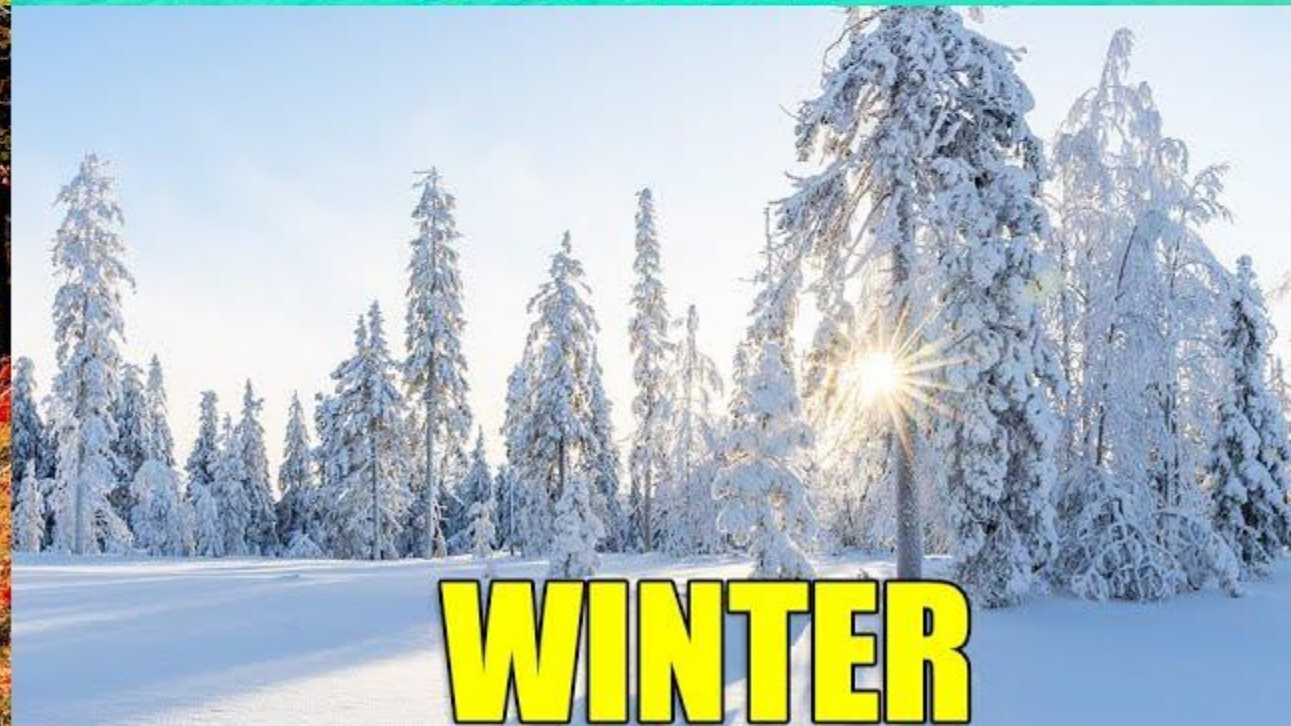
Economics is rewarding but not always easy!

It will take time to grasp concepts, but once you do, you will find that you keep using them.


