

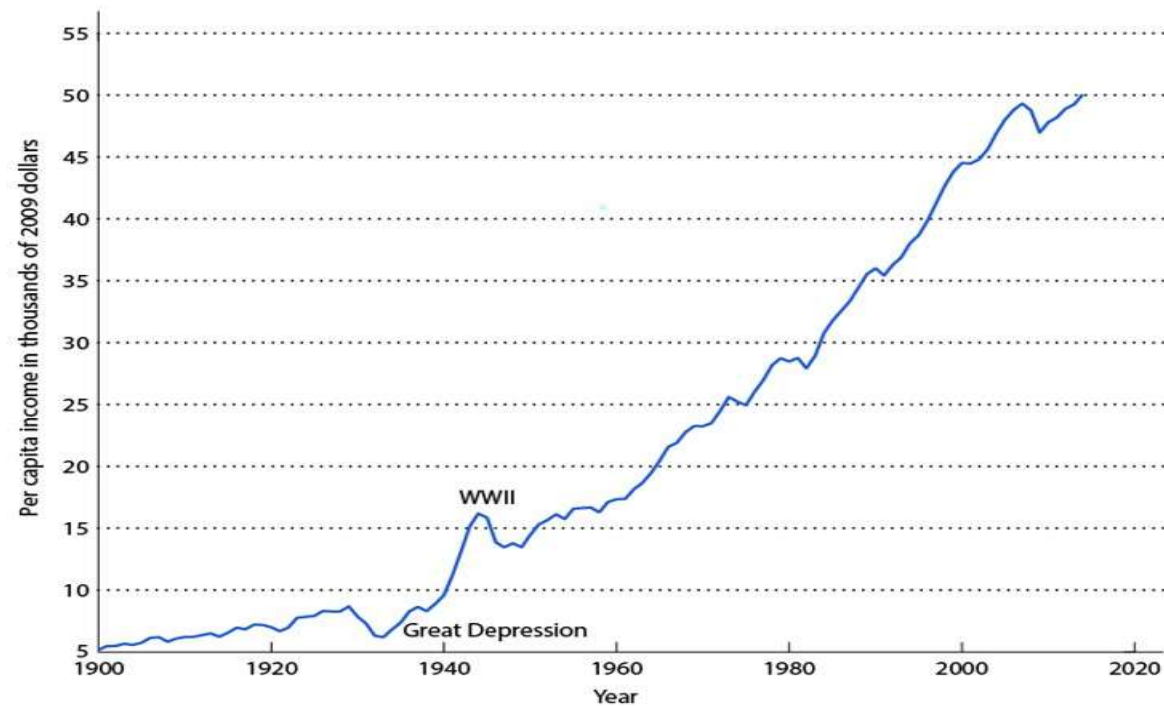
ECON 204 – Macroeconomic Theory II
Lecture 21st Feb. 2025

