



The main indicators of economic development

Arthur Silve

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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



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Sustainable and inclusive growth

The role of public policies

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

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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

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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

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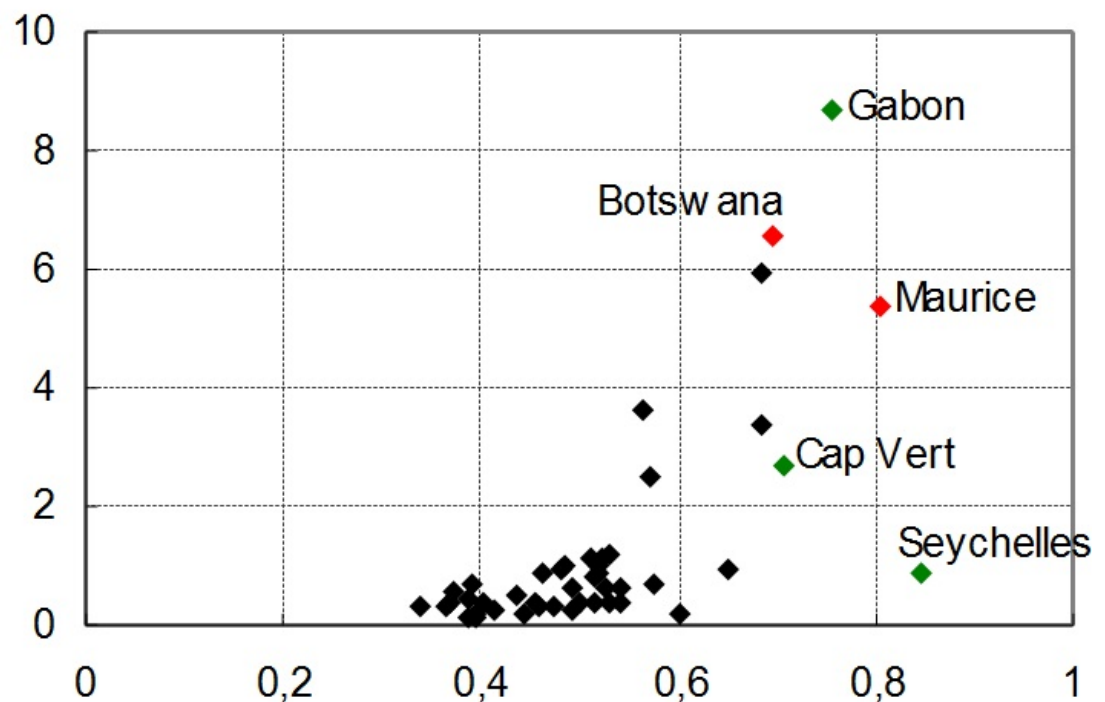
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Source: AS from the World Bank and UNDP

Objective of this sequence

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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



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The gross domestic product - GDP

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Defined as

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



GNP, GNI

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GNP

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

GNI

- GNP – indirect taxes (VAT) < 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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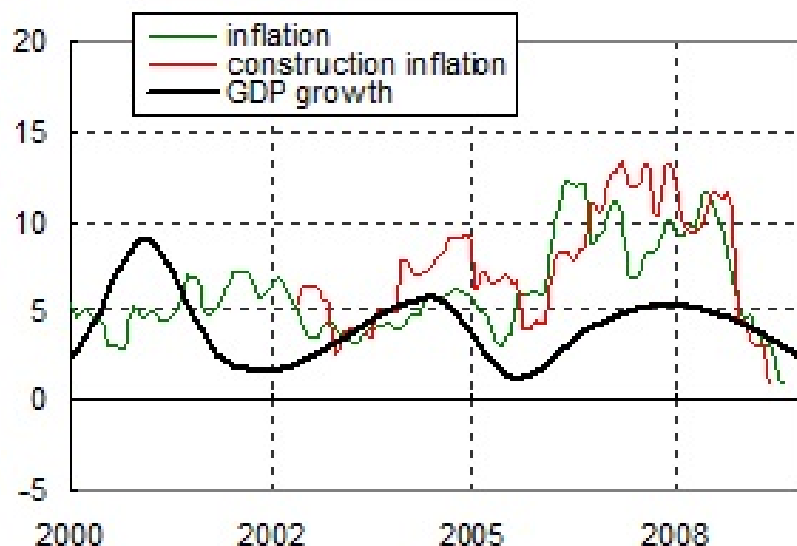
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- Real growth and nominal growth
- Inertia of the productive sector
- Potential growth, real growth, output gap



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

Overheating example: Vietnam 2008

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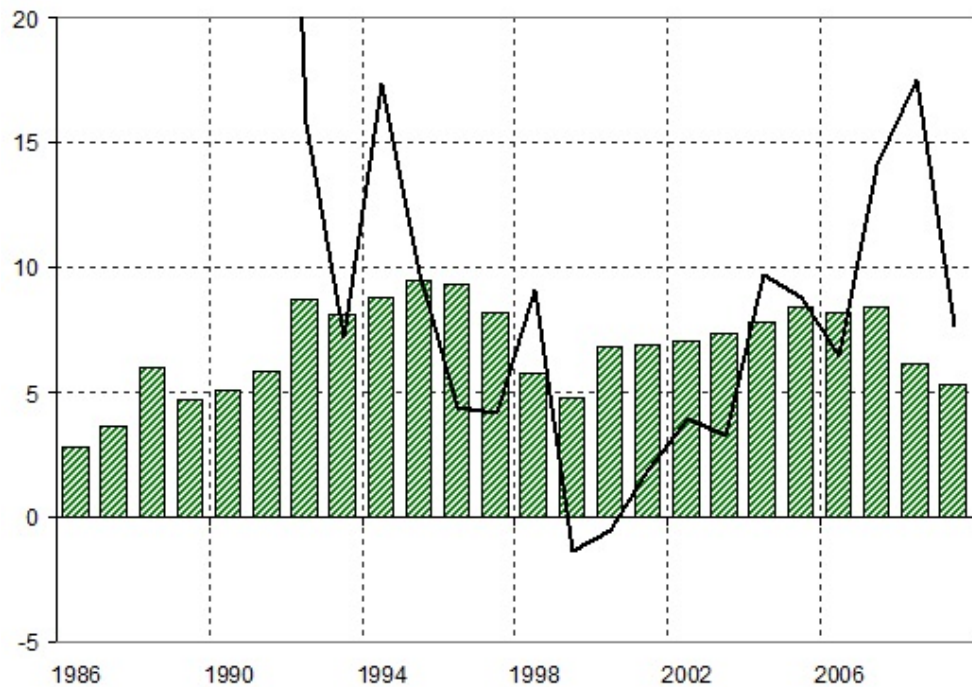
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Source: AS as from the World Bank. Green: growth. Black: inflation. x:year, y:%

