GDP in Poland 2004-2020

Impact of COVID pandemic

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AGENDA

**GDP in Poland 2004-2020
Impact of COVID pandemic**

1. What is GDP?
2. How to calculate annual GDP?
3. How Poland's GDP changed during 2004-2020?
      3.1. Nominal value in PLN and USD.
      3.2. Change in PLN.
      3.3. Change in USD.
4. How to calculate average growth of GDP?
5. Is GDP the best indicator?
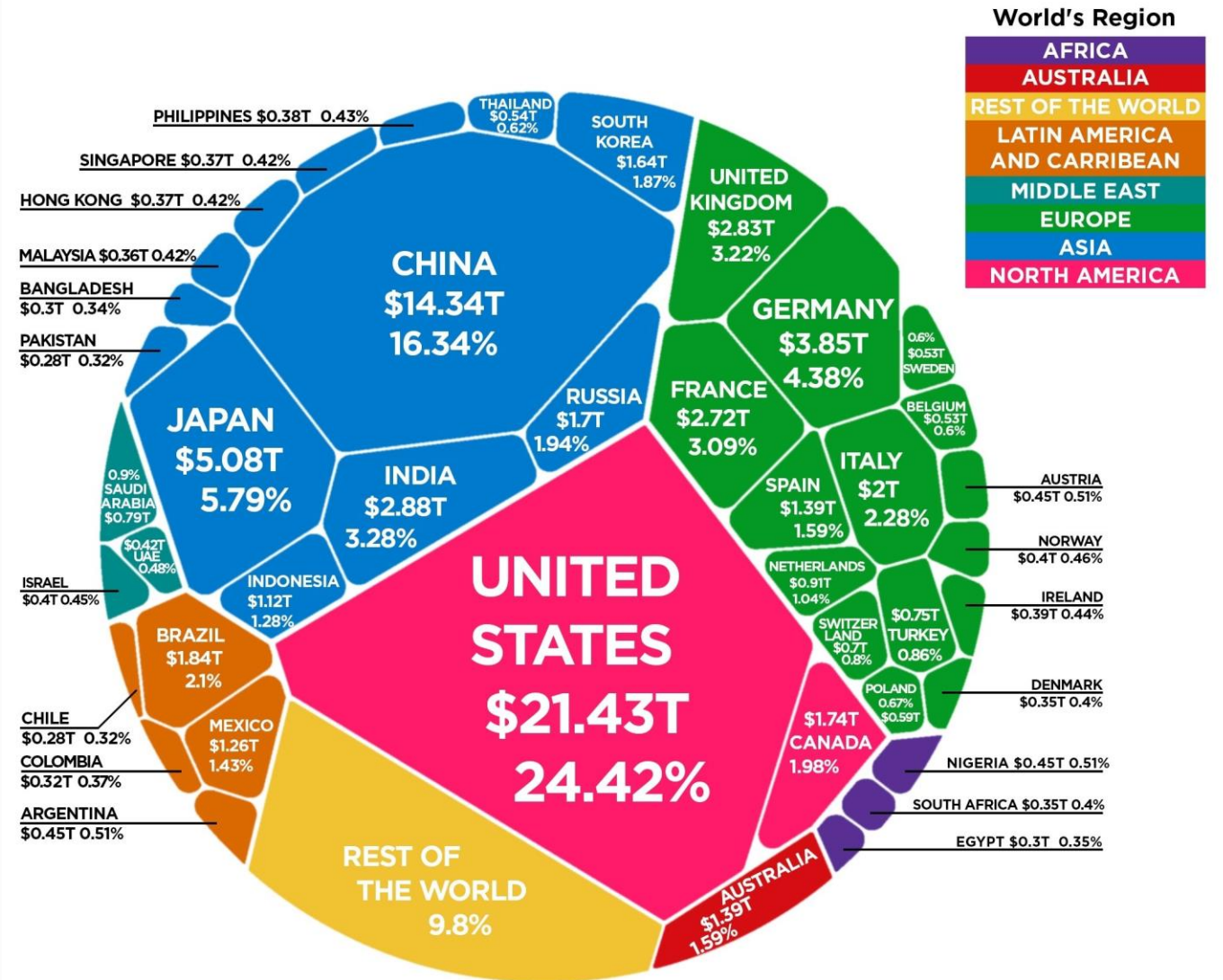6. Any prediction of Poland's GDP in 2021?

