Gross Domestic Product (GDP)

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Contents

Please Read Me

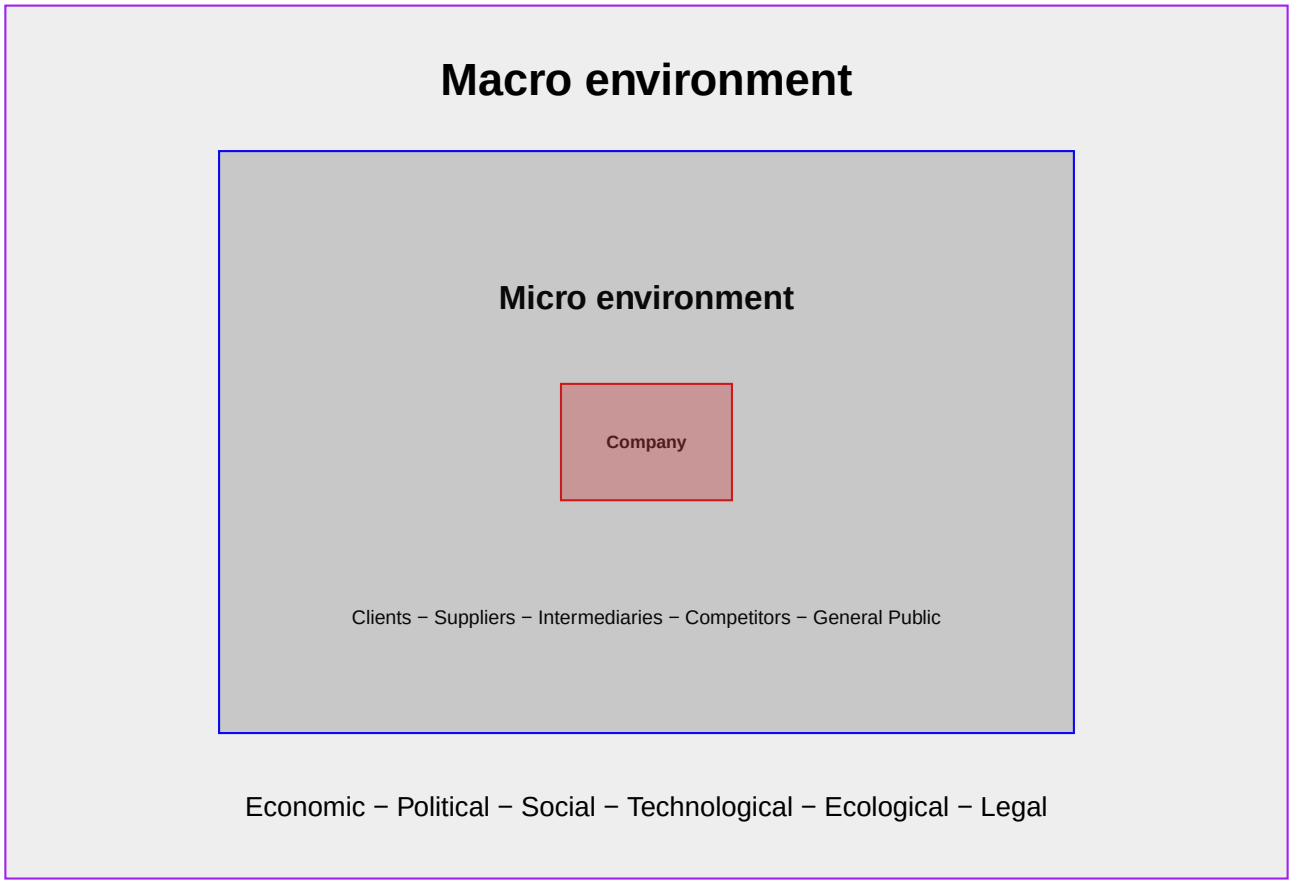
- Check the message **Welcome greeting** published in the News Bulletin Board.
- Dear student please edit your profile uploading a photo where your face is clearly visible.
- The purpose of the virtual meetings is to answer questions and not to make a summary of the study material.
- This presentation is based on (Blanchard and Johnson 2017, Chapters 1 & 2)

Purpose

Introduce the students to the three (3) main variables in macroeconomics (production, inflation and unemployment) with an emphasis on how the two (2) first variables are measured (production and inflation).

Economic macroenvironment and the company

- Set of external economic factors and forces that are not controlled by an organization but that influence its development.