Vietnam (continued)

Inflows in excess

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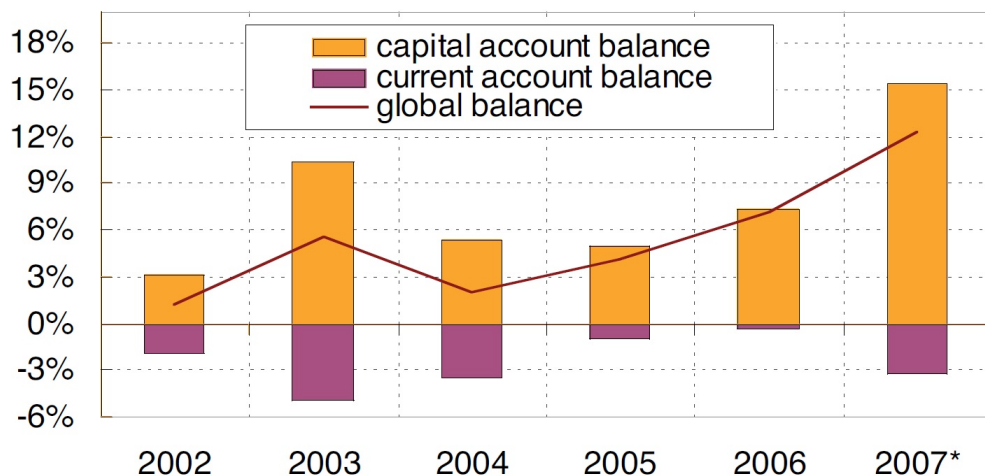
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Source: AS as from the World Bank. FDI, portfolio, others, balances of the BP. x:year, y:% of GDP

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

Sectoral decomposition

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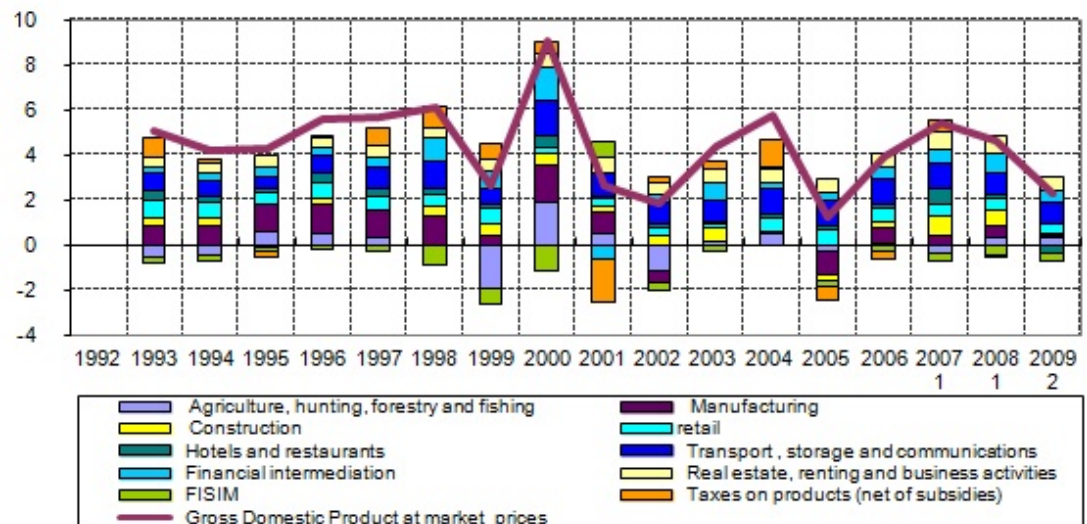
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If we decompose the Mauritian GDP growth, it gives:



Source: AS as from Mauritian INS. y: %

First country-case: Mauritania

Sectoral decomposition of GDP

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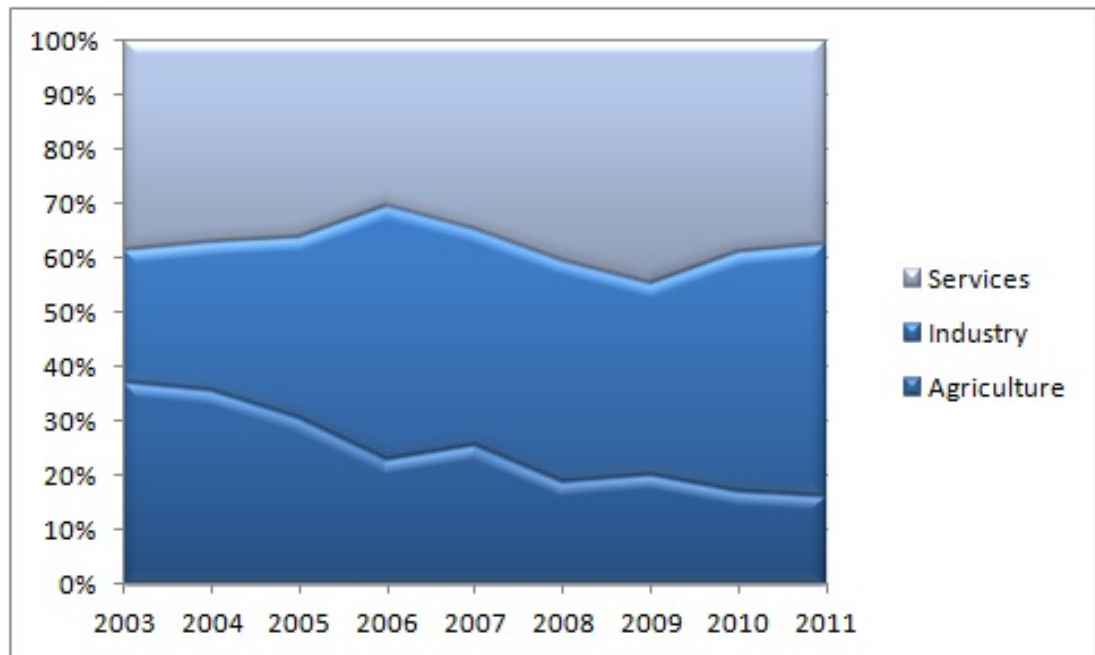
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Source: AS as from the World Bank

