

Modern Growth Theories

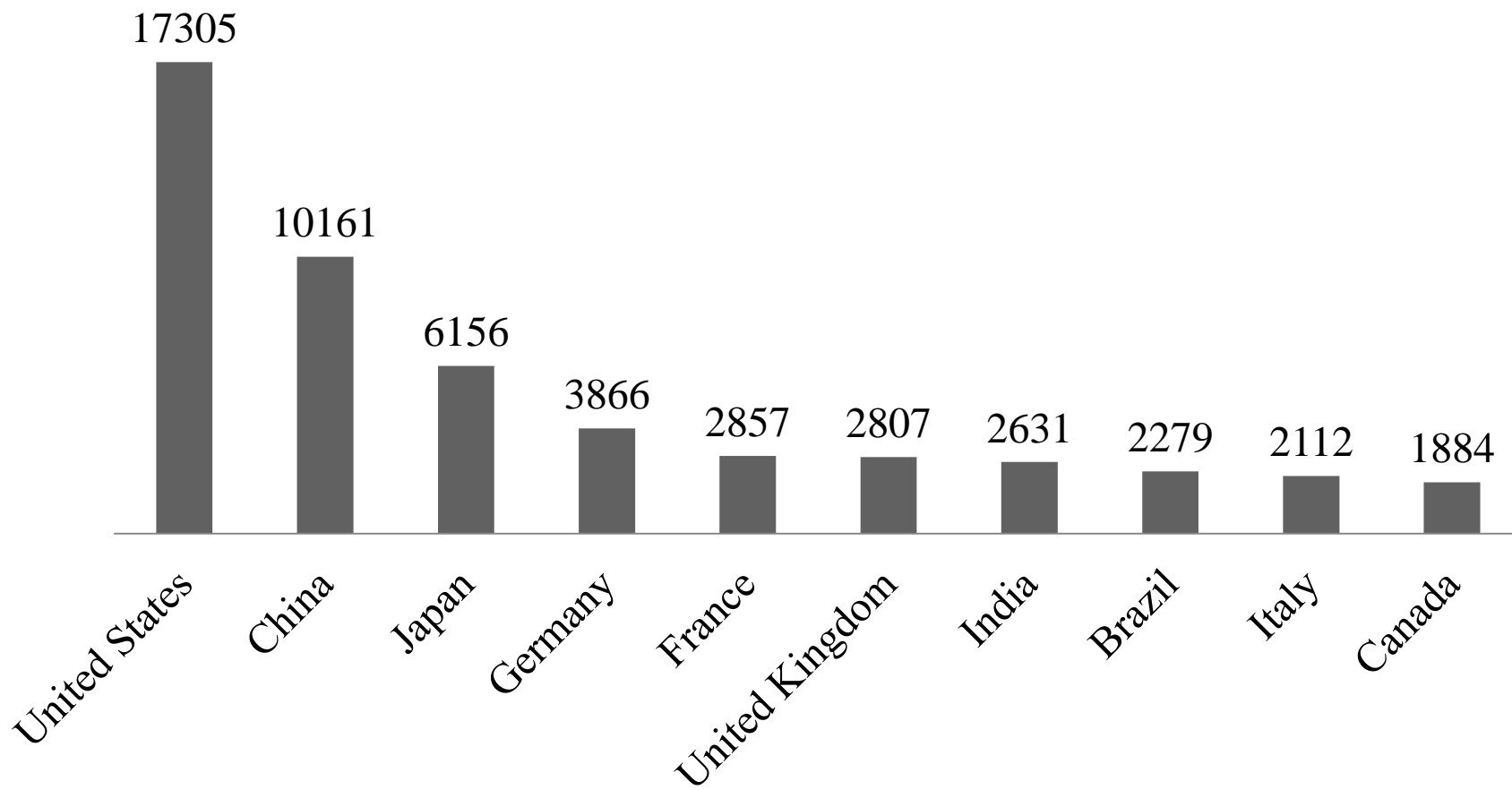
Tutorials 2

Dr Wioletta Nowak

- An introduction to modern economic growth
- Measures of economic growth and decomposition of GDP growth rate

