

Economic Growth

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Please Read Me

- Check the message **Welcome greeting** published in the News Bulletin Board.
- Dear student please edit your profile uploading a photo where your face is clearly visible.
- The purpose of the virtual meetings is to answer questions and not to make a summary of the study material.
- This presentation is based on ([Cardenas 2020, chap. 3](#))

Purpose

Analyze the determinants of economic growth

What is economic growth?

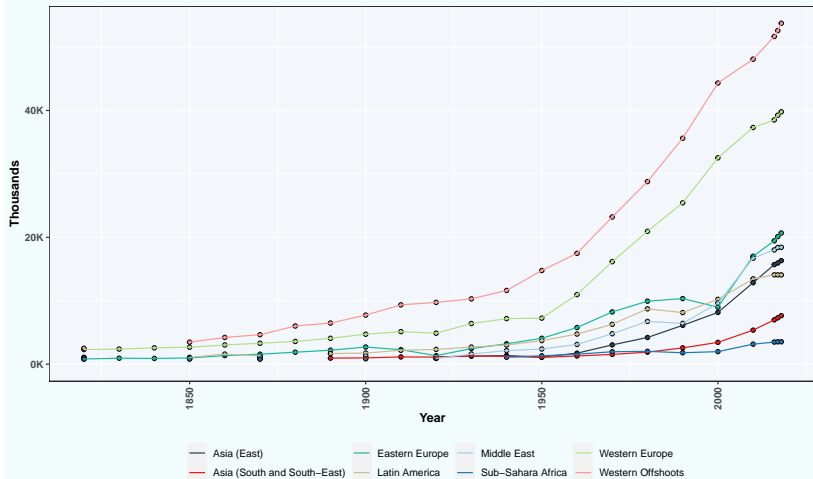
- Economic growth can be define as an increase in the quantity and quality of products that a society produces and consumes ([Roser 2013](#))
- The definition of economic growth is straightforward but this concept is extremely difficult to measure ([Roser 2013](#))
- Economists often measure economic growth as an increase in Gross Domestic Product per capita by applying inflation adjustments. Furthermore, if international comparisons are necessary also purchase power parity (PPP) adjustments are applied ([Roser 2013](#))
- From the long-term perspective of social history economic growth is a recent phenomena ([Roser 2013](#)) & ([Bolt and Zanden 2020](#))

Economic growth from a long-term perspective

GDP per-capita purchasing power parity, Latin America and the World

Variable units: constant 2011 international USD

Period: 1820, 1830, 1840, 1850, 1860, 1870, 1880, 1890, 1900, 1910, 1920, 1930, 1940, 2016–2018



Source: Maddison Project Database, version 2020 (Bolt and Zanden 2020)
Last update date: 2020-11-02