Mauritania (continued)

Sectoral decomposition of growth

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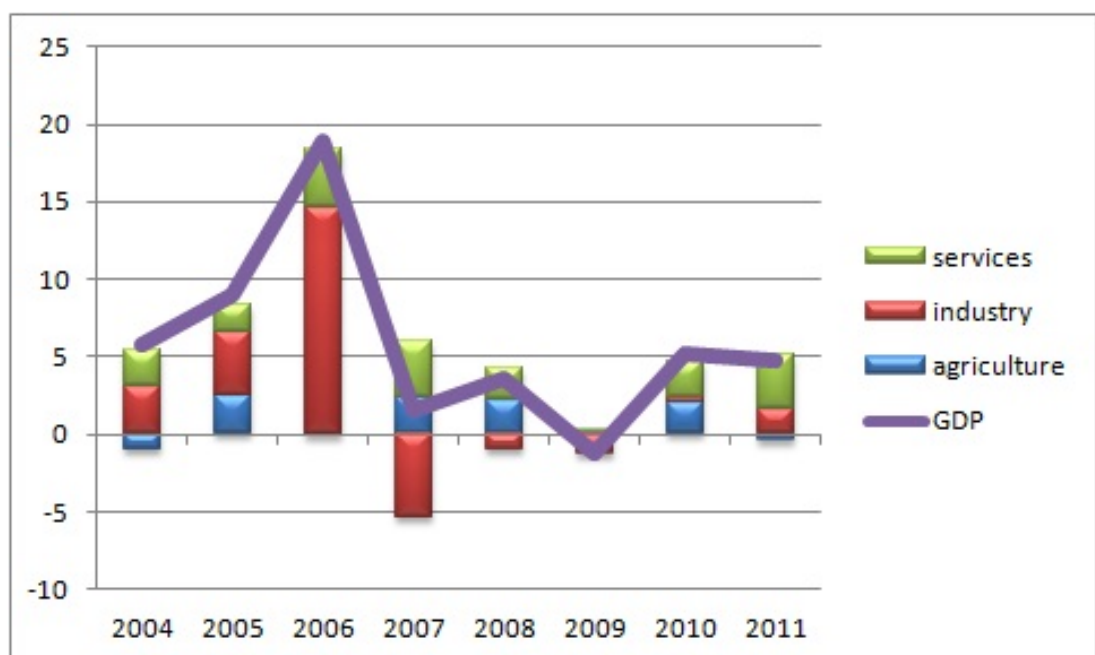
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Source: AS as from the World Bank: y: %

Second country-case: Madagascar

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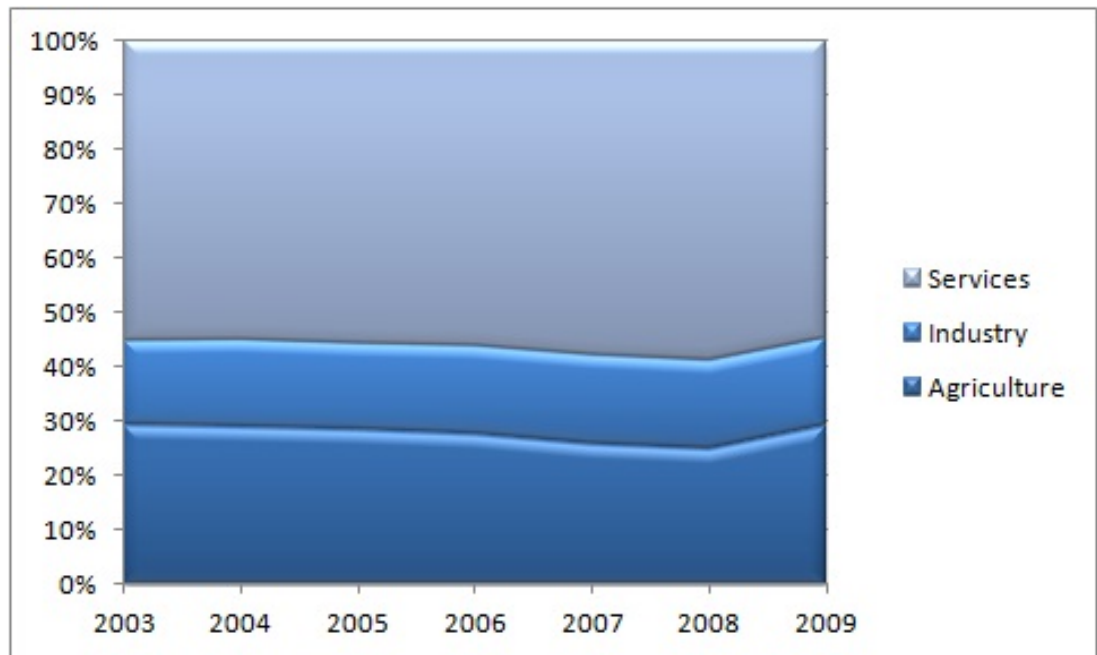
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Source: AS from the World Bank

Madagascar (continued)