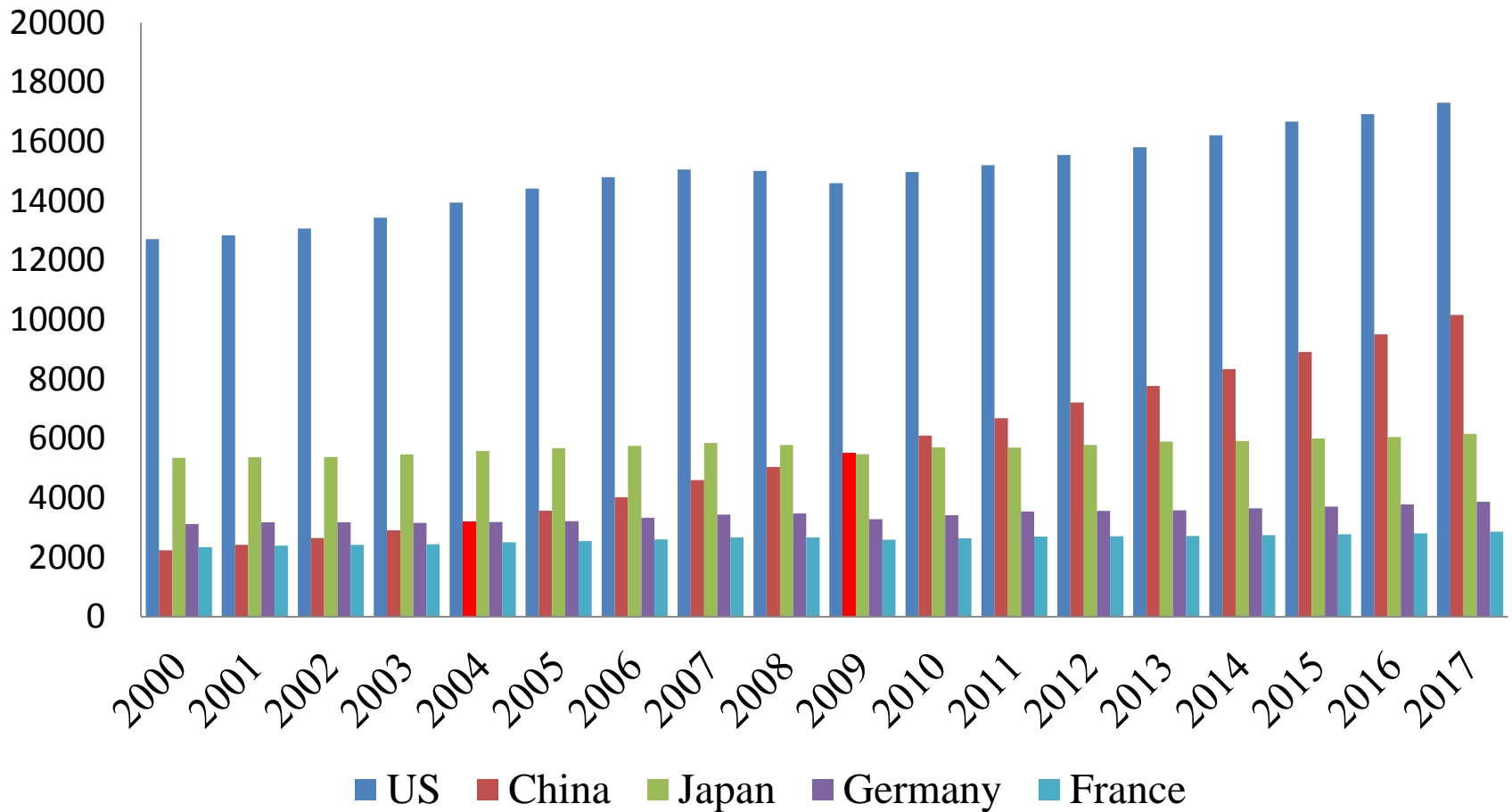
GDP (constant 2010 US\$), 2017

Source: <https://data.worldbank.org>



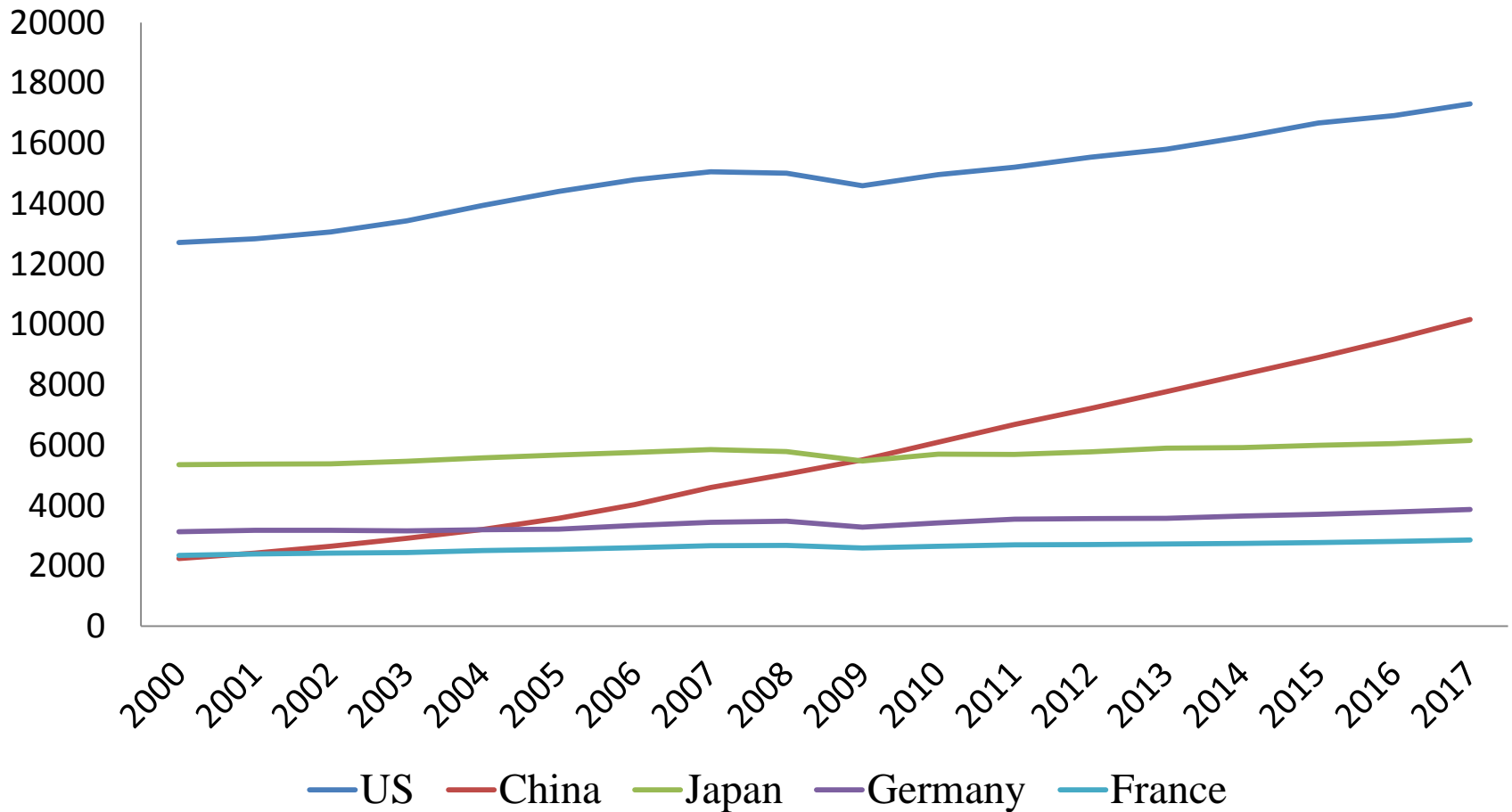
GDP (constant 2010 US\$), 2000-2017

Source: <https://data.worldbank.org>



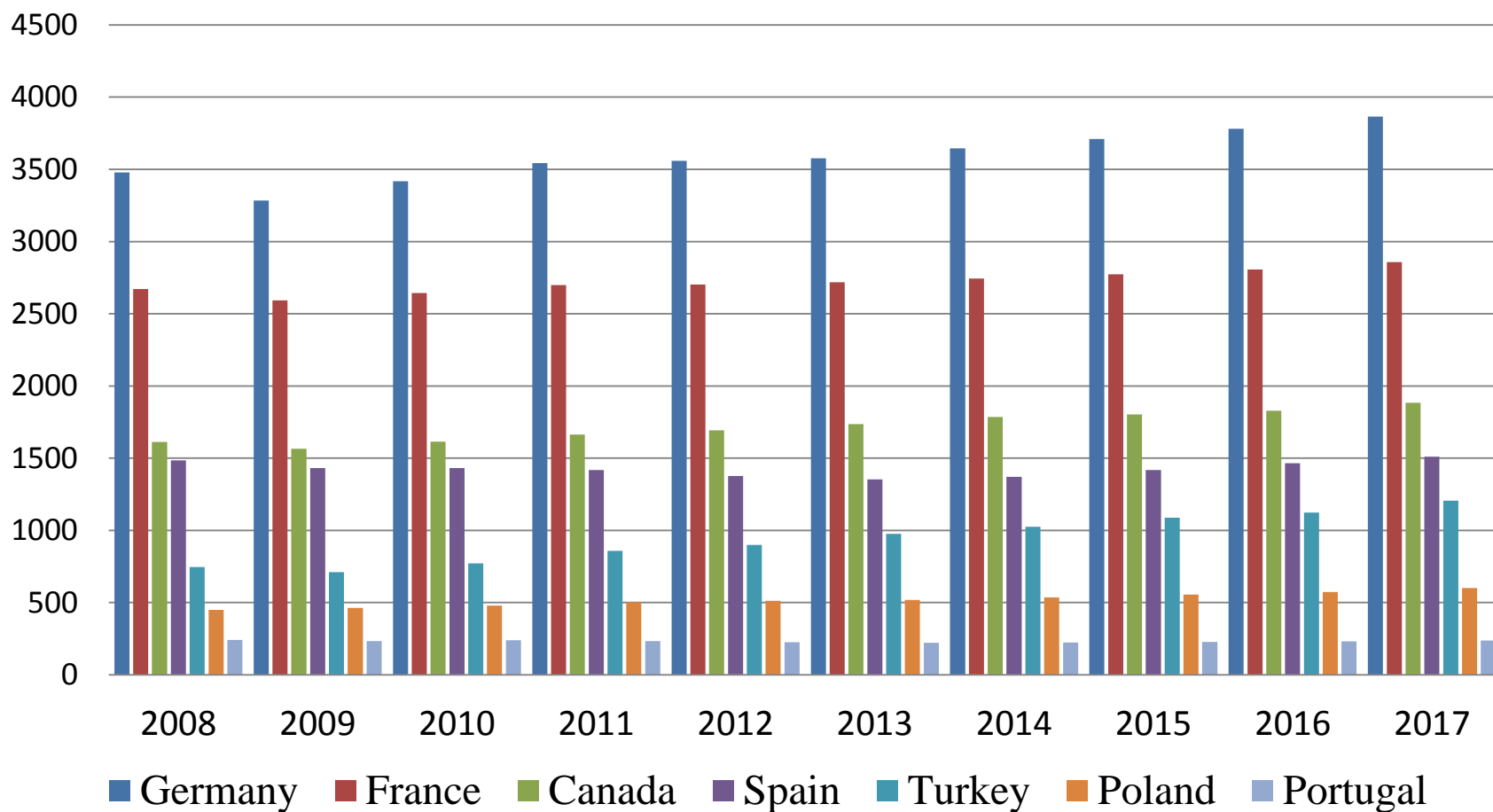
GDP (constant 2010 US\$), 2000-2017

Source: <https://data.worldbank.org>



GDP (constant 2010 US\$), 2008-2017

Source: <https://data.worldbank.org>



Economic Growth and Development

- **Economic growth** is the increase in the amount of the goods and services produced by an economy over time.
- It implies only an increase in quantitative output.
- **Economic development** is the increase in the standard of living in a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy.
- It refers to social and technological progress and involves improvements in a variety of indicators such as literacy rates, life expectancy, and poverty rates.

Economic Growth – Measures of Economic Growth

- *National Income and Its Composition, 1919–1938* – published in 1941
- **Gross National Product (GNP)** is the market value of all goods and services produced in one year by labour and property supplied by the residents of a country.
- **Gross Domestic Product (GDP)** is the amount of goods and services produced in a year, in a country. It is the market value of all final goods and services made within the borders of a country in a year.

Simon Kuznets (1901-1985)



1971- Nobel Memorial Prize in Economic Sciences

SNA vs MPS

- The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity.
- The Material Product System (MPS) was used in countries with centrally planned economies as a tool for analyzing economic processes at the macro level.
- MPS divides the economy into two parts: material production, where national income is created (industry, agriculture, construction, freight transportation, etc.), and the nonmaterial part of the economy.

- Economic growth is measured as the percent rate of increase in real gross domestic product GDP (or GDP per capita).

Rate of economic growth

$$\frac{GDP_1 - GDP_0}{GDP_0}$$

where GDP_1 is GDP in current period,
 GDP_0 is GDP in basic period.