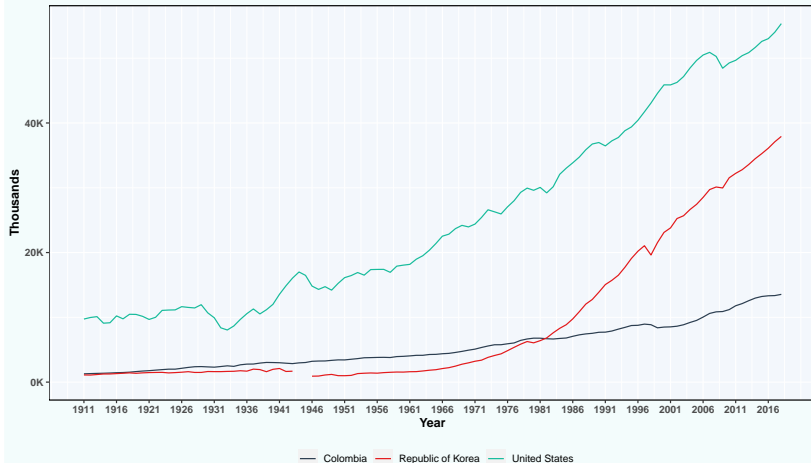
Economic growth paths

GDP per-capita purchasing power parity, Colombia, USA and South Korea

Variable units: constant 2011 international USD

Period: 1911–2018

No information for South Korea in 1944–1945



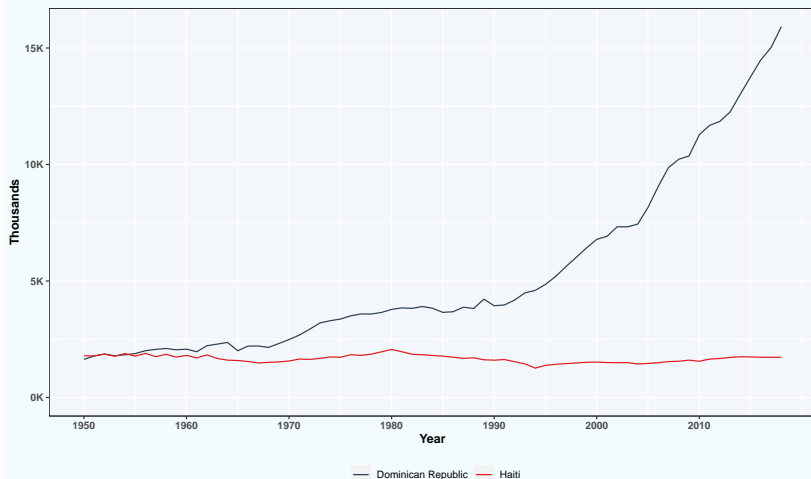
Source: Maddison Project Database, version 2020 (Bolt and Zanden 2020)
Last update date: 2020-11-02

Economic growth paths

GDP per-capita purchasing power parity, Haiti and Dominican Republic

Variable units: constant 2011 international USD

Period: 1950–2018



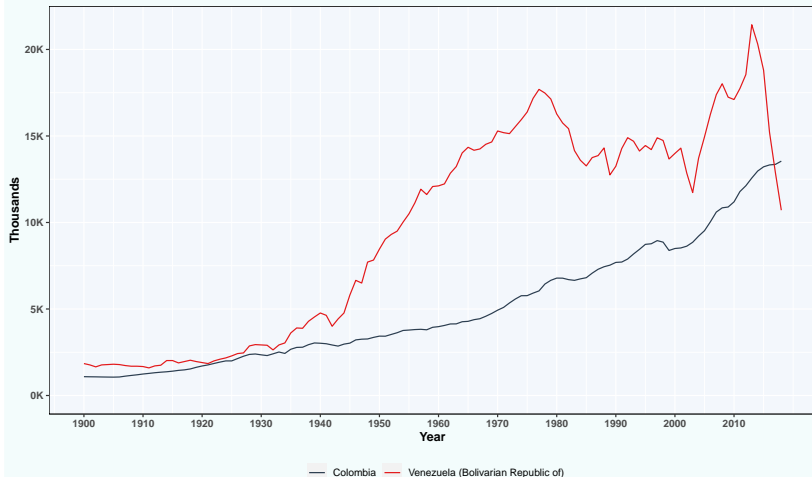
Source: Maddison Project Database, version 2020 (Bolt and Zanden 2020)
Last update date: 2020-11-02

Economic growth paths

GDP per-capita purchasing power parity, Colombia and Venezuela

Variable units: constant 2011 international USD

Period: 1900–2018

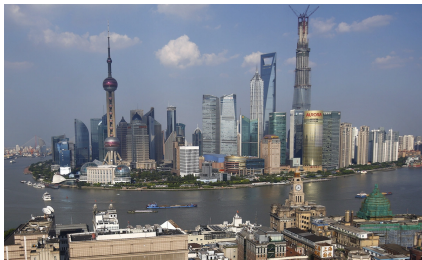


Source: Maddison Project Database, version 2020 (Bolt and Zanden 2020)
Last update date: 2020-11-02

Economic growth in images



(a) 1987



(b) 2013

Figure 1: Shanghai's financial district of Pudong ([Taylor 2013](#))

Economic growth in images

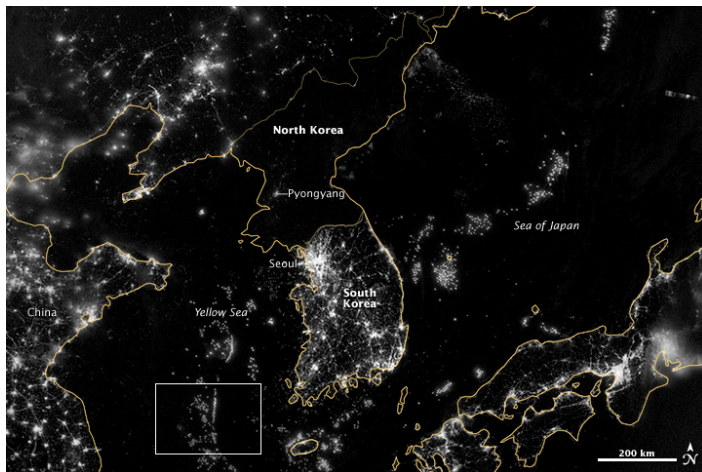


Figure 2: Korean peninsula, nocturnal luminosity: September 24, 2012
([Observatory, Allen, and Simmon 2012](#))

Economic growth in images

- Google Earth Timelapse Dubai, UAE check out¹:
 - <https://youtu.be/pjM26oRlay0>
- Explore about Timelapse at:
<https://earthengine.google.com/timelapse>
 - Urban growth
 - Dalian, Liaoning, China
 - Las Vegas, Nevada, USA

¹Timelapse is a global, zoomable video that lets you see how the Earth has changed over the past 32 years.