Sectoral contributions to growth

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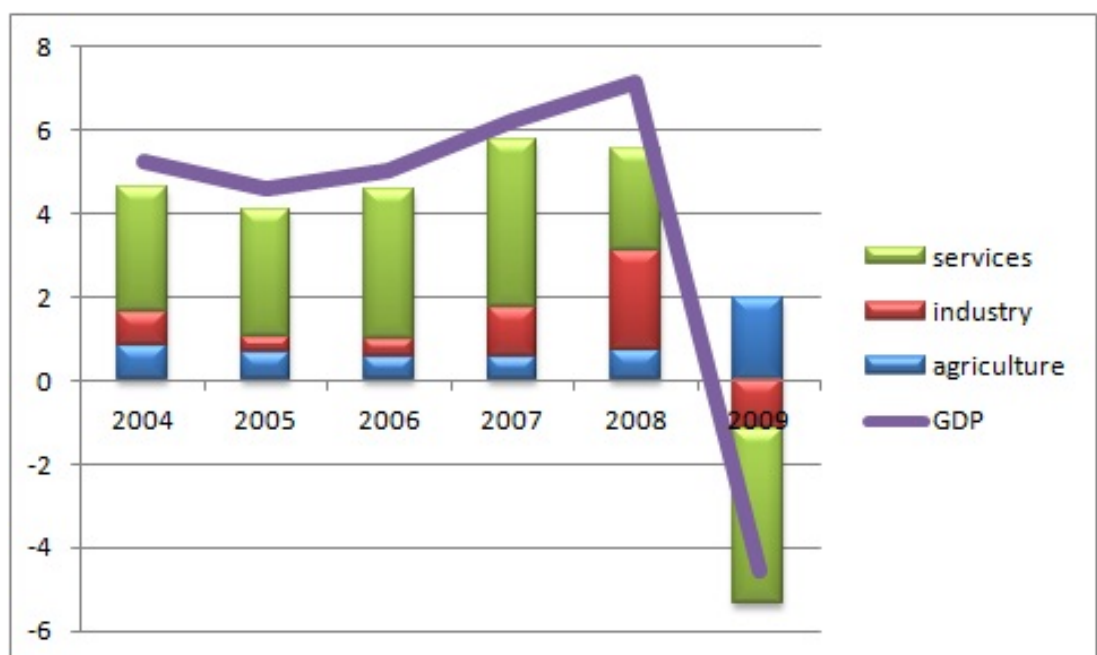
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Source: AS as from the World Bank. y: %

Third country-case: El Salvador

Sectoral decomposition of GDP

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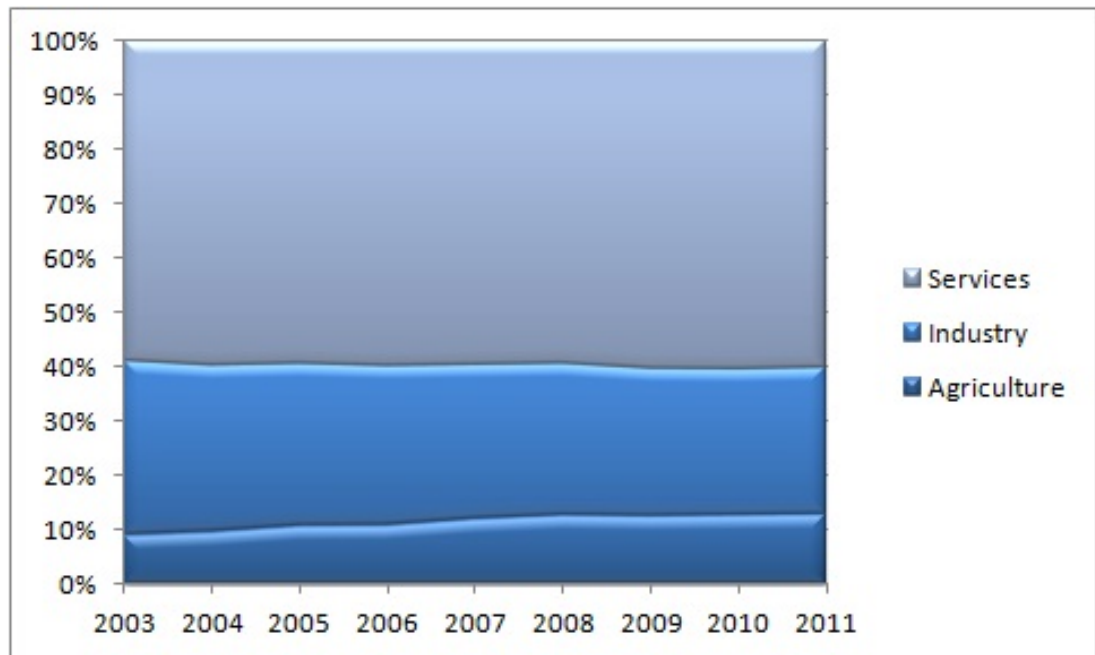
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Source: AS as from the World Bank

El Salvador (continued)

Sectoral contributions to growth

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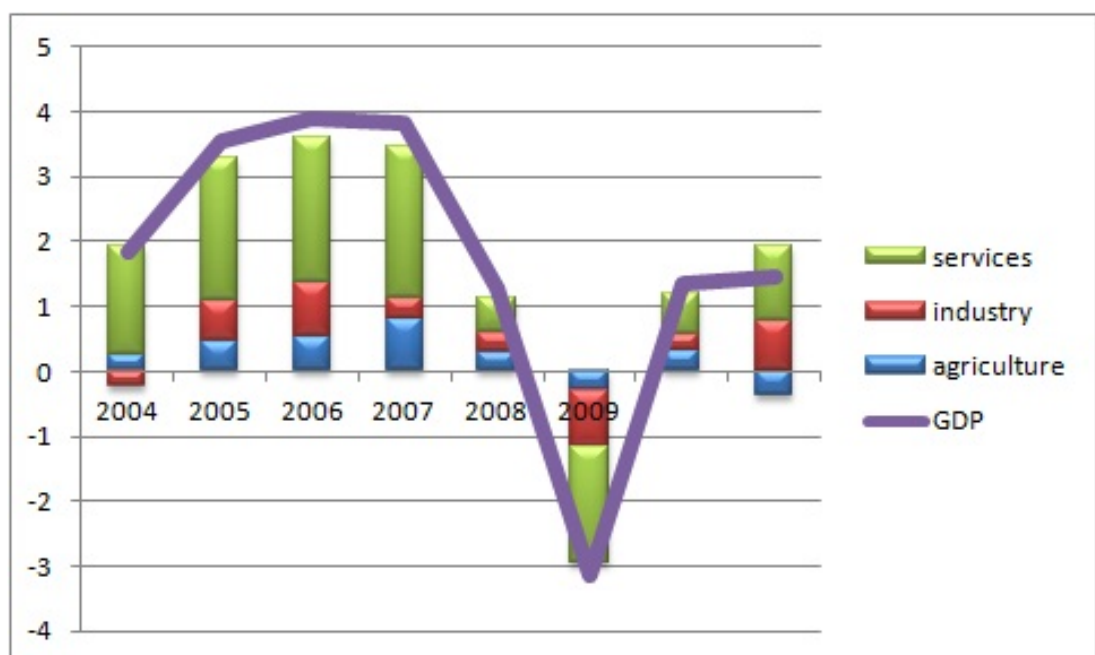
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Source: AS as from the World Bank. y: %