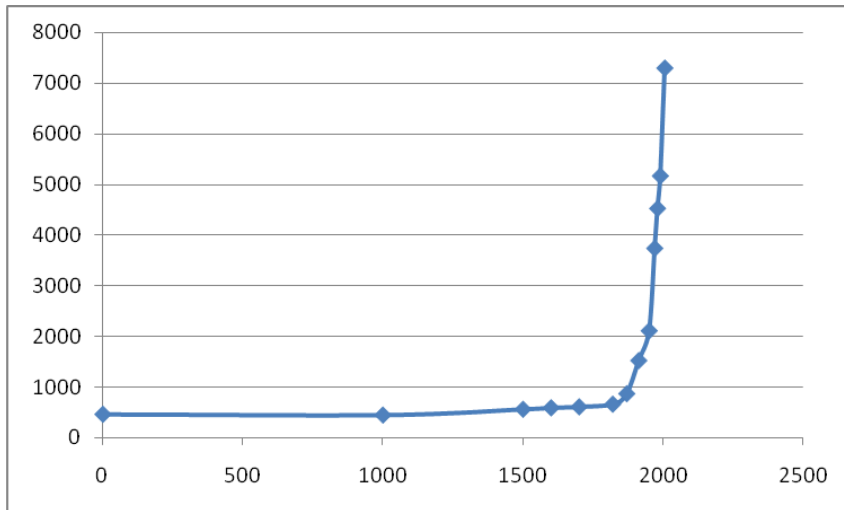
Growth Rate and Welfare

Years	Country A	Country B	Country C
	1%	5%	10%
0	100	100	100
10	110.46	162.89	259.37
30	134.78	432.19	1744.94
50	164.46	1146.74	11739.09

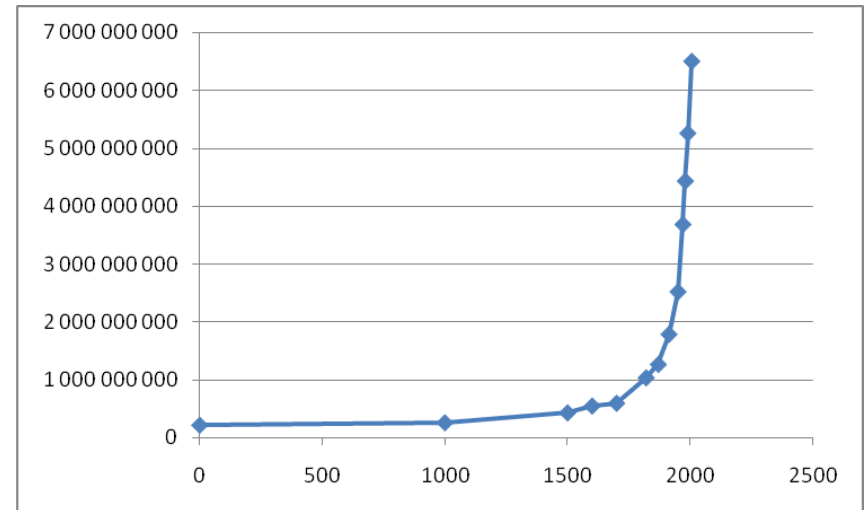
GDP per capita and Population (World Total)

Source: *Statistics on World Population, GDP and Per Capita GDP, 1-2006 AD*,
October 2008 (www.ggd.net/maddison)

GDP per capita (World Total)



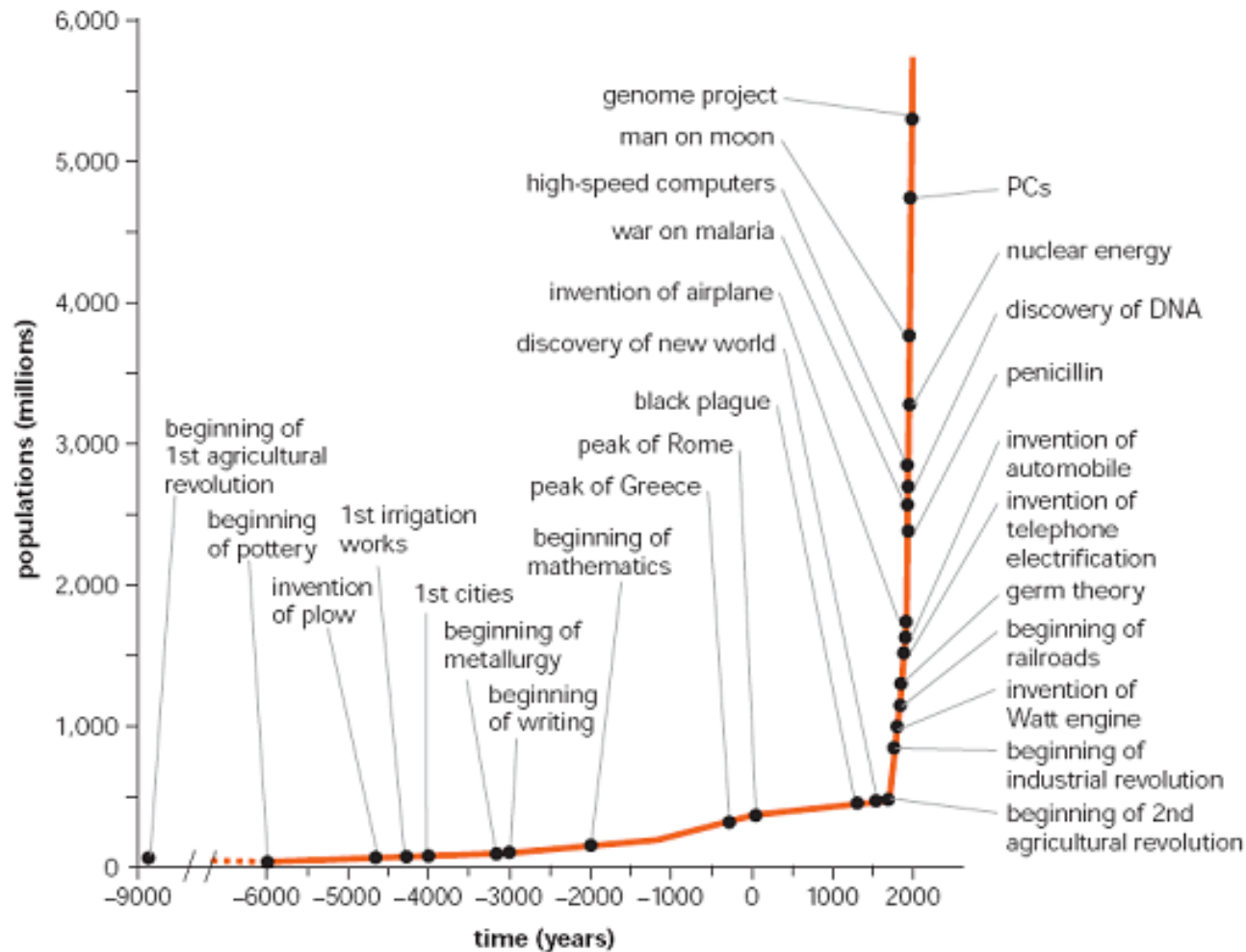
Population (World Total)