SPRING


SUMMER


AUTUMN

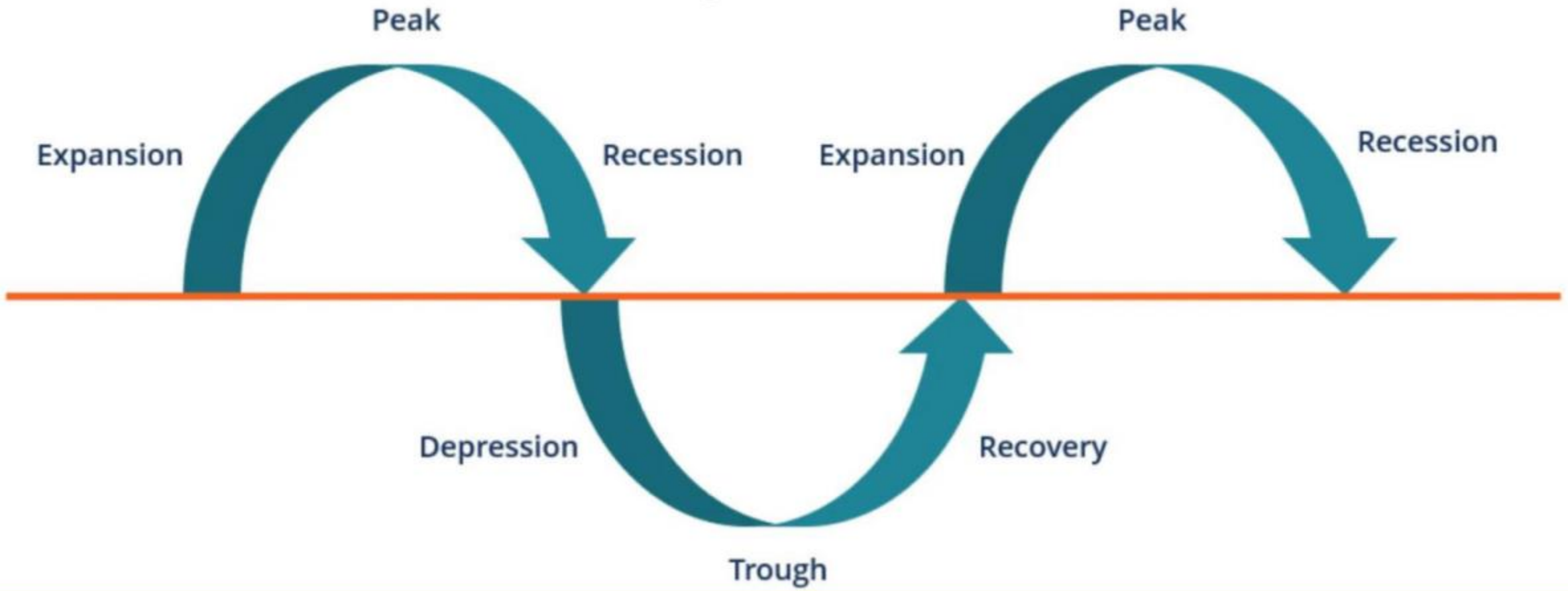

WINTER

- Businesses thrive
- employment rates are high
- overall economic output is strong.

- Businesses may struggle
- Unemployment rises
- Economic output declines.

This cyclical pattern is known as the business cycle.

The business cycle in economics



How do we know whether an economy is growing normally, or growing too fast?

Potential GDP and Output Gap in Developing Countries

What is GDP?

Gross Domestic Product is a measure of the value of all the **final goods and services** newly produced in a given period of time.

How do you add different goods together?

GDP is a single number, but it measures the production of many different things like cars, food, clothing.

What is Potential GDP?

Potential GDP/Output

The level of output an economy can achieve when labor and capital are employed at its natural level given existing technology