Decomposition by expenditures

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$$Y = C + I + X - M$$

$$= C_{pub} + C_{priv} + I_{pub} + I_{priv} + \Delta S + X - M$$

Decomposition by expenditures

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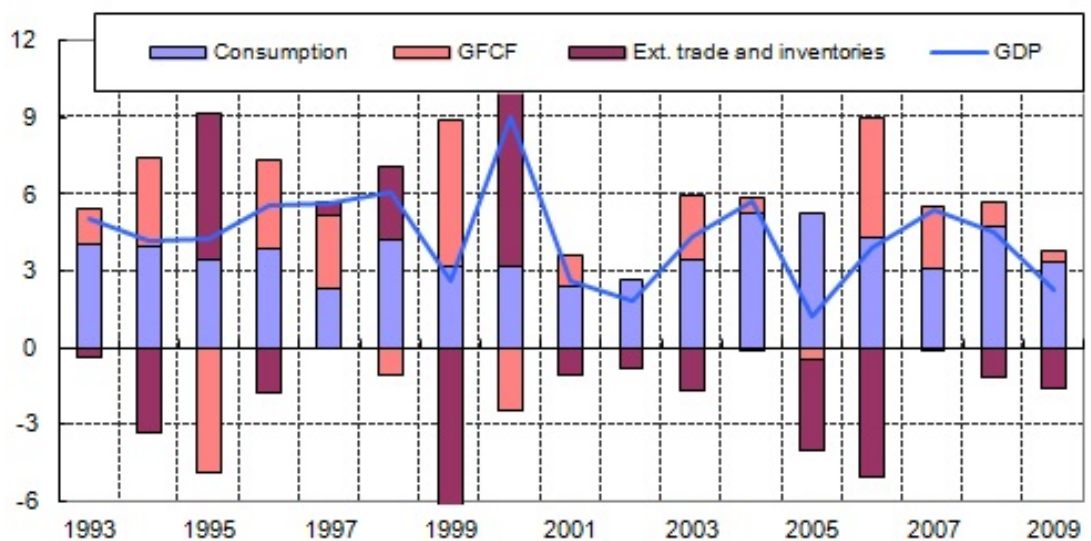
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Source: AS as from the Maurician INS. y:%

Mauritania (end)

Contributions of expenditures to growth

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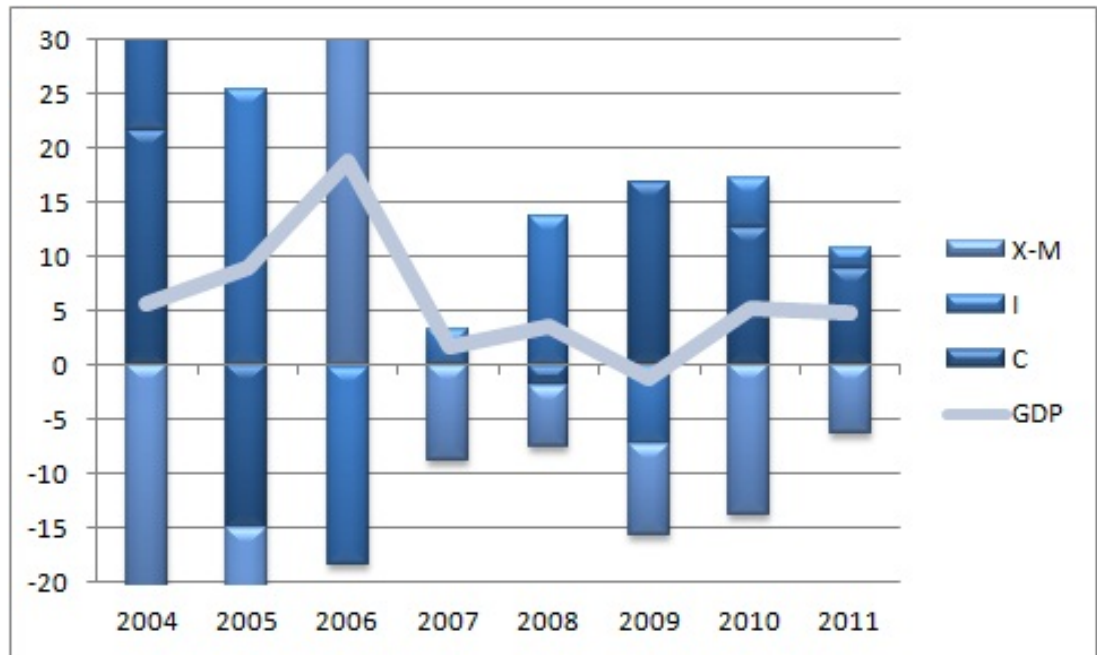
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Source: AS as from the World Bank. y: %

Madagascar (end)

