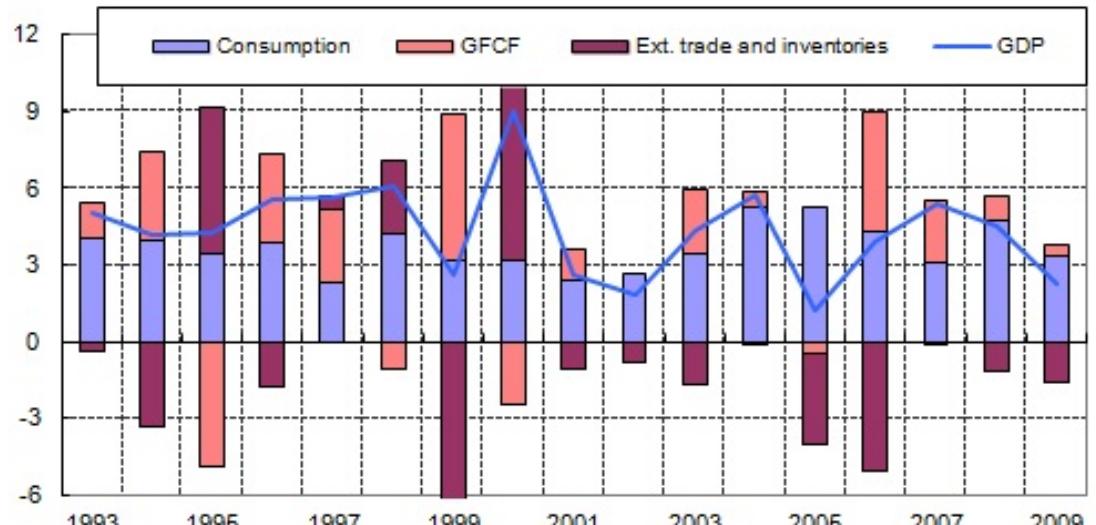
Fundamental causes

Development

Income

Redistribution

Social and political indicators



Source: AS as from the Mauritian INS. y: %

# Mauritania (end)

## Contributions of expenditures to growth

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

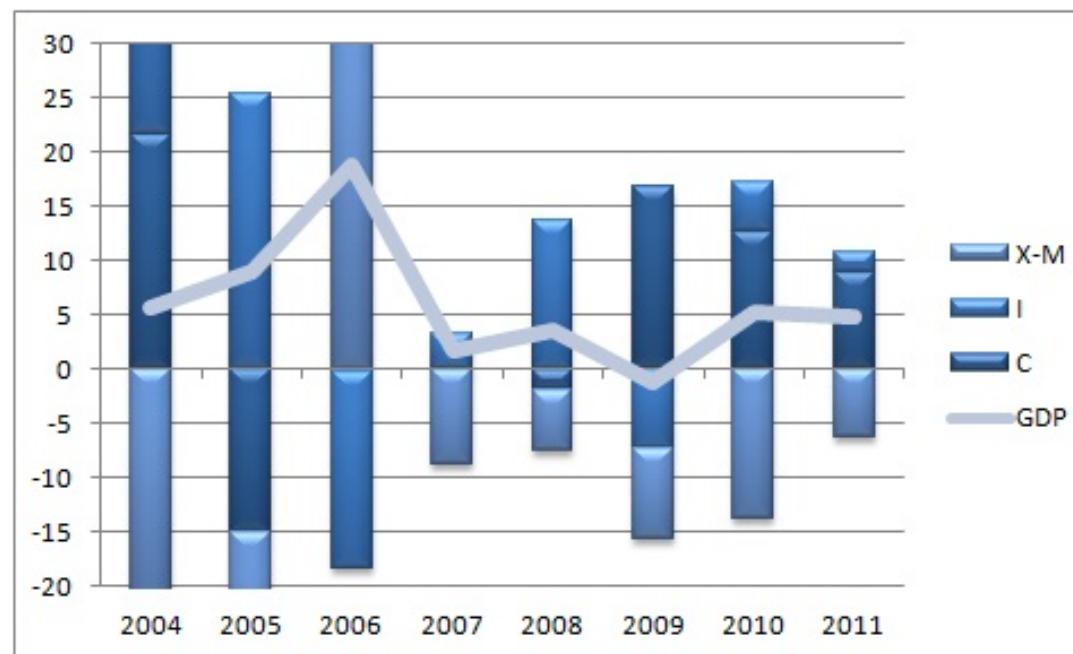
Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution

Social and political indicators



Source: AS as from the World Bank. y:%

# Madagascar (end)

## Contributions of expenditures to growth

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

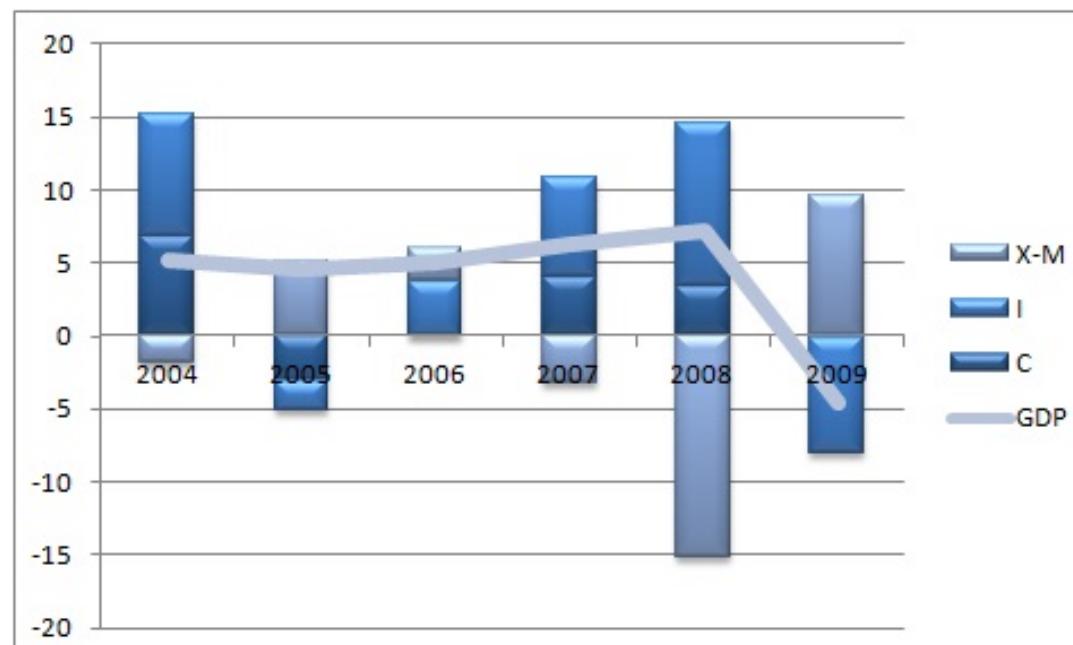
Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution

Social and political indicators



Source: AS as from the World Bank. y:%

# El Salvador (end)

## Contributions of expenditures to growth

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

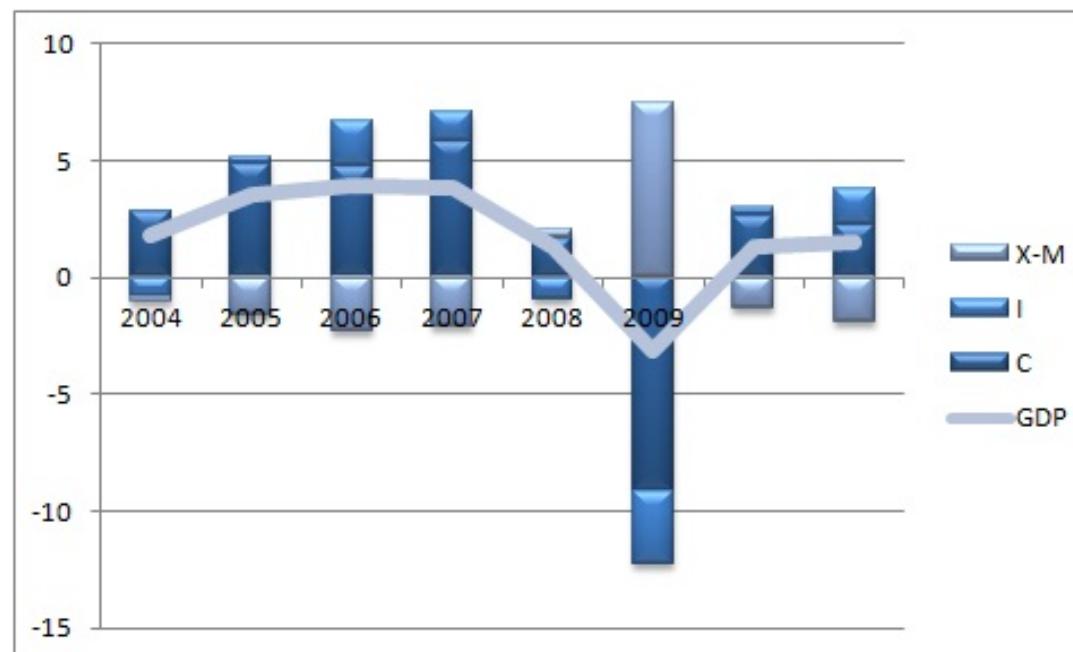
Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution

Social and political  
indicators



Source: AS as from the World Bank. y:%

# LT growth and investment

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

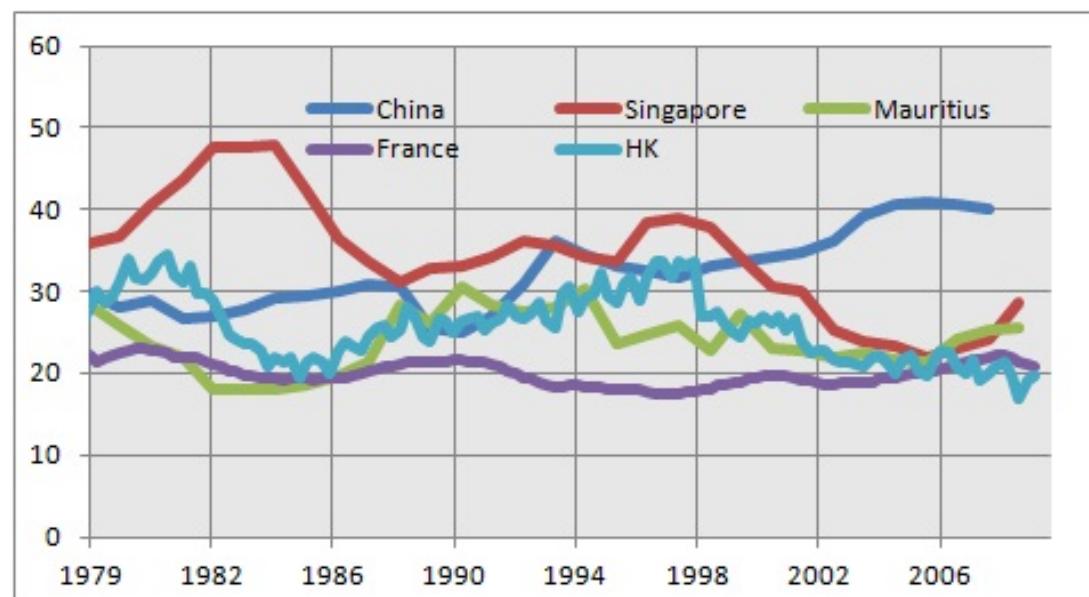
Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution

Social and political  
indicators



Source: AS as from the World Bank. y:% of GDP

# Decomposition by income

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators

GDP can be considered as the sum of the income derived from the various production factors / institutional sectors

- Labor: wages
- Capital: profits, after taxes
- Public sector: taxes on production and imports – subsidies

# Course outline

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators

## 1 Introduction

## 2 GDP and growth

## 3 Determinants

- Proximate causes
- Fundamental causes

## 4 Development

# First model: the hope of convergence

## the neoclassical model (Solow-Swan)

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political indicators

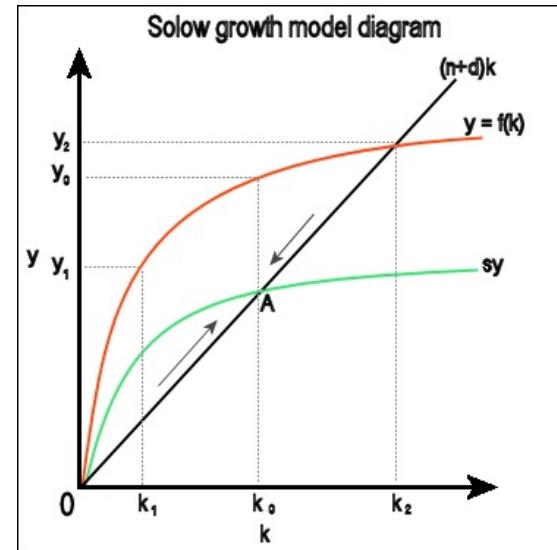
Solow (1956) "Technical change and the aggregate production function", RES 39(3), 312-320.