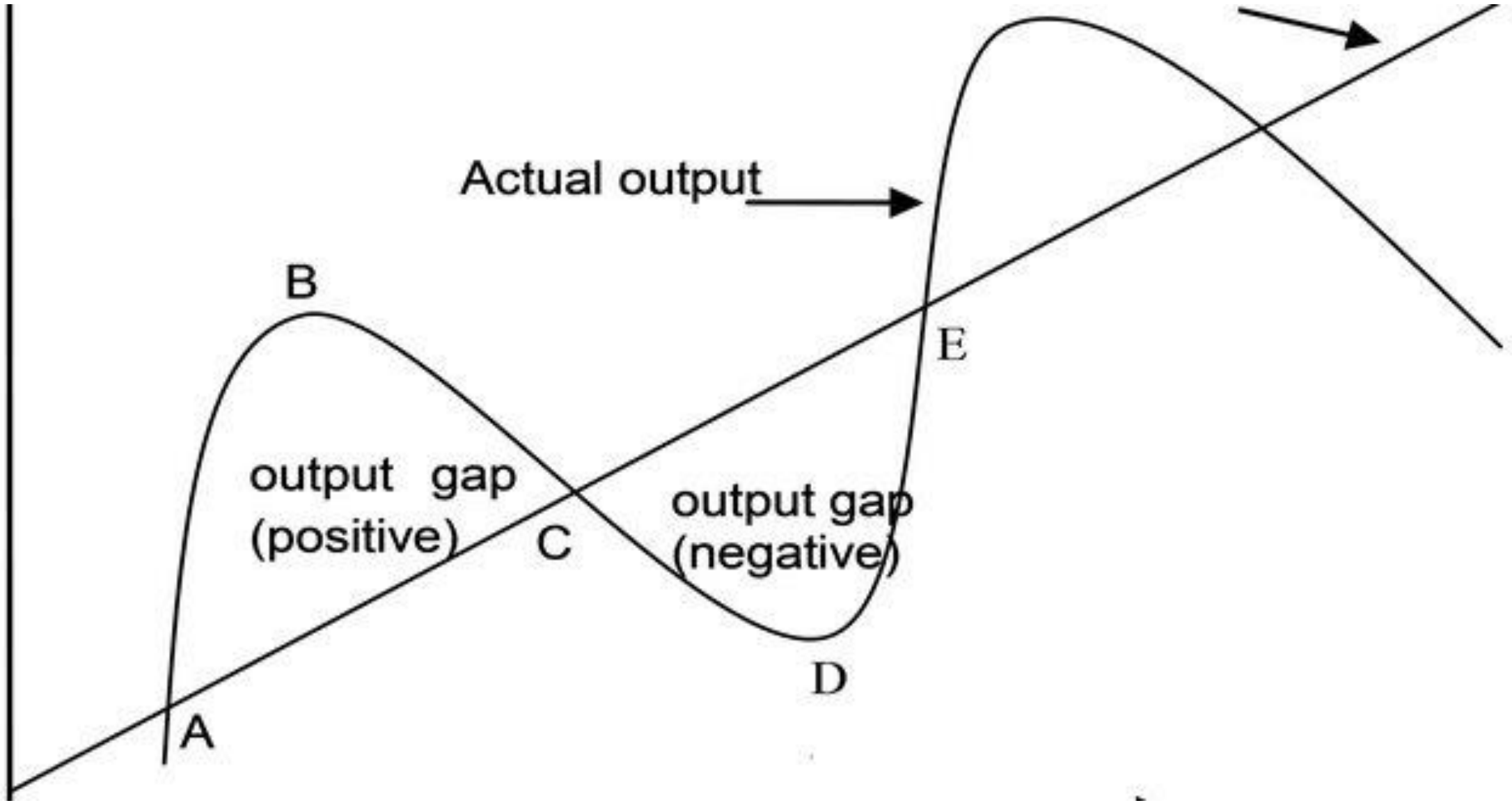
Natural level of GDP.

What is Output Gap?

The **output gap** is the **difference between what an economy is actually producing and what it could produce sustainably**.

Output Gap =

(Actual GDP – Potential GDP) / Potential GDP