The Growth of the World Population and Some Major Events in the History of Technology

Source: *The Growth Report. Strategies for Sustained Growth and Inclusive Development*, 2008,

(www.worldbank.org)



The fastest growing countries		The slowest growing countries	
Country	GDP p.c. growth 2008-2017	Country	GDP p.c. growth 2008-2017
Nauru	12.5%	-7.4%	South Sudan
China	7.7%	-5.5%	Yemen, Rep.
Turkmenistan	7.7%	-4.6%	Equatorial Guinea
Ethiopia	7.3%	-4.6%	Libya
Myanmar	7.0%	-3.8%	Kuwait
Lao PDR	6.2%	-3.1%	Timor-Leste
Uzbekistan	5.9%	-2.6%	Greece
India	5.7%	-2.6%	Central African Republic
Mongolia	5.2%	-1.7%	Bermuda
Bangladesh	5.1%	-1.6%	Brunei Darussalam

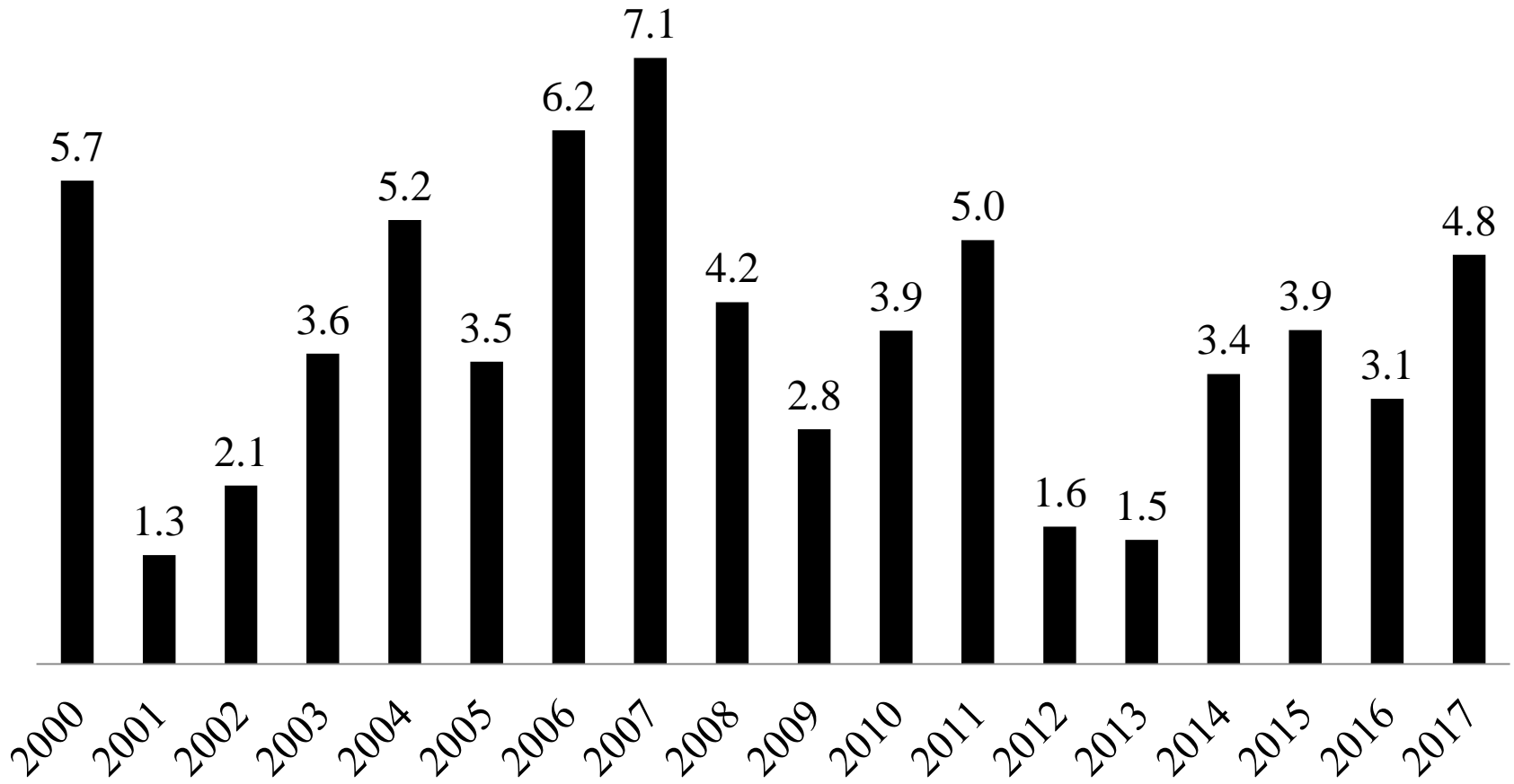
Source: <https://data.worldbank.org>

Country	GDP p.c. growth 2008-2017
Canada	0.6%
France	0.2%
Germany	1.1%
Poland	3.4%
Portugal	0.1%
Spain	-0.02%
Turkey	3.5%