Based on https://foda−dafo.com/

Metrics: Economic macroenvironment

- **Aggregate production**
  - Gross Domestic Product (GDP)
    - Nominal/Real, per-capita, purchase power parity
- **Prices**
  - Index
    - GDP deflator, Consumer price index, Producer Price Index
  - Inflation
    - Monthly, Annual, Accumulated (annual)

Metrics: Economic macroenvironment

- **Exchange rate**
  - "Tasa Representativa del Mercado" (Colombia)
    - COP/USD, COP/EUR
- **Interest rate**
  - "Tasa de intervención del Banco de la República" (Colombia), Federal Funds Rate (USA), deposit rate (tasa de captación), placement rate (tasa de colocación)

Metrics: Economic macroenvironment

Other metrics that we will not examine because the course is quite short but that are also relevant:

- **Consumer confidence**
  - Índice de Confianza del Consumidor (Fedesarrollo, Colombia)
  - Consumer Confidence Index (The Conference Board, USA)
- **Inequality**
  - Gini coefficient
- **Poverty**
  - Poverty line, Poverty Rate
  - Multidimensional Poverty Index

Gross Domestic Product (GDP)

- **Product**: refers to what we are trying to measure as a result of a production process (Lequiller and Blades 2014).
- **Domestic**: indicates that the production to be taken into account is the one that is carried within a certain territory clearly delimited (Lequiller and Blades 2014).
- **Gross**: It means that depreciation is not deducted (in economy it is called consumption of fixed capital). In other words, the decrease in the value of the assets due to physical deterioration, foreseeable wear or accidental damage is not deducted (Lequiller and Blades 2014).

Gross Domestic Product (GDP)

Table 1: Steel Company (Firm 1)

Categories	Value
Steel sales	$100
Expenses	$80
Wages	$80
Profit	$20

[1] Firm 1 sells $100 of steel to Firm 2

Table 2: Car Company (Firm 2)

Categories	Value
Revenue from sales	$200
Expenses	$170
Wages	$70
Steel purchases	$100
Profit	$30

[1] Firm 2 transfers the expenses of the purchases of steel to the final consumer

Gross Domestic Product (GDP)

- **Double counting problem**
  - If you add in monetary terms the production of both companies you get a total of $300.
  - However, at the end of the period with steel, workers and machines the economy produced only $200 in cars.
  - If the production of the Steel Company and the Car Company is added, the value of steel is being added two (2) times.
  - It is necessary to eliminate at some stage of the production process the value of steel in our example.

Gross Domestic Product (GDP)

- GDP is the sum of value added in a territory during a given period.

In economics the **value added** is the value that is added at each stage of production. It is defined as the difference between the **Production in Monetary Terms (PMT)** and the **Consumption of Intermediate Goods (CIG)**.

The **CIG** is the monetary value of inputs that are *completely transformed and depleted* in the production process and that are used to produce other products.

Gross Domestic Product (GDP)

- Example of inputs that are not part of the **CIG**:
  - **Wages paid by an organization to its workers**: labor can be used for several periods and although its value is affected in the periods close to the age of retirement of individuals, is not fully consumed in the production process.
  - **Assets that belong to an organization and depreciation (consumption of fixed capital)**: assets are durable goods that can be used for several periods of time and although their value is affected by physical deterioration, foreseeable wear and accidental damage, depreciation (consumption of fixed capital) is included in the GDP accounting.

Gross Domestic Product (GDP)

- Steel Company (Firm 1)
  - **PMT**: \$100
  - **CIG**: \$0 ("Wages are not part of **CIG**")
  - **Value added**: \$100 - \$0 = \$100
- Car Company (Firm 2)
  - **PMT**: \$200
  - **CIG**: \$100 ("Wages are not part of **CIG**")
  - **Value added**: \$200 - \$100 = \$100
- GDP
  - **Total Value Added** = Value added Steel Company (Firm 1) + Value added Car Company (Firm 2) = \$100 + \$100 = **GDP**

Gross Domestic Product (GDP)

- GDP is the sum of the different incomes in a territory during a given period.

It is the sum of all the different incomes that individuals perceive like salaries and benefits.

- Steel Company (Firm 1)
  - **Workers Income**: \$80
  - **Owners/partners Income**: \$20
- Car Company (Firm 2)
  - **Workers Income**: \$70
  - **Owners/partners Income**: \$30
- GDP
  - **Total Income** = \$80 + \$20 + \$70 + \$30 = \$200 = **GDP**

Gross Domestic Product (GDP)

- GDP is the value of all the *final* goods and services produced in a territory during a given period.