Inputs to obtain GDP

Gross domestic product is obtained by using the following inputs:

- Labor
 - Quantity of labor:
 - Employment²
 - Hours worked
 - Quality of Labor:
 - Employment by educational attainment
 - Compensation by educational attainment

²Includes individuals employed aged 15 years or over where this age range is necessary for international comparisons.

Inputs to obtain GDP

Gross domestic product is obtained by using the following inputs:

- Produced non-financial fixed assets³
 - Dwellings
 - Buildings other than dwellings
 - Other structures
 - Land improvements
 - Transport equipment
 - Information and Computer Technology (ICT) equipment
 - Other machinery and equipment
 - Weapons systems
 - Cultivated biological resources

³Other non-financial assets can be included but these are the ones that are usually measured. For more information check out ([OECD 2009](#)) and ([OECD 2001](#))

Inputs to obtain GDP

Other factors that affect the Gross Domestic Product different from labor and produced non-financial fixed assets

- These factors are not directly observable but are used in growth accounting to calculate **Total Factor Productivity/Multifactor productivity** as an approximation to technological change
 - Technological change is defined as changes in the Gross Domestic Product that are not due to changes in inputs

Growth accounting

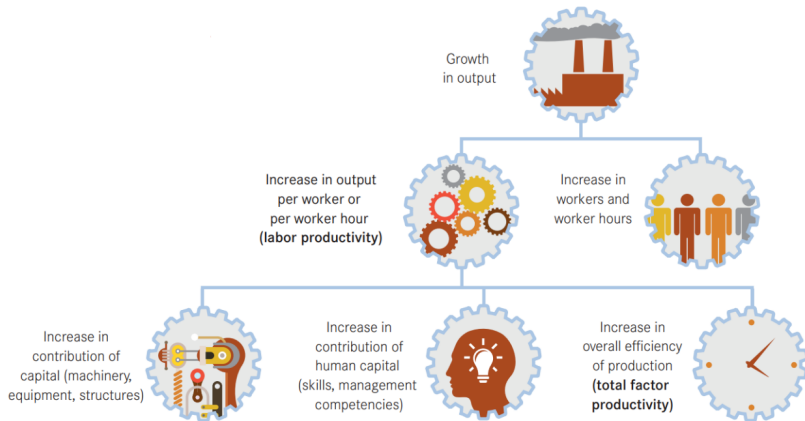


Figure 3: Labor productivity and total factor productivity (Vries and Azeez Erumban 2017, 21, fig 3)

Growth accounting

- Methodology applied to Colombia for selected years

Measure	1990	2010	2023
Growth in real GDP	4.1	4.4	1.1
Contribution of Labor Quantity to real GDP growth	1.4	2.1	-1.2
Contribution of Labor Quality to real GDP growth	0.8	1.1	0.2
Contribution of Total Capital Services to real GDP growth	1.2	2.5	1.9
Growth of Total Factor Productivity	0.7	-1.2	0.1

Source: Total Economy Database - Growth Accounting and Total Factor Productivity

Last update: 2023-04

Proximate and fundamental determinants of economic growth

- Proximate determinants
 - Increase in workers and worked hours
 - Increase in produced non-financial fixed assets
 - Increase in educational attainment, experience and skills (lifelong learning)
 - Increase in overall efficiency of production (total factor productivity)

Proximate and fundamental determinants of economic growth

- Fundamental determinants
 - Better institutions ([Cardenas 2020, chap. 4](#))
 - Integration into the global economy ([Cardenas 2020, chap. 5](#))
 - Geographical conditions

Acknowledgments

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- To the **R Core Team**, the creators of **RStudio IDE** and the authors and maintainers of the packages **tidyverse**, **knitr**, **janitor**, **kableExtra**, and **tinytex** for allowing me to access these tools without paying for a license
- To the **Linux kernel community** for allowing me the possibility to use some **Linux distributions** as my main **OS** without paying for a license

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