1. What is GDP?

ABBREVIATION

- GDP = Gross Domestic Product

DEFINITION

- GDP is the <u>total value</u>
  of all the finished <u>goods and services</u>
  produced within a country's borders

The World Economy
Gross Domestic Product (GDP) by Country 2019

World's Region
AFRICA
AUSTRALIA
REST OF THE WORLD
LATIN AMERICA AND CARRIBEAN
MIDDLE EAST
EUROPE
ASIA
NORTH AMERICA

PHILIPPINES $0.38T 0.43%
THAILAND $0.54T 0.62%
SOUTH KOREA $1.64T 1.87%
SINGAPORE $0.37T 0.42%
HONG KONG $0.37T 0.42%
UNITED KINGDOM $2.83T 3.22%
MALAYSIA $0.36T 0.42%
BANGLADESH $0.3T 0.34%
PAKISTAN $0.28T 0.32%
CHINA $14.34T 16.34%
GERMANY $3.85T 4.38%
0.6% $0.53T SWEDEN
BELGIUM $0.53T 0.6%
RUSSIA $1.7T 1.94%
FRANCE $2.72T 3.09%
JAPAN $5.08T 5.79%
INDIA $2.88T 3.28%
SPAIN $1.39T 1.59%
ITALY $2T 2.28%
AUSTRIA $0.45T 0.51%
0.9% SAUDI ARABIA $0.79T
$0.42T UAE 0.48%
INDONESIA $1.12T 1.28%
NETHERLANDS $0.91T 1.04%
NORWAY $0.4T 0.46%
ISRAEL $0.4T 0.45%
UNITED STATES $21.43T 24.42%
SWITZER LAND $0.7T 0.8%
$0.75T TURKEY 0.86%
IRELAND $0.39T 0.44%
BRAZIL $1.84T 2.1%
CHILE $0.28T 0.32%
MEXICO $1.26T 1.43%
POLAND 0.67% $0.59T
$1.74T CANADA 1.98%
DENMARK $0.35T 0.4%
COLOMBIA $0.32T 0.37%
NIGERIA $0.45T 0.51%
ARGENTINA $0.45T 0.51%
SOUTH AFRICA $0.35T 0.4%
REST OF THE WORLD 9.8%
AUSTRALIA $1.39T 1.59%
EGYPT $0.3T 0.35%

Article & Sources:
https://howmuch.net/articles/the-world-economy-2019
https://databank.worldbank.org

howmuch.net

2. How to calculate GDP?

$$GDP = C + I + G + \Delta E$$

GROSS DOMESTIC PRODUCT

Personal Consumption

Government Spending

Business Investment

Exports Imports

3.1. Poland's GDP during 2004-2020 [nominal value]

Poland's GDP

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
■ in bln USD	255,1	306,1	344,6	429	533,6	439,7	479,8	528,3	498,5	521	542,5	477,8	472,6	526,5	587,4	595,9	594,2
■ in bln PLN	933,1	990,5	1069,8	1187,6	1286,1	1372,2	1445,3	1566,8	1629,4	1656,8	1719,1	1799,4	1851,2	1989,3	2116,4	2273,6	2323,9

■ in bln USD   ■ in bln PLN

[in %]