Actual output
B
E
output gap
(positive)
C
output gap
(negative)
D
A

Research Problem and Gap

Lack of comparable potential GDP and output gap estimates for developing countries

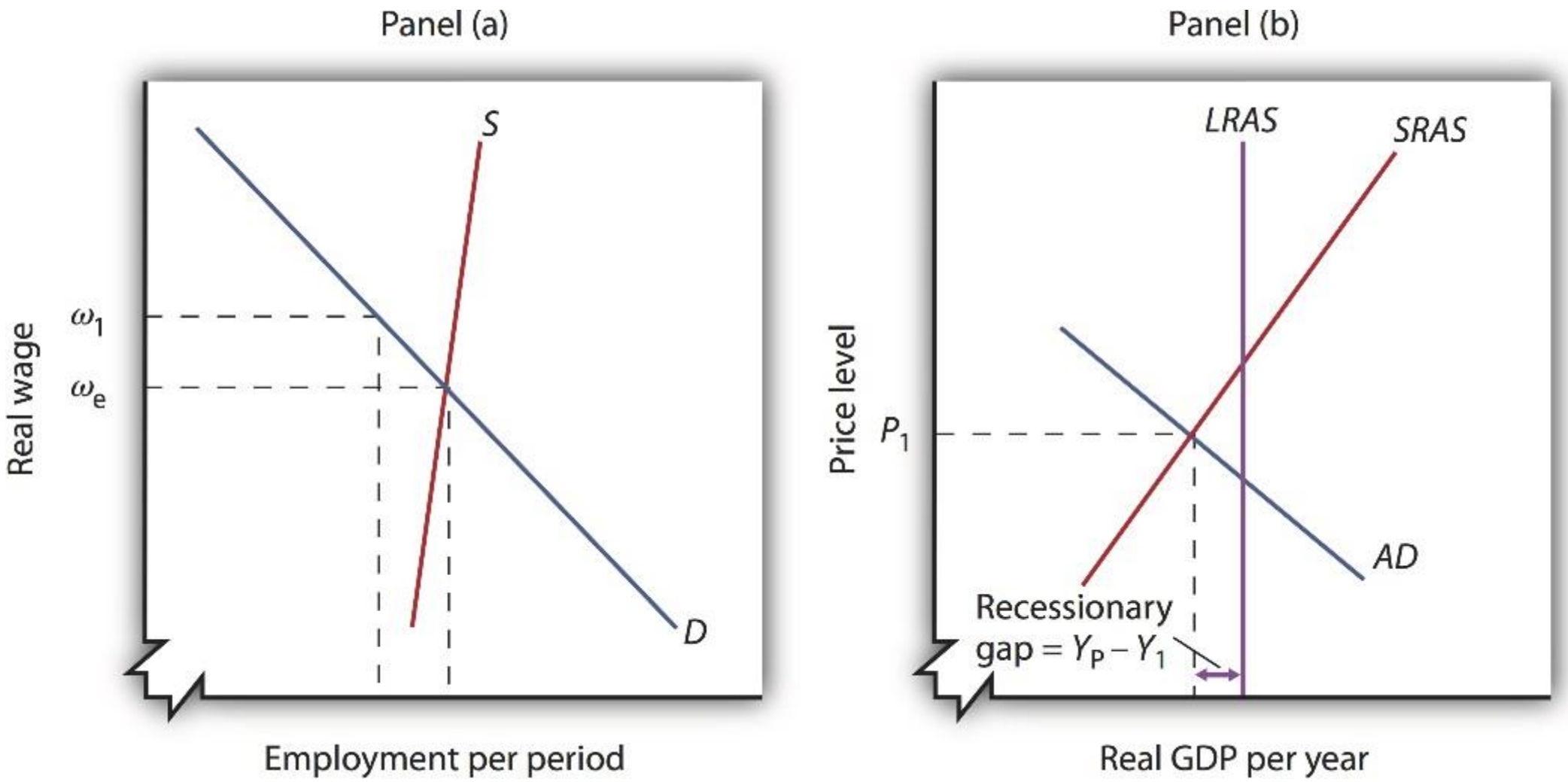
Why Should We Care about this research?