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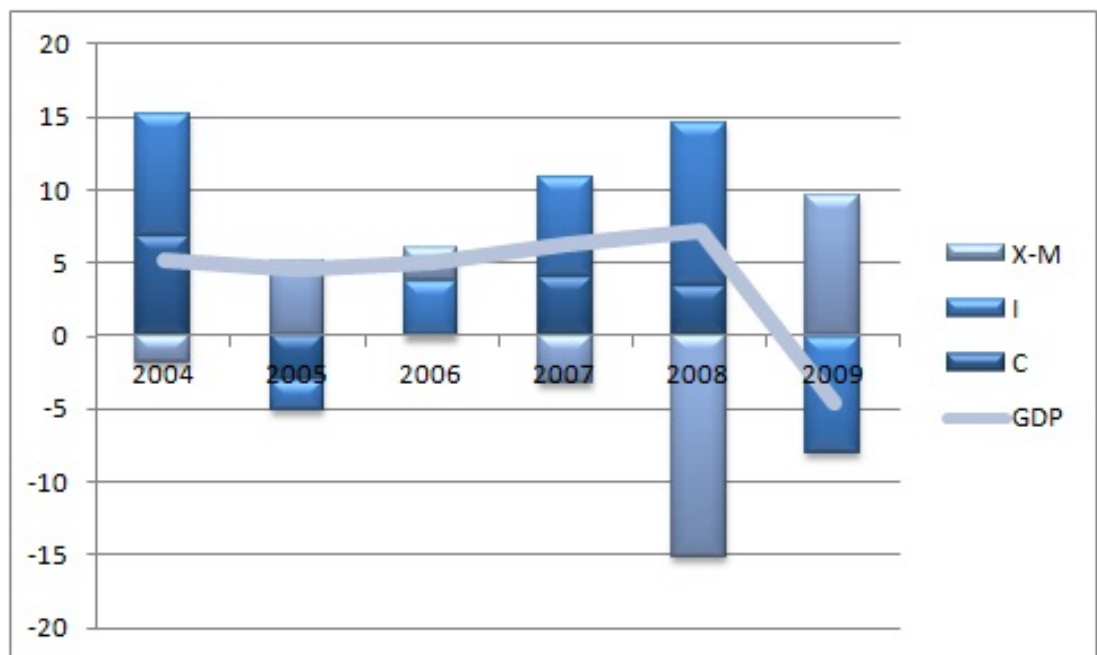
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Source: AS as from the World Bank. y: %

El Salvador (end)

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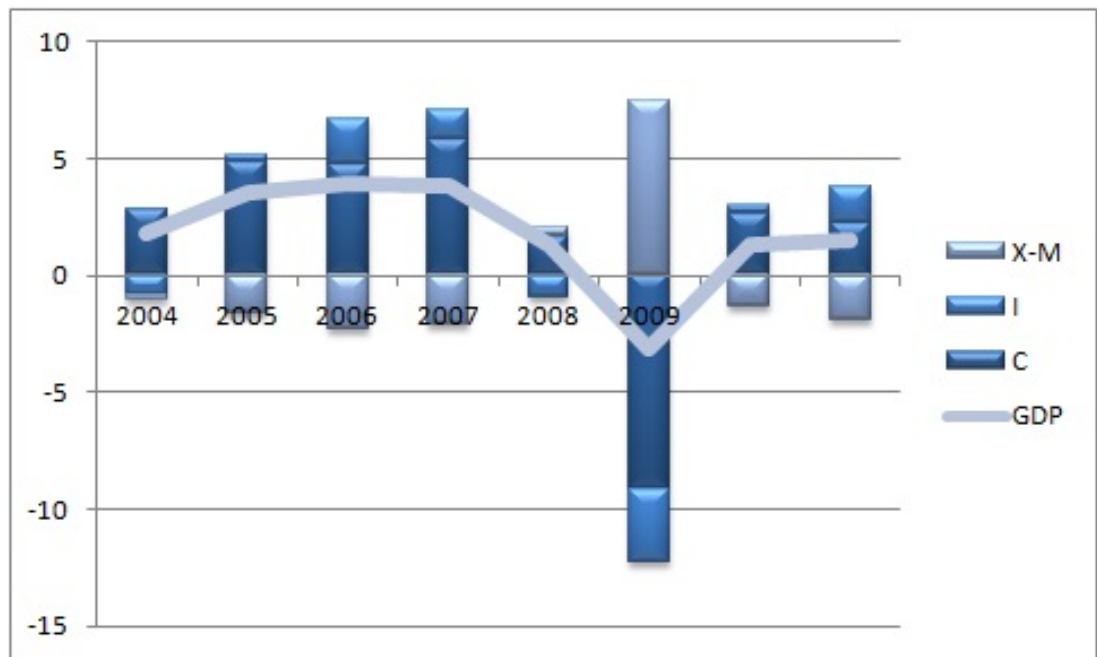
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Source: AS as from the World Bank. y:%

LT growth and investment

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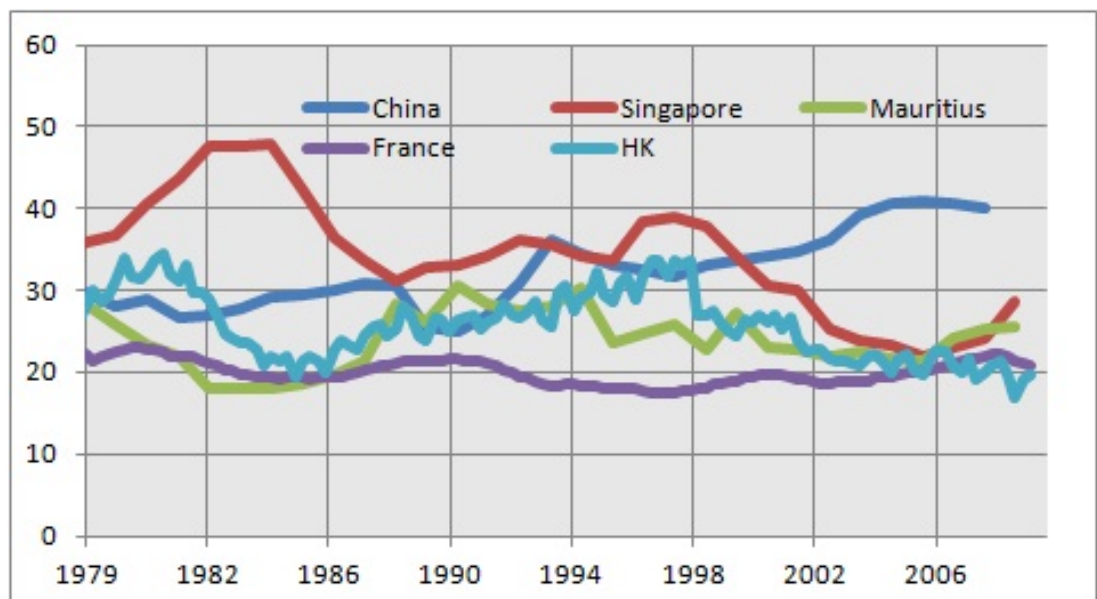
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Source: AS as from the World Bank. y:% of GDP