Chapters 1 & 2

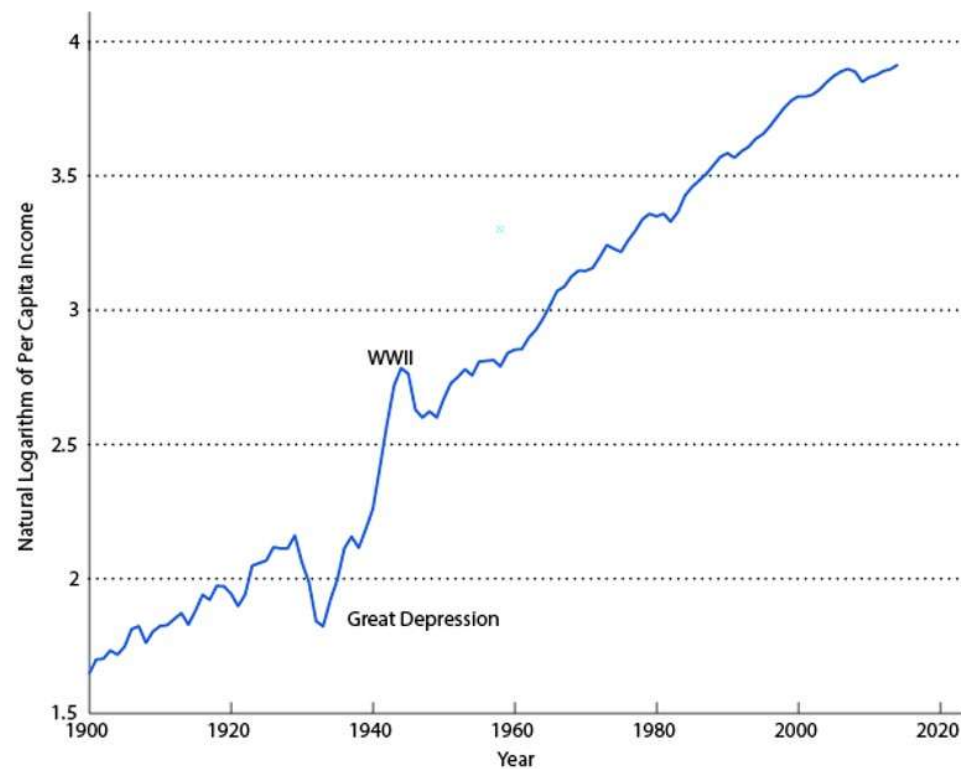
Introduction and
Measurement Issues

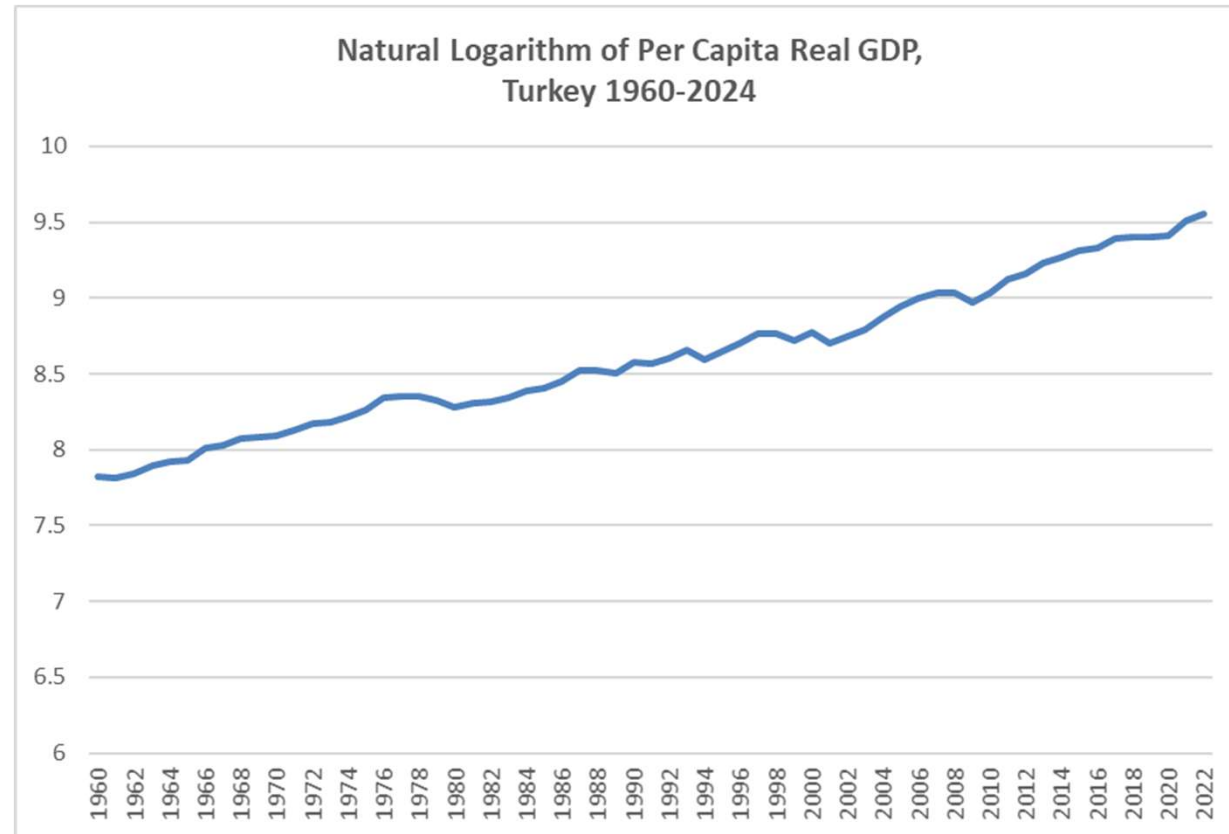
Ebru Voyvoda

Per Capita Real GDP (in 2009 dollars) for the United States, 1900–2014



Natural Logarithm of Per Capita Real GDP

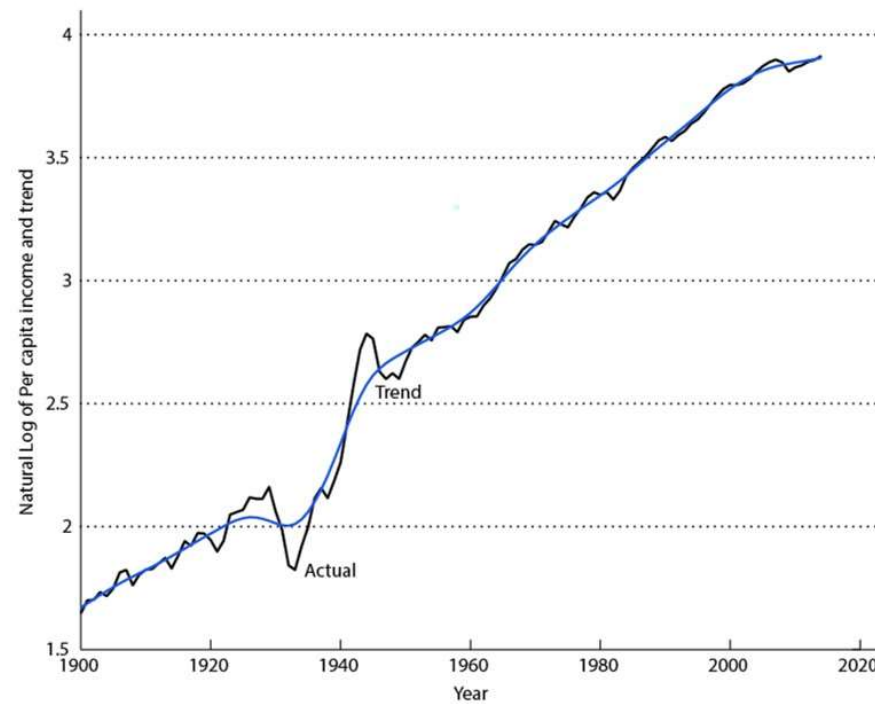