Poland's GDP

$$GDP_{n+1} = \frac{GDP_{n+1} - GDP_n}{GDP_n} * 100\%$$
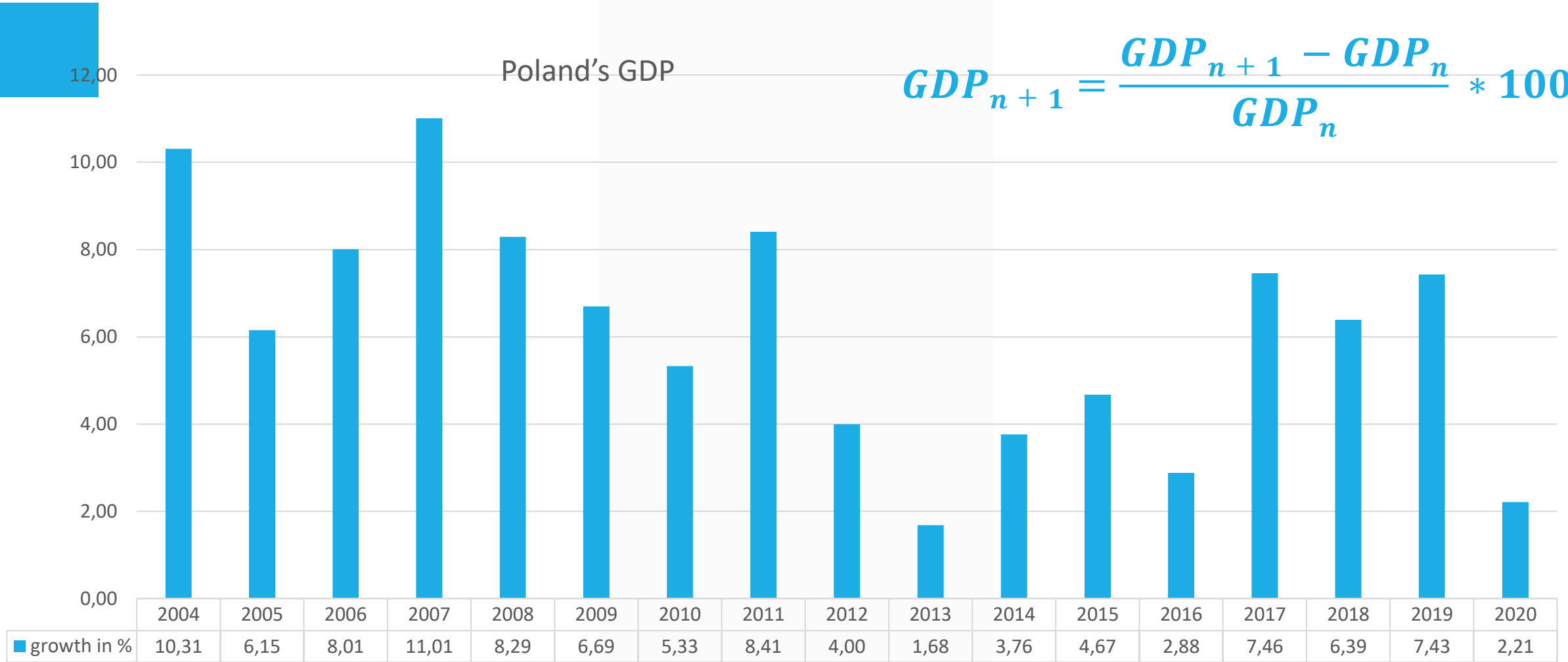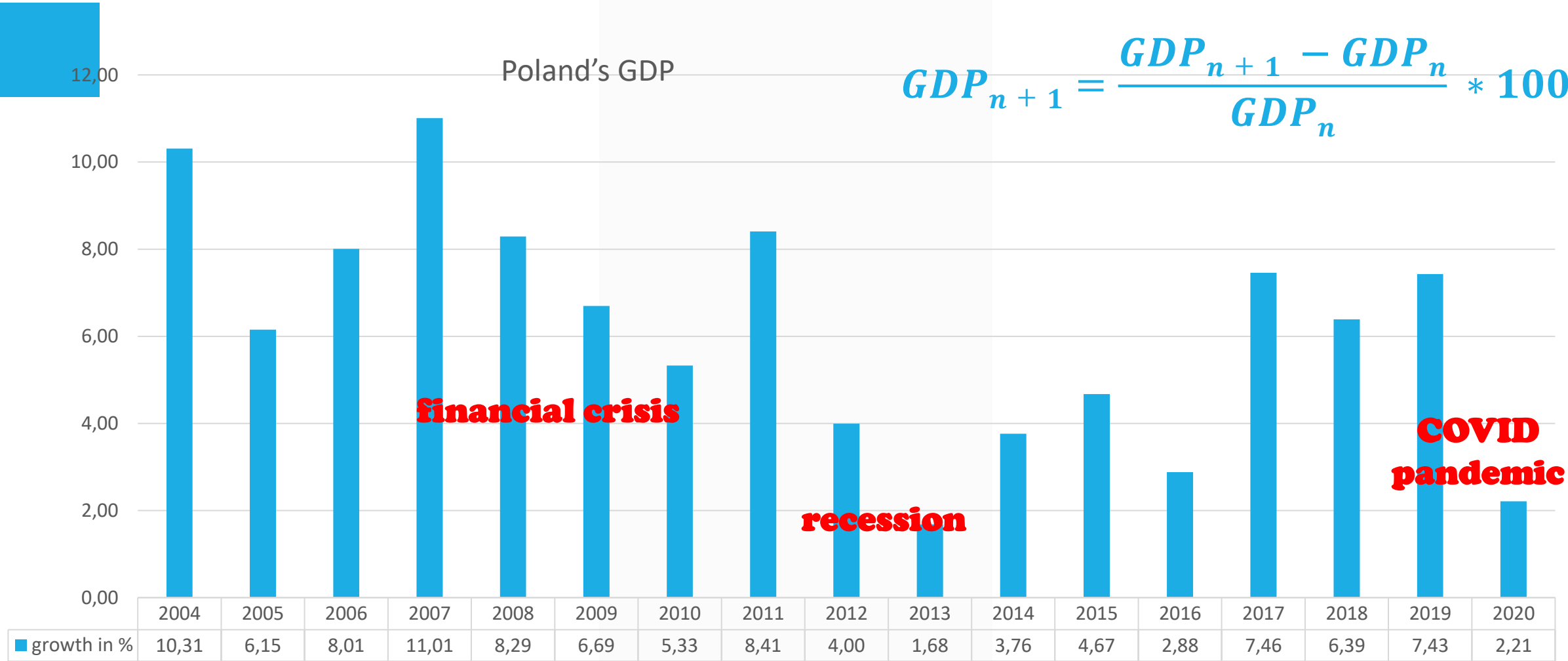
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
growth in %	10,31	6,15	8,01	11,01	8,29	6,69	5,33	8,41	4,00	1,68	3,76	4,67	2,88	7,46	6,39	7,43	2,21