Source: <https://data.worldbank.org>

GDP per capita growth, 2008-2017, Poland

Source: <https://data.worldbank.org>



The fastest growing countries		The slowest growing countries	
Country	GDP growth 2008-2017	Country	GDP growth 2008-2017
Nauru	16.0%	South Sudan	-5.9%
Ethiopia	10.1%	Libya	-4.0%
Turkmenistan	9.5%	Yemen, Rep.	-3.0%
China	8.3%	Greece	-2.9%
Qatar	8.1%	Central African Republic	-1.7%
Myanmar	7.9%	Bermuda	-1.7%
Uzbekistan	7.9%	Ukraine	-1.6%
Lao PDR	7.7%	Timor-Leste	-1.2%
Rwanda	7.4%	Puerto Rico	-1.1%
Mongolia	7.1%	Italy	-0.6%

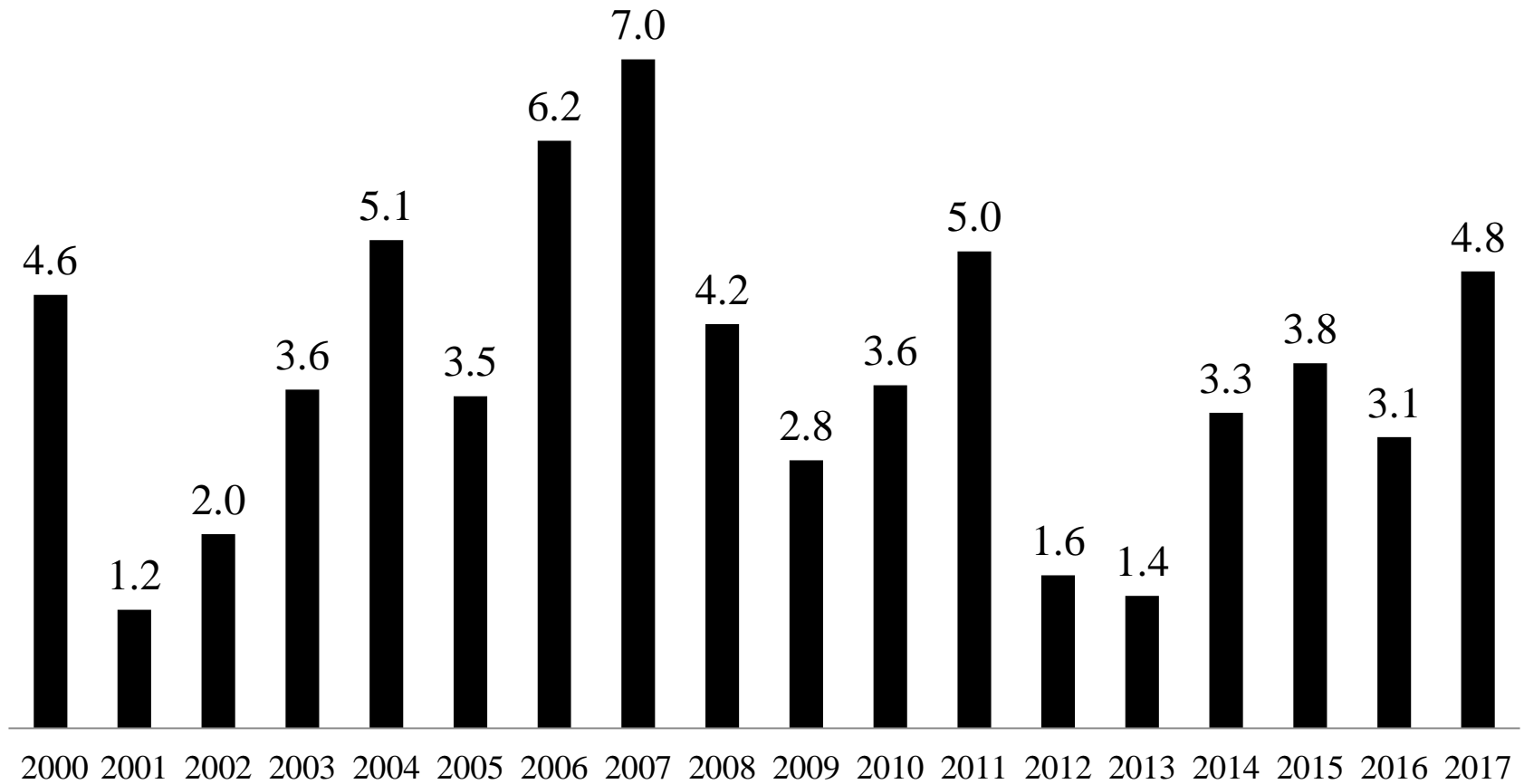
Source: <https://data.worldbank.org>

Country	GDP growth 2008-2017
Canada	1.7%
France	0.7%
Germany	1.2%
Poland	3.4%
Portugal	-0.1%
Spain	0.3%
Turkey	5.0%