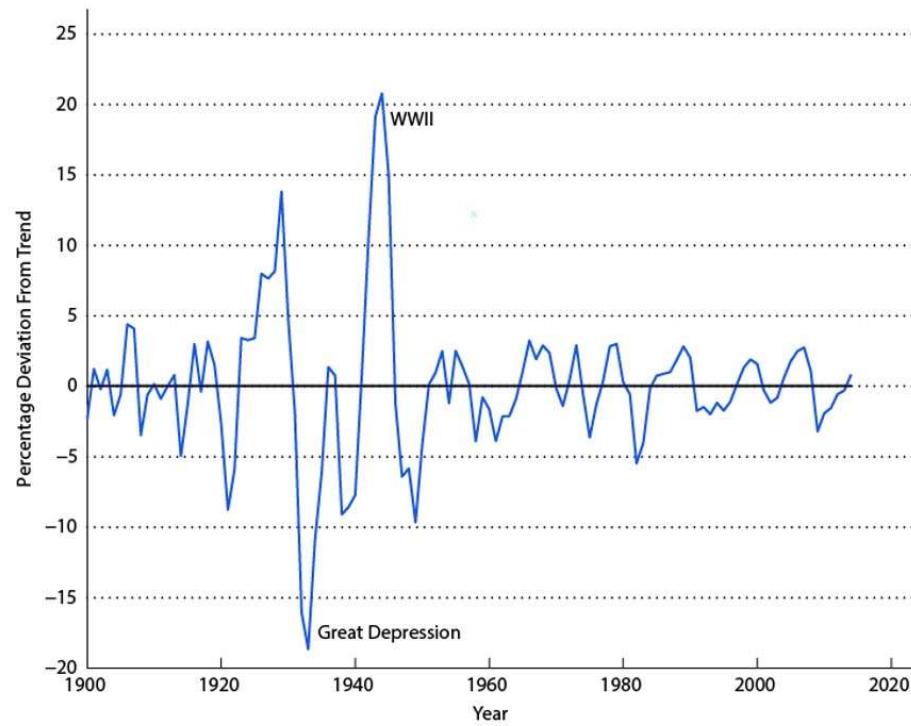
Gross Domestic Product, Economic Growth, and Business Cycles

- Gross Domestic Product (GDP): the market value of final goods and services produced within a country's borders over a particular period of time.
- The time series of GDP can be separated into *trend* and *business cycle* components.