growth in %

[in %]

Poland's GDP

$$GDP_{n+1} = \frac{GDP_{n+1} - GDP_n}{GDP_n} * 100\%$$

financial crisis

recession

COVID pandemic

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
growth in %	10,31	6,15	8,01	11,01	8,29	6,69	5,33	8,41	4,00	1,68	3,76	4,67	2,88	7,46	6,39	7,43	2,21

growth in %

[in %]

Poland's GDP

$$GDP_{n+1} = \frac{GDP_{n+1} - GDP_n}{GDP_n} * 100\%$$

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
■ growth in %	17,13	19,99	12,58	24,49	24,38	-17,60	9,12	10,11	-5,64	4,51	4,13	-11,93	-1,09	11,40	11,57	1,45	-0,29

■ growth in %

3.3. Poland's GDP (growth in USD) change [in %]

Poland's GDP

$$GDP_{n+1} = \frac{GDP_{n+1} - GDP_n}{GDP_n} * 100\%$$

financial crisis

recession

COVID pandemic

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
growth in %	17,13	19,99	12,58	24,49	24,38	-17,60	9,12	10,11	-5,64	4,51	4,13	-11,93	-1,09	11,40	11,57	1,45	-0,29

growth in %

4. How to calculate average growth of GDP?

DEFINITION OF GEOMETRIC MEAN

- A mean or average, which indicates the central tendency or typical value of a set of numbers by using the product of their values (as opposed to the arithmetic mean which uses their sum).
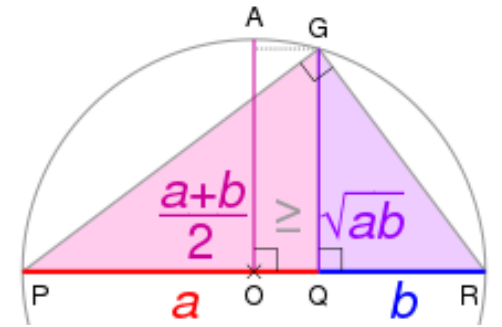
WHAT DOES IT MEAN?

- $GDP_{avg} = \sqrt[n]{GDP_1 * \cdots * GDPn}$

HOW TO COUNT IT FOR 2004-2020?

- $GDP_{avg\ 2004\text{-}2020} = \sqrt[17]{1.1031 * 1.0615 * 1.0801 * \ldots * 1.0639 * 1.0743 * 1,0221}$ = .1,0613

- $GDP_{avg\ 2004\text{-}2008} = \sqrt[5]{1.1031 * 1.0615 * 1.0801 * 1.1101 * 1.0829} = \sqrt[5]{1.52037}$ = 1.0874

- $GDP_{avg\ 2019\text{-}2020} = \sqrt{1.0743 * 1.0221} = \sqrt[5]{1.098042}$ =...1,0478

5. Is GDP the best indicator?

GDP_{NOMINAL} VS GDP_{REAL}

Real GDP is nominal GDP, adjusted for **inflation**

GDP PER CAPITA

- Gross Domestic Product (GDP) per capita shows a country's GDP divided by its total population

- GDP per capita = $\dfrac{\text{country's GDP}}{\text{total population}}$

- $\text{GDP}_{\text{PL 2020}}$ = 594,2 bln USD

- Population of Poland in 2020 = 37,950,000

- GDP PL per capita = $\dfrac{594{,}200{,}000{,}000 \text{ USD}}{37{,}950{,}000}$ = . 15 660 USD

6. Any prediction of Poland GDP in 2021?

IMPACT OF COVID PANDEMIC

Lockdowns, broken supply chaines, lower production

IMPACT OF ANTI-CRISIS SHIELD

- Goverment's help for companies

WHAT IS THE OUTCOME?

- Any predictions for 2021?

Thank you for yours attention!