Decomposition by income

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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



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First model: the hope of convergence

the neoclassical model (Solow-Swan)

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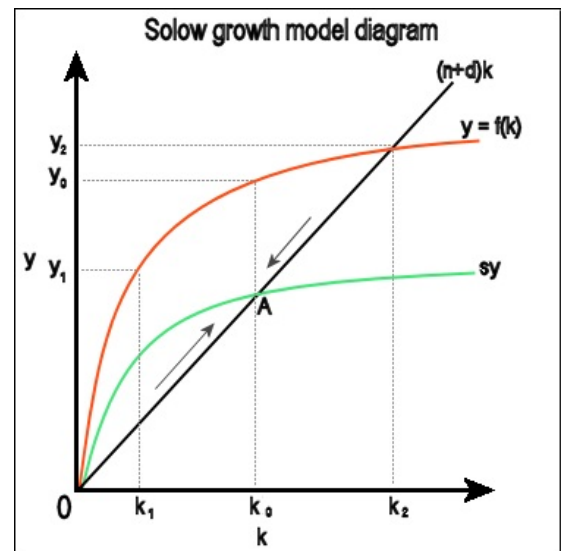
Solow (1956) "Technical change and the aggregate production function", RES 39(3), 312-320.

$$y = Ak^\alpha$$

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

Empirical predictions

- convergence
- flows to developing countries
- growth accounting framework



Second model: endogenous growth

Romer: augmented Solow model

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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



Immediate causes (proximate) growth accounting framework

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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)



Taking stock Describe growth

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- 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?

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- 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



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First measure of the economic development

Indicators of households income

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- 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

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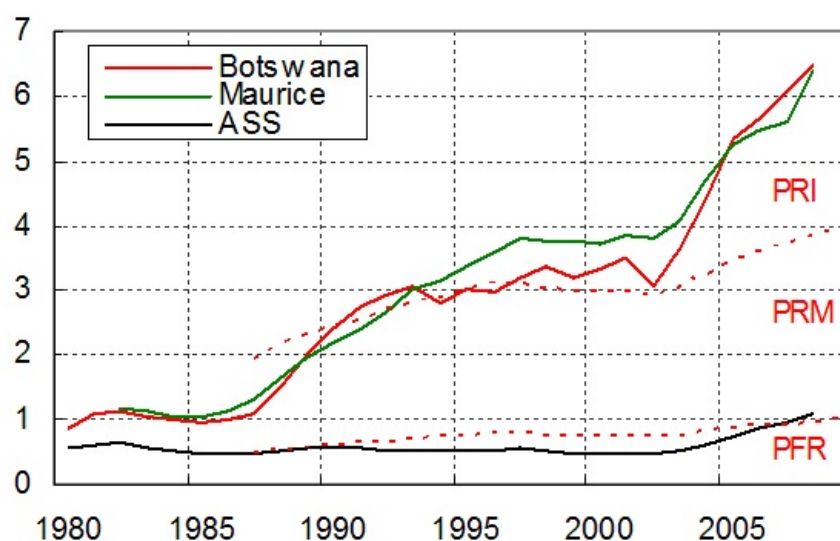
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Redistribution

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- 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

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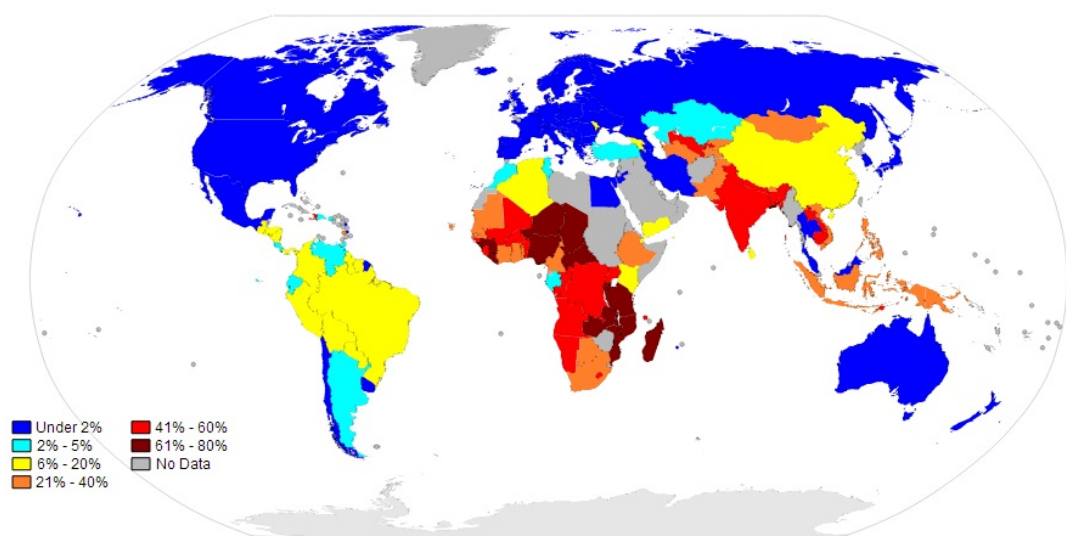
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- Absolute / relative poverty
- Share of population under the poverty line (poverty headcount)
- Poverty gap, etc.