To measure the final goods and services that are produced, the basic macroeconomic identity is used: $\mathbf{GDP = C + I + G + X}$.

C: The final production can be consumed **within the territory** (consumption of households and non-profit institutions serving hosueholds).

I: The final production can be accumulated to consume in other periods **within the territory** (Investment or Gross capital formation).

G: The final production can be used to provide goods and services by the government **within the territory** (Goverment expenditure).

X: Production can be used to meet the needs of individuals or organizations **outside the territory** (Exports).

Gross Domestic Product (GDP)

In our example, the final production are the sales of the Car Company (Firm 2): \$200. The cars sold by this company can be exported or consumed by households within the territory.

We do not have a government or non-profit institutions nor do we assume that production accumulates, that is, there is no Investment or Gross capital formation.

- GDP
  - **Final production** $= \$200 =$ **C + X + 0 = C + I + G + X = GDP**

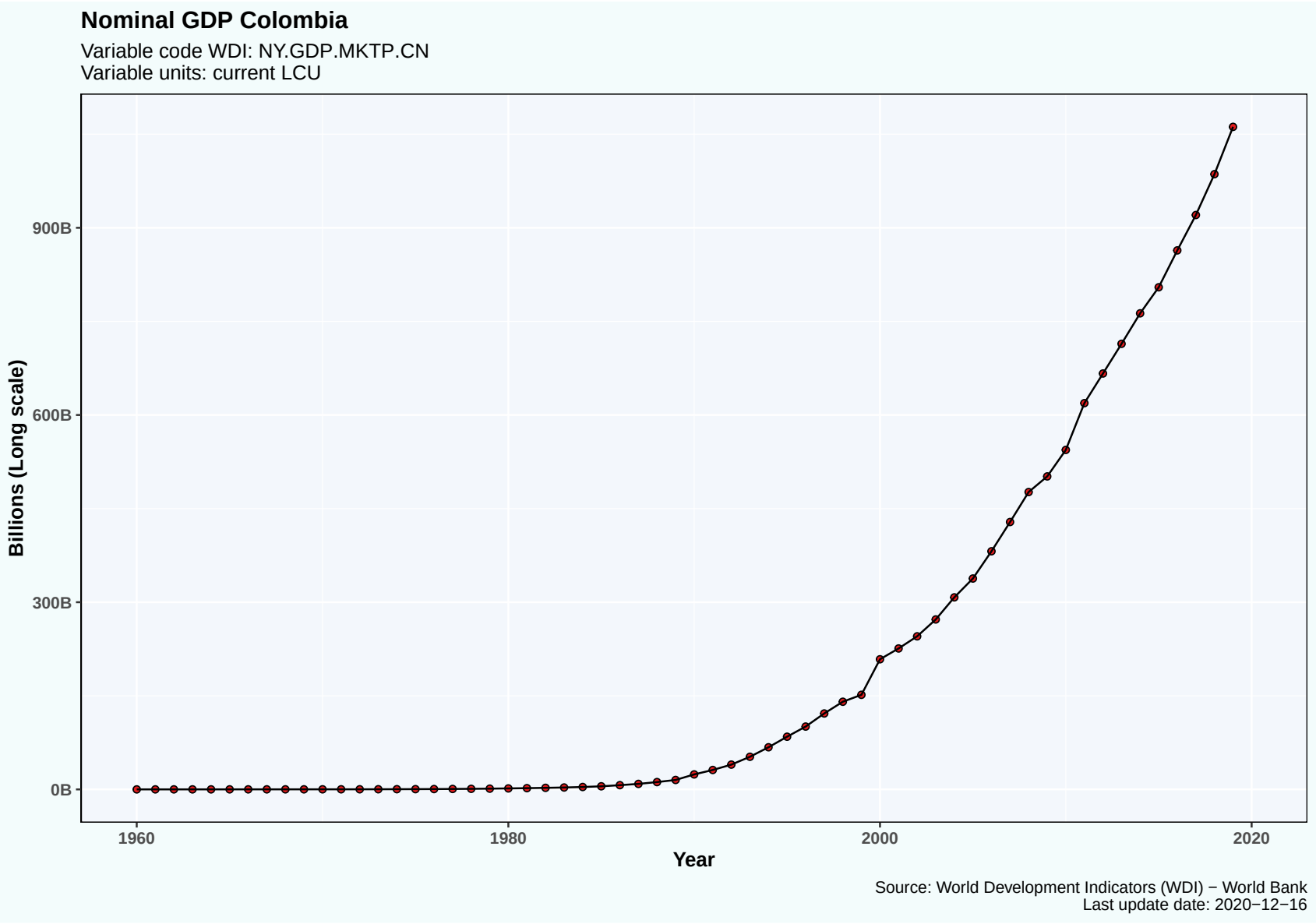
GDP: nominal and real

A value in monetary or nominal terms is the result of multiplying prices by quantities. If a company produces 200 cars a year and sells at a price of \$50/car the production is 200 car * \$50/car = \$10000.

In that sense, production in monetary terms can increase in three (3) ways:

- Only prices increase
- Only quantities increase
- Both prices and quantities increase