- Decreasing marginal productivity of capital
- Saving vs. pop. growth / capital depreciation
- Steady states

$$y = Ak^\alpha$$

Empirical predictions

- convergence
- flows to developing countries
- growth accounting framework



# Second model: endogenous growth

Romer: augmented Solow model

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.

Decomp. by expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political indicators

Romer (1986) "Increasing returns and long-run growth", JPE, 94(5), 1002-37

Mankiw, Romer, Weil (1992) "A contribution to the empirics of economic growth", QJE 107(2), 407-37.

$$y = k^\alpha h^\beta$$

Investment is made both in human and physical capital.

- ✓ Explain much better global panel data
- ✗ Does not explain the conditional convergence

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

## Multiplicative model

$$Y = AK^\alpha L^{1-\alpha}$$

In per capita terms and log-linearised:

$$y = \ln A + \alpha k$$

	GDP	Growth	Capital	Labor	Innovation
1980-90	6.3	3.0	2.0	1.3	
1991-00	5.6	2.5	2.1	1.0	
2001-07	4.1	2.5	0.9	0.7	
1980-07	5.3	2.6	1.7	1.0	

Source: Rojid et Seetanah (2009)

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

- cycles, output gap, nominal and real effects
- sectoral decomposition
- decomposition by expenditures
- decomposition by income
- growth accounting framework

# Underlying causes

## Why do countries get richer?

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators

- investment, technical progress, education, economies of scale are not determinants of growth: they ARE growth
- institutions
  - the structure of incentives
  - institutions de jure and de facto
  - different levels of exogeneity

# Course outline

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators

## 1 Introduction

## 2 GDP and growth

## 3 Determinants

## 4 Development

- Income
- Redistribution
- Social and political indicators

# First measure of the economic development

## Indicators of households income

The main indicators of economic development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and growth

Sectoral decomp.  
Decomp. by expenditures  
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political indicators

- GDP or GNP at Purchasing Power Parity
- Income per capita according to the Atlas method (World Bank)

## The trajectory of 2 exceptional countries

World Bank classification

The main indicators of economic development

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Introduction

GDP and growth  
GDP, GNP, GNI and growth

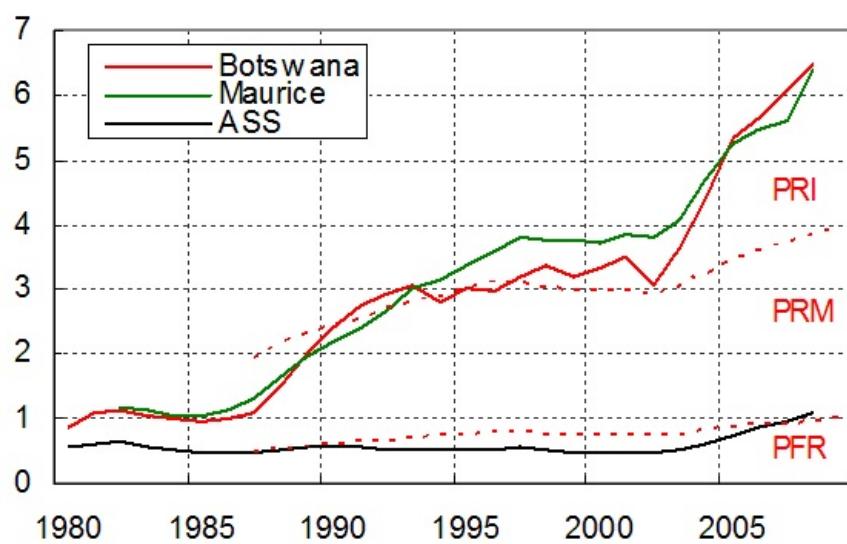
Sectoral decomp.  
Decomp. by expenditures  
Decomp. by income

Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political indicators



# Redistribution

The main  
 indicators of  
 economic  
 development

Arthur Silve

Introduction

GDP and growth  
 GDP, GNP, GNI and  
 growth

Sectoral decomp.  
 Decomp. by  
 expenditures

Decomp. by income  
 Determinants

Proximate causes  
 Fundamental causes

Development

Income  
 Redistribution

Social and political  
 indicators

- A full-fledged objective for policy
- which takes very different forms depending on societies
  - income redistribution
  - land reform, universal medical coverage, free education, etc.
  - focus on poverty reduction
  - employment and unemployment
  - access to financial services...