Source: <https://data.worldbank.org>

GDP growth, 2008-2017, Poland

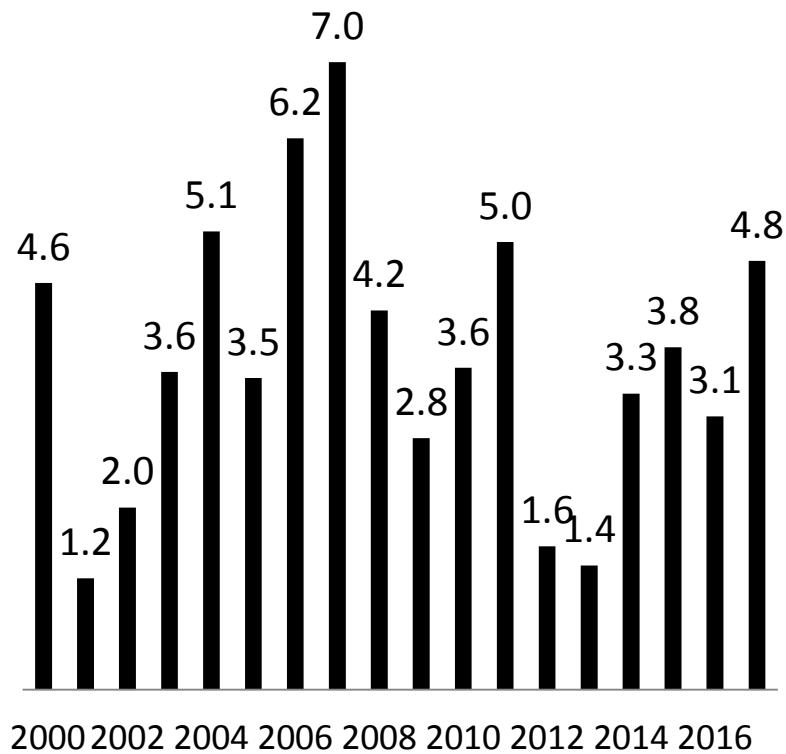
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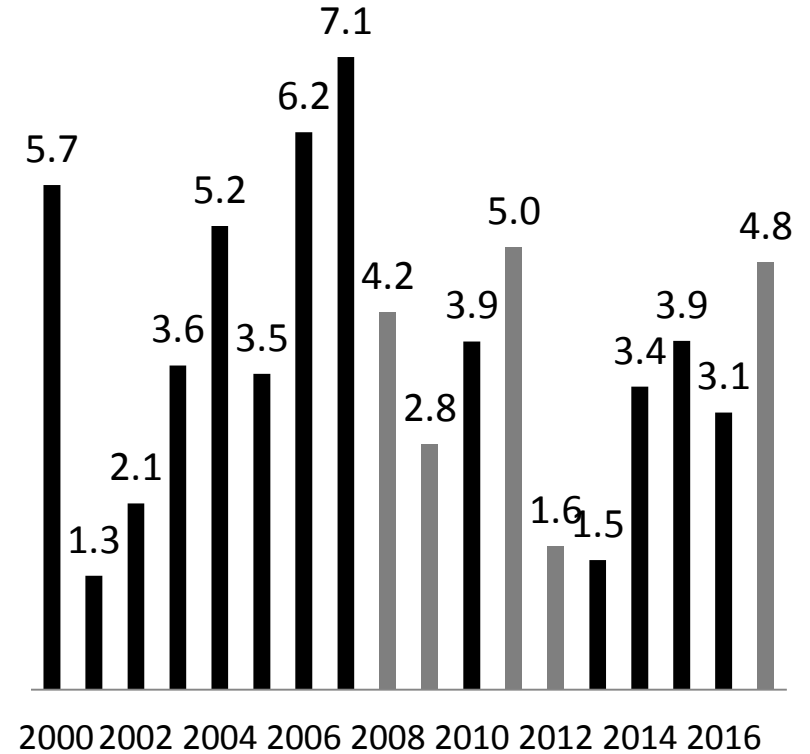
Poland, 2000-2017