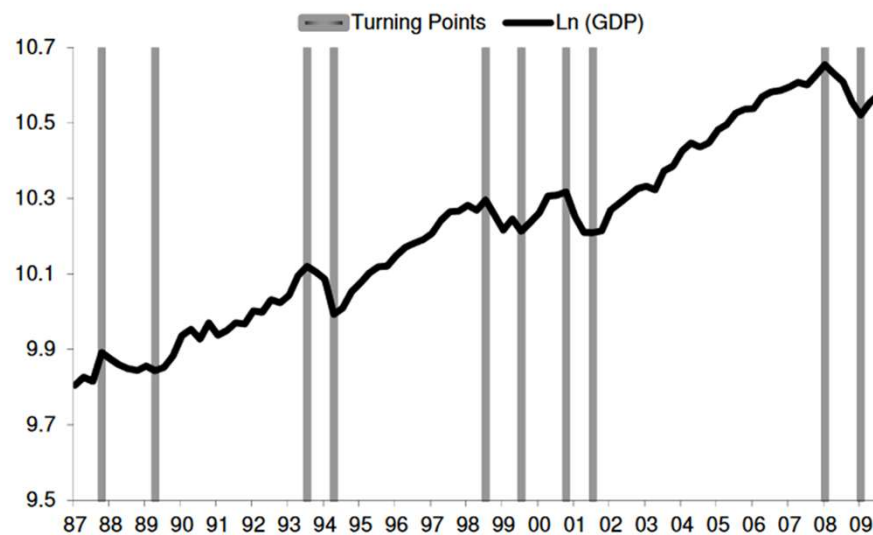
Natural Logarithm of Per Capita Real GDP and Trend (USA)



Percentage Deviations from Trend in Per Capita Real GDP (USA)



Natural Logarithm of Per Capita Real GDP (Turkey, 1987-2010)

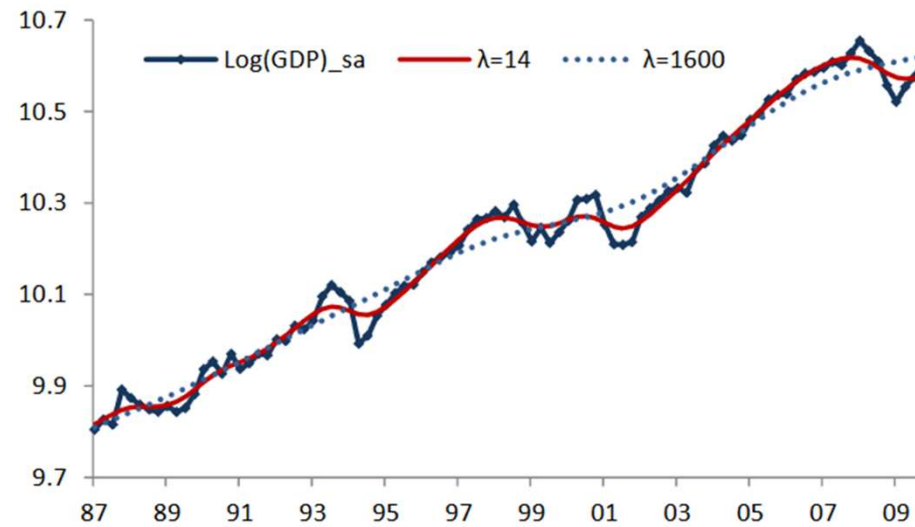


Source: CBRT

“Stylized Facts for Business Cycles in Turkey”, Alp et. al 2012
<https://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Publications/Research/Working+Papers/2012/12-02>

Natural Logarithm of Per Capita Real GDP and Trend (Turkey, 1987-2010)

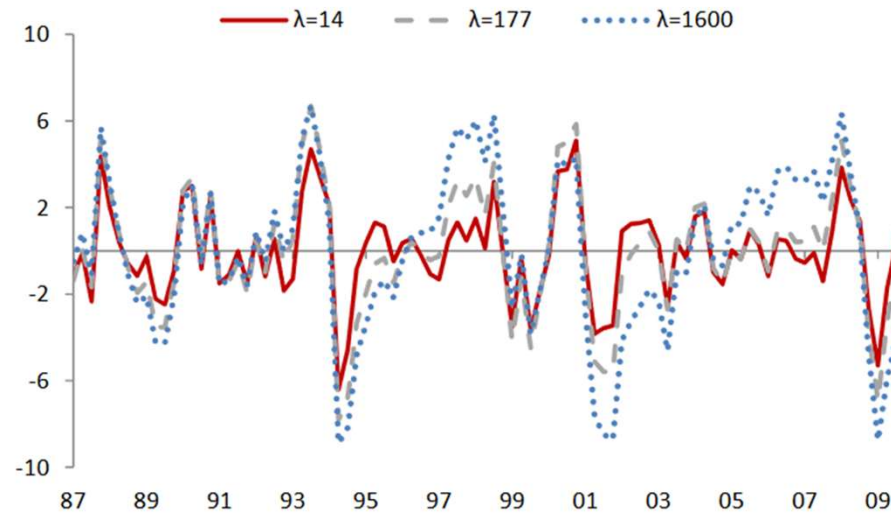
Figure 3: Trend Components of Real GDP with Different HP Smoothing Parameters