# Measures of poverty

The main  
 indicators of  
 economic  
 development

Arthur Silve

Introduction

GDP and growth  
 GDP, GNP, GNI and  
 growth

Sectoral decomp.  
 Decomp. by  
 expenditures

Decomp. by income  
 Determinants

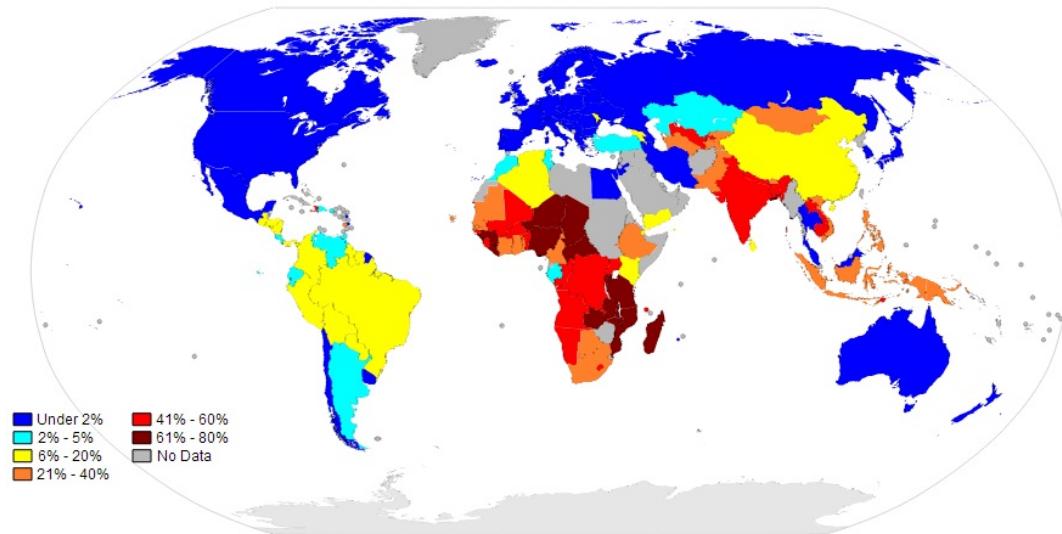
Proximate causes  
 Fundamental causes

Development

Income  
 Redistribution

Social and political  
 indicators

- Absolute / relative poverty
- Share of population under the poverty line (poverty headcount)
- Poverty gap, etc.



# Variable poverty lines

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

	poverty line	headcount	gap
DRC	38	88%	53%
Mexico	192	18%	38%
South Africa	38	14%	2%
Switzerland	1148	9%	39%
Denmark	955	5%	24%

# Multidimensional poverty

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

- The HDI can be interpreted as a composite poverty index
- The MDGs indicate several important dimensions of poverty
- This philosophical tradition dates back to Perroux, Sen