Source: <https://data.worldbank.org>

GDP growth

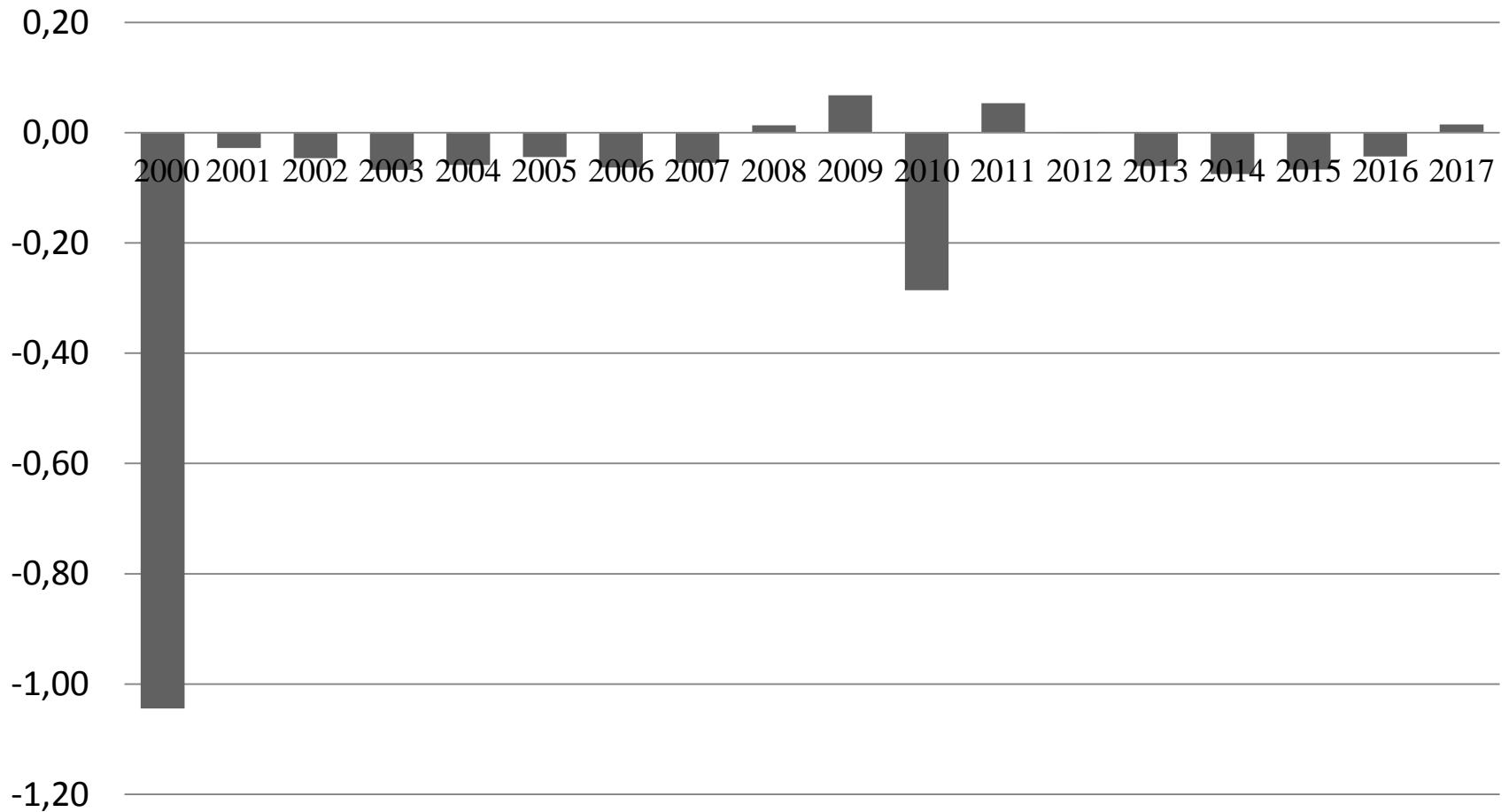


GDP p.c. growth



Population growth, Poland

Source: <https://data.worldbank.org>



GDP

- <https://data.worldbank.org/indicator>
- Exports of goods and services (constant 2010 US\$)
- Imports of goods and services (constant 2010 US\$)
- Gross capital formation (constant 2010 US\$)
- General government final consumption expenditure (constant 2010 US\$)
- Households and NPISHs Final consumption expenditure (constant 2010 US\$)
- **Households and NPISHs Final consumption expenditure (constant 2010 US\$) modified**
- GDP (constant 2010 US\$)
- GDP growth (annual %)

NPISHs - nonprofit institutions serving households

Argentina	2001	2002	2003	2004	2005
Exports of goods and services (constant 2010 US\$)	50640355142	5,2207E+10	5,5337E+10	5,9827E+10	6,7536E+10
Imports of goods and services (constant 2010 US\$)	36623502524	1,829E+10	2,5161E+10	3,5256E+10	4,0843E+10
Gross capital formation (constant 2010 US\$)	39572801787	2,5149E+10	3,4748E+10	4,671E+10	5,3622E+10
General government final consumption expenditure (constant 2010 US\$)	45178652388	4,2884E+10	4,3511E+10	4,4694E+10	4,9098E+10
Households and NPISHs Final consumption expenditure (constant 2010 US\$)	1,91092E+11	1,5633E+11	1,7267E+11	1,9051E+11	2,042E+11
Final consumption	2,36271E+11	1,9922E+11	2,1618E+11	2,3521E+11	2,533E+11
GDP calculated	2,89861E+11	2,5828E+11	2,8111E+11	3,0649E+11	3,3362E+11
			Share in GDP		
Exports of goods and services (constant 2010 US\$)	0,175	0,202	0,197	0,195	0,202
Imports of goods and services (constant 2010 US\$)	0,126	0,071	0,090	0,115	0,122
Gross capital formation (constant 2010 US\$)	0,137	0,097	0,124	0,152	0,161
General government final consumption expenditure (constant 2010 US\$)	0,156	0,166	0,155	0,146	0,147
Households and NPISHs Final consumption expenditure (constant 2010 US\$)	0,659	0,605	0,614	0,622	0,612
Final consumption	0,815	0,771	0,769	0,767	0,759
	1,000	1,000	1,000	1,000	1,000

			growth rate			
	2001	2002	2003	2004	2005	
Exports of goods and services (constant 2010 US\$)		3,1%	6,0%	8,1%	12,9%	
Imports of goods and services (constant 2010 US\$)		-50,1%	37,6%	40,1%	15,8%	
Gross capital formation (constant 2010 US\$)		-36,4%	38,2%	34,4%	14,8%	
General government final consumption expenditure (constant 2010 US\$)		-5,1%	1,5%	2,7%	9,9%	
Households and NPISHs Final consumption expenditure (constant 2010 US\$)		-18,2%	10,5%	10,3%	7,2%	
Final consumption		-15,7%	8,5%	8,8%	7,7%	
GDP calculated		-10,9%	8,8%	9,0%	8,9%	
GDP growth (annual %)		-4,4	-10,9	8,8	9,0	8,9

	decomposition of GDP				
Exports of goods and services (constant 2010 US\$)		0,5%	1,2%	1,6%	2,5%
Imports of goods and services (constant 2010 US\$)		-6,3%	2,7%	3,6%	1,8%
Gross capital formation (constant 2010 US\$)		-5,0%	3,7%	4,3%	2,3%
General government final consumption expenditure (constant 2010 US\$)		-0,8%	0,2%	0,4%	1,4%
Households and NPISHs Final consumption expenditure (constant 2010 US\$)		-12,0%	6,3%	6,3%	4,5%
Final consumption		-12,8%	6,6%	6,8%	5,9%
GDP		-10,9%	8,8%	9,0%	8,9%
		0,0%	0,0%	0,0%	0,0%
		2002	2003	2004	2005