"Stylized Facts for Business Cycles in Turkey", Alp et. al 2012
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Percentage Deviations from Trend in Per Capita Real GDP (Turkey)

Figure 2: Cyclical Components of Real GDP with Different HP Smoothing Parameters



"Stylized Facts for Business Cycles in Turkey", Alp et. al 2012
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Basic Structure of a Macroeconomic Model

- Consumers and Firms
- The Set of Goods that Consumers Consume
- Consumers' Preferences
- The Production Technology
- Resources Available
- Policy makers?

What Do We Learn From Macroeconomic Analysis? Questions...

- What causes economic growth? Sustained economic growth?
- Could economic growth continue indefinitely? Or is there a limit to growth?
- Can government policy affect growth?
- What causes business cycles?
- Should governments act to smooth business cycles?

Understanding Macroeconomic Events

- Aggregate Productivity
- Unemployment and Vacancies
- Taxes, Government Spending, and the Government Deficit
- Inflation
- Interest Rates
- Business Cycles
- Credit Markets and the Financial Crisis
- The Current Account

Ch. 2 Measurement

- GDP as a measure of economic activity...
- So it is important to be able to calculate, understand and compare how (real) GDP behaves through time and across countries...
- What determines aggregate economic activity?
- Calculation of economic activity? How to measure GDP?

GDP: Total **market value** of **all final goods** and services produced **within a given period** by the **factors of production** located **within a country....**

- Example: Value added in bread production....

		RECEIPT		COST OF INPUTS	VA
(Farmer)	Wheat	80.0		~	80.0
(Miller)	Grain/Flour	180.0		80.0	100.0
(Baker)	Baked Dough	250.0		180.0	70.0
(Retailer/Supermarket)	Bread	300.0		250.0	50.0
		810.0		510.0	300.0
	Market Price				
		Total expenditures related to production of bread		Total Cost of Inputs	

Measuring GDP

Example: Value added in bread production....

- 1. Expenditure Approach – You pay 300.0 TL to buy 1 bread at the market
(C)
- 2. Product (Value-Added) Approach
 - Total expenditures (revenue) related to production of bread - Total Cost of Inputs = Total VA
 - $(810.0 - 510.0 = 300.0 \text{ TL})$
- 3. Incomes Approach
 - $P (\text{Baked Dough}) = P (\text{Grain/Flour}) + ???$

Measuring GDP

- **Example:** Value added in bread production....
- 3. Incomes Approach

$$P (\text{Baked Dough}) = P (\text{Grain/Flour}) + (\text{Wages, Profits, Rents...})$$

$$P (\text{Baked Dough}) = P (\text{Grain/Flour}) + \text{Incomes (of factors of production)}$$

$$P (\text{Baked Dough}) = P (\text{Grain/Flour}) + \text{Value Added}$$

GDP – Expenditures Approach (Turkiye, 2023, Current prices, million TL)

		2023	%
Final consumption expenditure of households	C	15,763,622.2	59.4
Government final consumption expenditure	G	3,476,920.2	13.1
Gross fixed capital formation	I	8,456,573.8	31.9
Change in stocks		-502,369.1	-1.9
Exports of goods and services	X	8,472,289.0	31.9
(Less/Minus) Imports of goods and services	M	9,121,314.2	34.4
Gross domestic product (GDP) - Nominal		26,545,721.8	100.0

GDP – Incomes Approach (Turkey, 2023, Current prices, million TL)

		2023	%
Total compensation of employees		7,661,316.8	28.9
Net taxes on production		-349,388.8	-1.3
Gross Operating surplus		16,225,311.4	
Consumption on fixed capital		5,170,478.3	19.5
Net operating surplus		11,054,833.0	41.6
Taxes less subsidies on products		3008482.46	11.3
GDP (nominal)		26,545,721.8	100

GDP – Expenditures Approach

- **GDP (Y)**

1. Consumption (C)
2. Investment (I)
3. Government Spending (G)
4. Exports – Imports (X – M)
5. Change in Inventories (Stocks)

$$Y = C + I + G + X - M + \text{Change in inv.}$$

- **Demand (Z)**

$$Z \equiv C + I + G + X - M$$