Source: UNDP. % of population in absolute poverty



Variable poverty lines

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	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

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- 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

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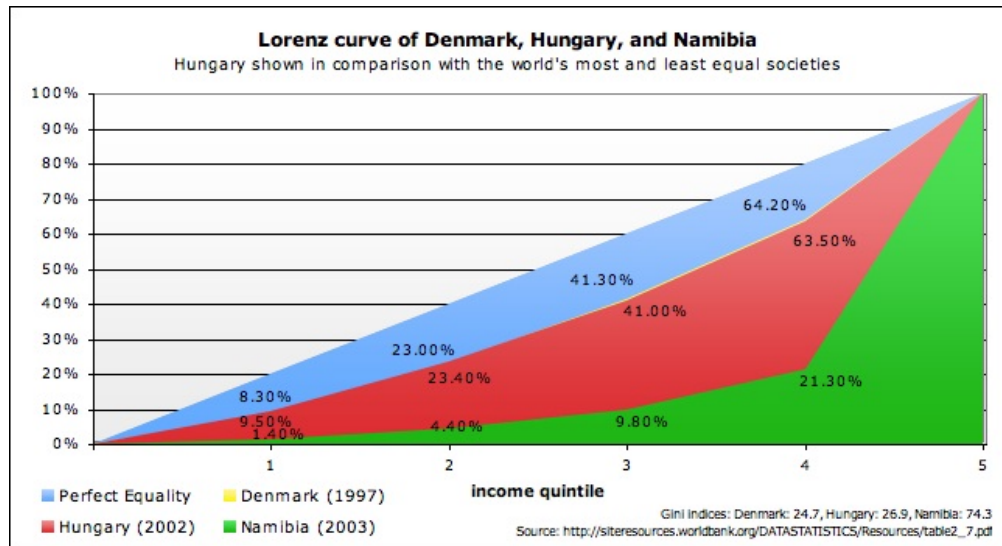
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- Lorenz curve
- Deciles / quintiles
- Gini coefficient



Source: World Bank

Other dimensions of inequalities

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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



ok 2009



Measuring inequalities

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Classical indicators of inequalities and poverty

- Gini index
- Poverty headcount
- poverty gap



Inclusive growth

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- 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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- 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

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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

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

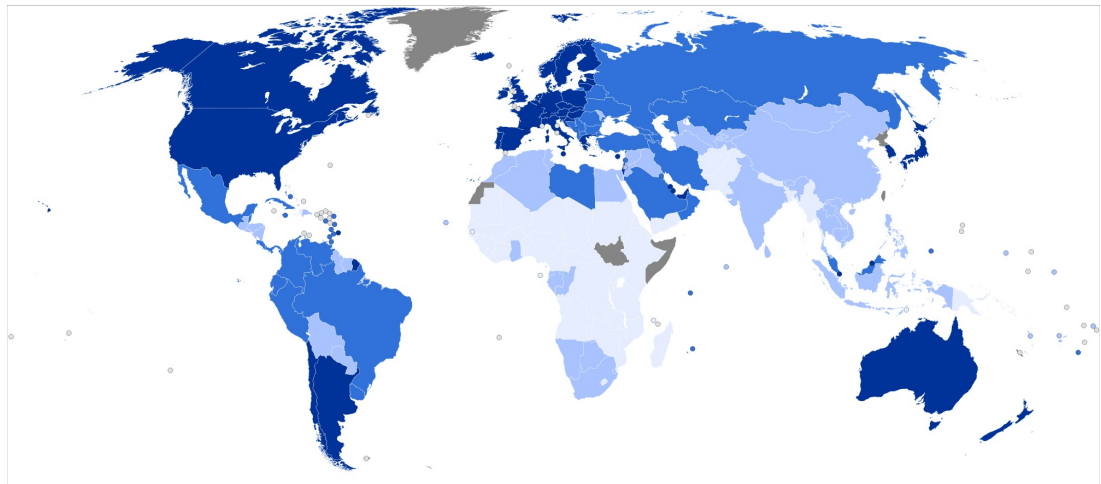
Fundamental causes

Development

Income

Redistribution

Social and political indicators



Source: PNUD. Darker = HDI is higher

HDI and GDP/capita in PPP in Africa

The main indicators of economic development

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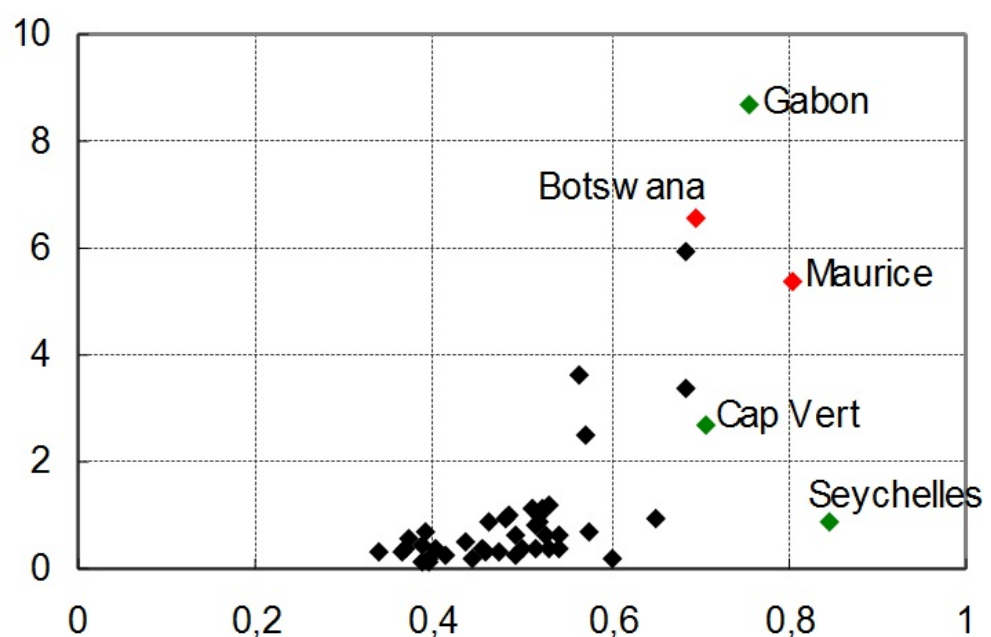
Fundamental causes

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Source: AS as from the World Bank and UNDP. x:HDI, y:GDP/capita in PPP