GDP: nominal and real

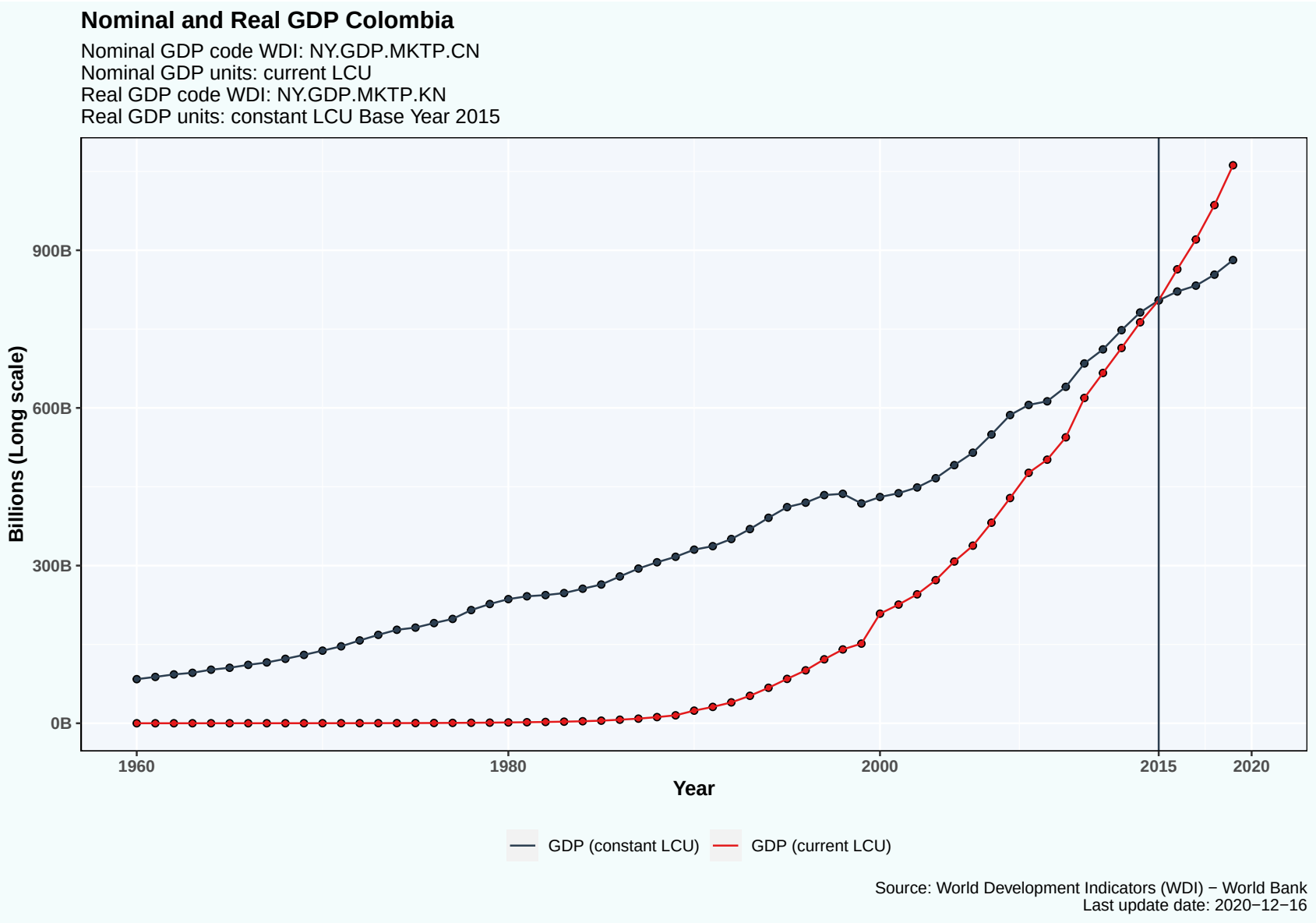


GDP: nominal and real

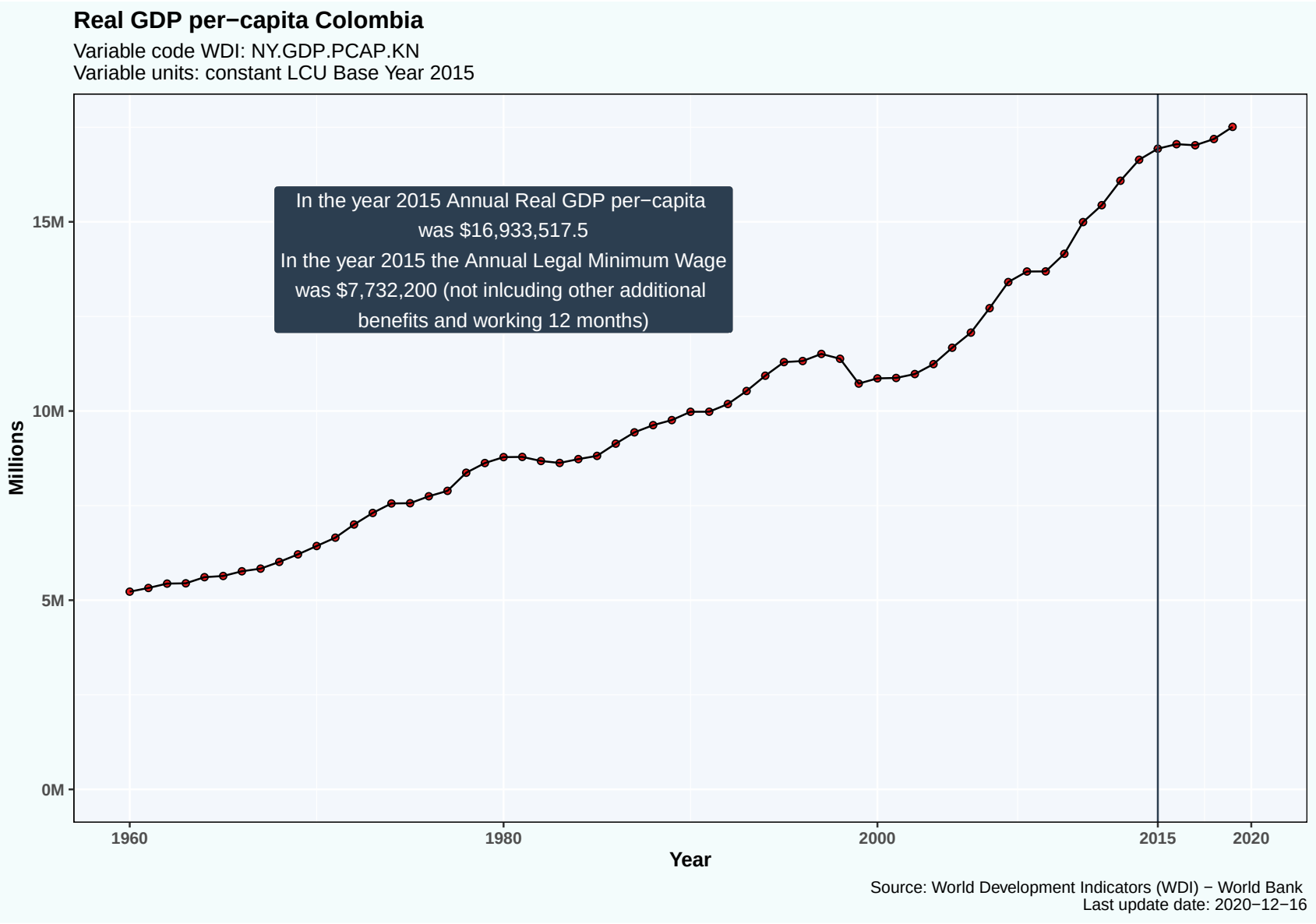
- Real GDP **tries** to eliminate the effect that prices have on production to examine the increase in quantities.
- Real GDP measures the production within a territory for different periods usually using the same prices of a base period known as constant monetary units in the economic lingo.
- Example:

Year	Quantity Cars	Price Cars	Nominal GDP	Real GDP Base 2009
2008	10	$20,000	$200,000	$240,000
2009	12	$24,000	$288,000	$288,000
2010	13	$26,000	$338,000	$312,000

GDP: nominal and real



Real GDP per-capita and its growth



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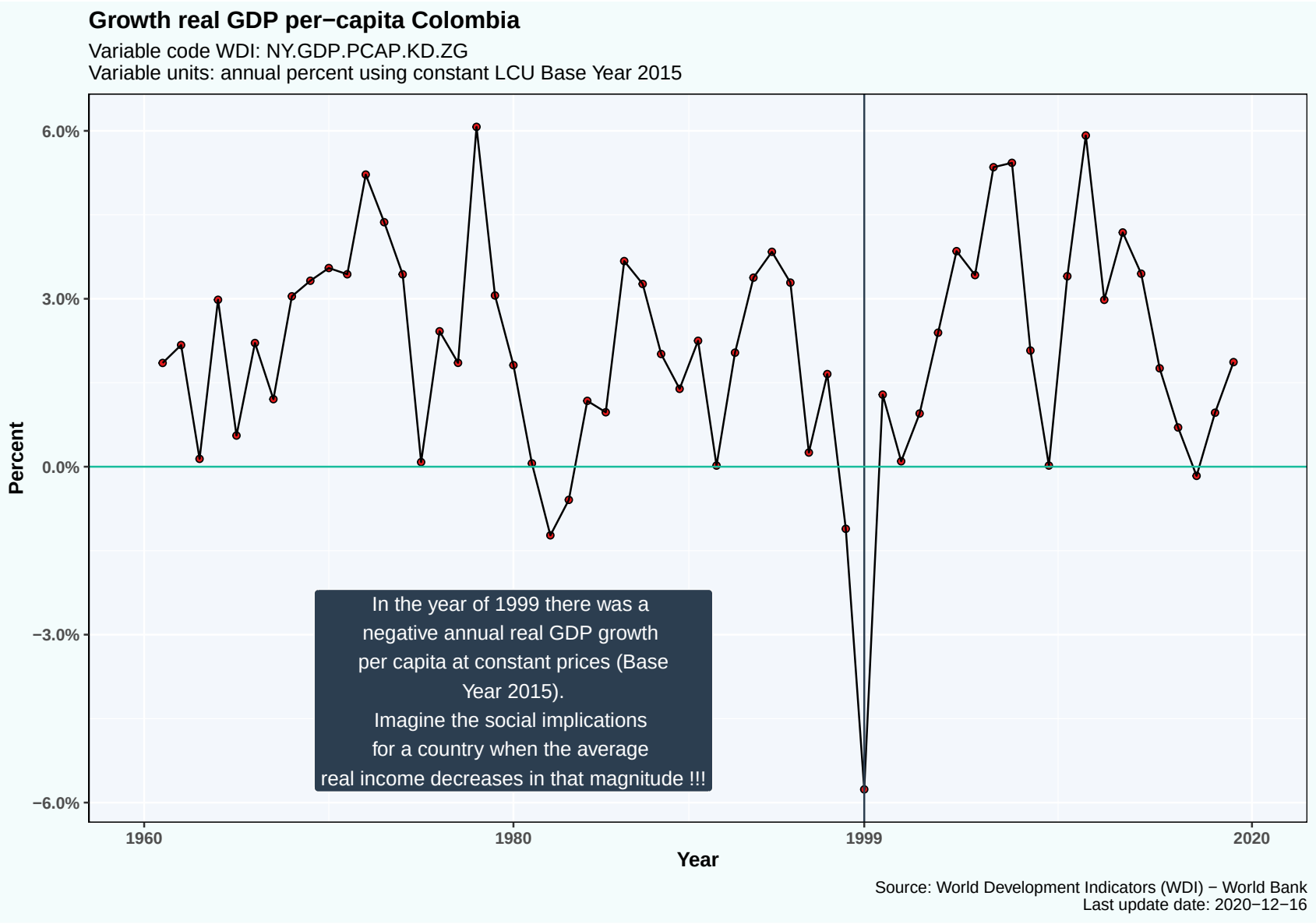

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