# Income inequalities

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

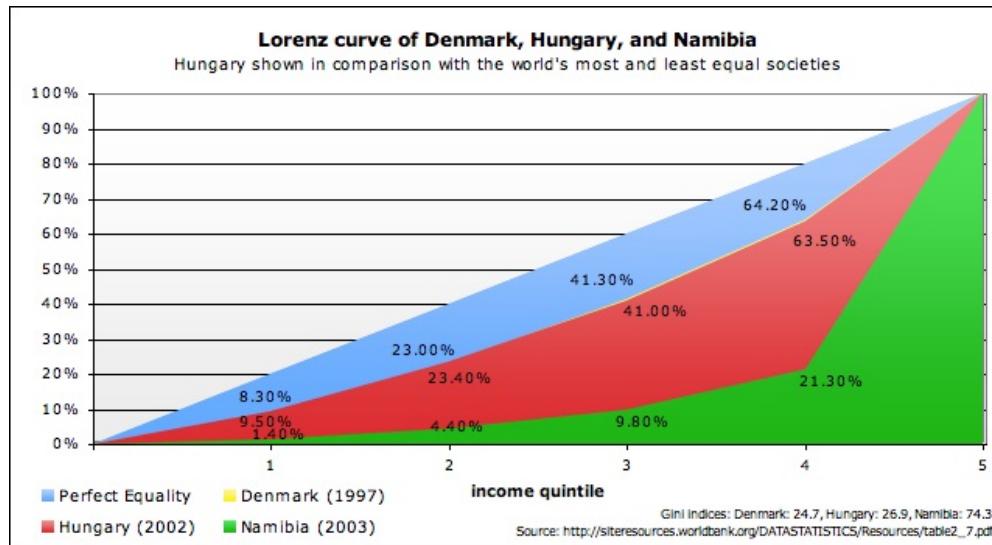
Determinants

Proximate causes  
Fundamental causes

Development

Income  
Redistribution  
Social and political  
indicators

- Lorenz curve
- Deciles / quintiles
- Gini coefficient



Source: World Bank

# Other dimensions of inequalities

The main  
indicators of  
economic  
development

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Introduction

GDP and growth  
GDP, GNP, GNI and  
growth

Sectoral decomp.  
Decomp. by  
expenditures

Decomp. by income

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indicators

Income inequalities only offer a partial view

- inequalities in terms of human capital
- access to administrative services
- access to public infrastructures
- access to education and basic health services

# Measuring inequalities

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Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by

expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

## Classical indicators of inequalities and poverty

- Gini index
- Poverty headcount
- poverty gap

# Inclusive growth

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economic  
development

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Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by

expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

- Absolute or relative “pro-poor” growth often call on redistribution mechanisms
- “Inclusive” growth implies an increase in productivity and new employment opportunities
  - “Sustainable” growth  $\implies$  largely spread according to sectors, and call on the idea of resilience
  - Inclusive  $\implies$  equality of opportunities (access to markets, resources and fair regulation)

# The challenge of inclusive growth in mineral-rich countries

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economic  
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Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

## ■ Dutch disease

- Mining generates little formal employment
- The productive diversification is blocked by a low competitiveness

## ■ Conflict

- Rent-seeking behaviors, corruption and institutional failure

# Measuring social and political development

The main  
indicators of  
economic  
development

Arthur Silve

Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

## Common indicators of governance quality

- Worldwide Governance Indicators (World Bank)
- Global Competitiveness Index (World Economic Forum)
- Doing Business (World Bank)

## Common indicators of social development

- Human Development Index (UNDP)

# Human Development Index 2011

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economic  
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Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

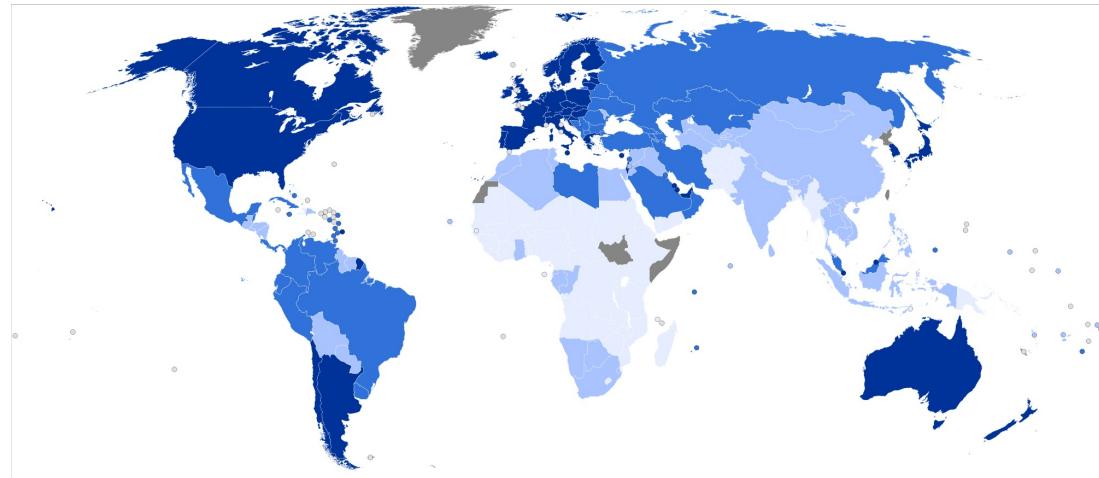
Fundamental causes

Development

Income

Redistribution

Social and political  
indicators



## HDI and GDP/capita in PPP in Africa

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indicators of  
economic  
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Introduction

GDP and growth

GDP, GNP, GNI and  
growth

Sectoral decomp.

Decomp. by  
expenditures

Decomp. by income

Determinants

Proximate causes

Fundamental causes

Development

Income

Redistribution

Social and political  
indicators