Inflationary and Recessioary Gaps

Recessionary Gap

The gap between the level of real GDP and potential output, when real GDP is less than potential.

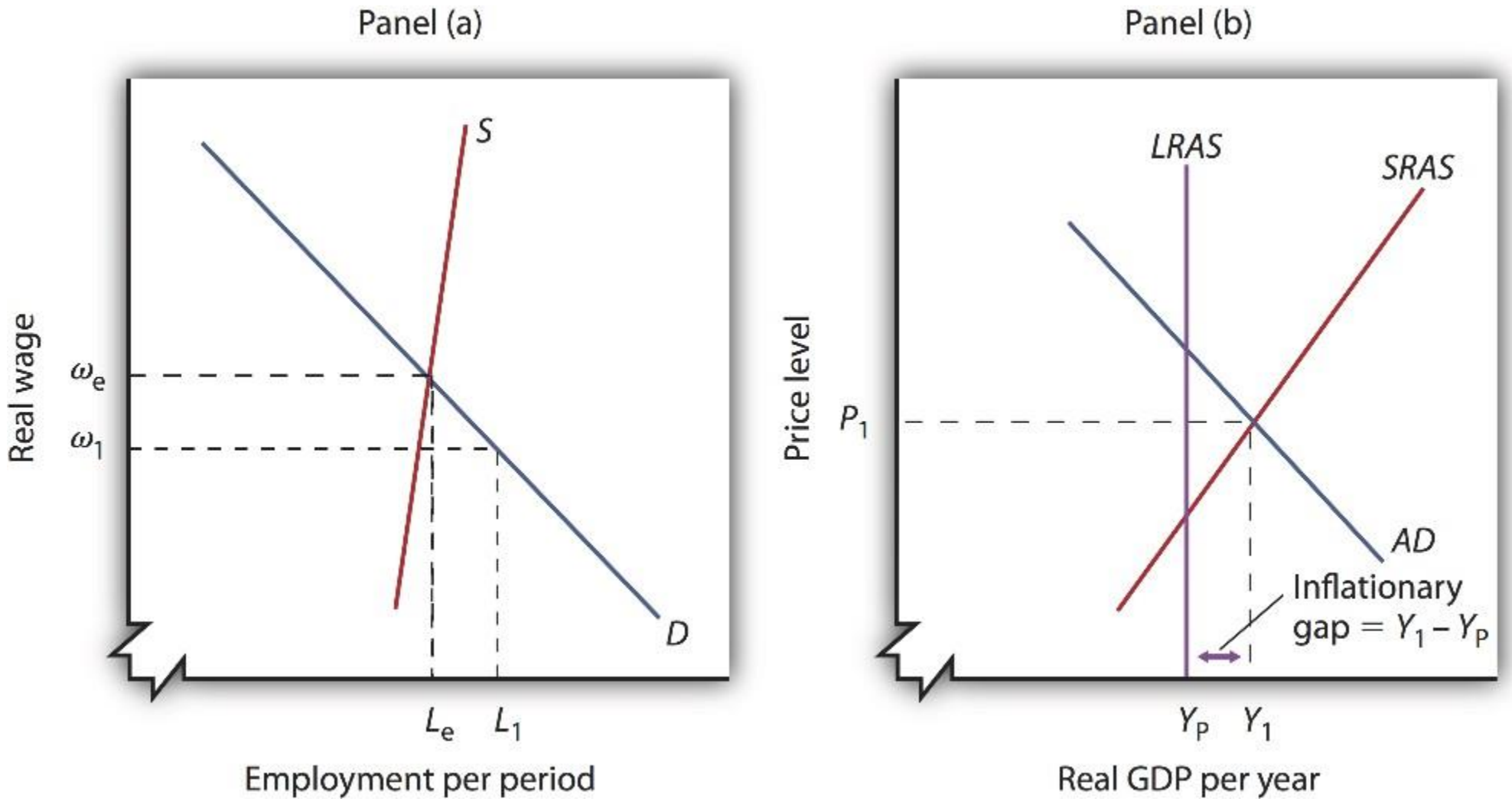
Recessionary Gap



Inflationary Gap

The gap between the level of real GDP and potential output, when real GDP is greater than potential.

An Inflationary Gap



Who Benefits from the research?

Our Country

Presidential Decree No. UP-158 (11 Sep 2023) — “Uzbekistan – 2030” Strategy, 5 priority areas and 100 goals toward sustainable development

Why it *implicitly* requires potential GDP:

Sustained economic growth goals require understanding **whether growth is sustainable or overheating**.

Policies based on these goals need **output gap measurement** to judge whether the economy is above or below potential.

Research Aim

The aim of this research is **to estimate potential GDP** for developing countries and to **measure output gaps over time** in order to assess periods of **economic overheating and underutilization.**

Research Questions

- How far does actual GDP deviate from potential GDP?
- Which countries experience overheating or underperformance?
- How are output gaps associated with inflation or recessionary gaps?

Methodology Used for Estimating Potential GDP

- Potential GDP is estimated using the **Cobb–Douglas production function**:

$$Y_t = A_t \, L_t^{\alpha} \, K_t^{(1-\alpha)}$$

Where:

- Y_t – Actual GDP
- A_t – Total Factor Productivity (TFP)
- L_t – Labor input
- K_t – Capital stock
- α – Labor share in output

Log-Linear Form

- Taking logarithms:

$$\ln Y_t = \ln A_t + \alpha \ln L_t + (1 - \alpha) \ln K_t$$

- This formulation allows estimation of **potential output** using **smoothed labor, capital, and TFP series.**

Data Source

Penn World Table and other national sources

Country name	Year	Potential GDP	output_gap_dev	economy_status
Uzbekistan	1990	115879	-3.4E-05	Underperforming
Uzbekistan	1991	115309	6.78E-06	Overheating
Uzbekistan	1992	102394	4.58E-05	Overheating
Uzbekistan	1993	100044	-3.9E-05	Underperforming
Uzbekistan	1994	94842.99	8.24E-06	Overheating
Uzbekistan	1995	93990.02	-2.5E-05	Underperforming
Uzbekistan	1996	95587.04	-4.1E-05	Underperforming
Uzbekistan	1997	100558	1.55E-05	Overheating
Uzbekistan	1998	104982	-2.2E-05	Underperforming
Uzbekistan	1999	109602	4.28E-05	Overheating
Uzbekistan	2000	113986	-3.4E-05	Underperforming
Uzbekistan	2001	119115	3.94E-05	Overheating
Uzbekistan	2002	124118	3.15E-05	Overheating
Uzbekistan	2003	129364	-3E-05	Underperforming
Uzbekistan	2004	139008	-3.4E-05	Underperforming
Uzbekistan	2005	148687.9	4.2E-05	Overheating
Uzbekistan	2006	159753	-9.8E-06	Underperforming
Uzbekistan	2007	174894	-2.7E-05	Underperforming
Uzbekistan	2009	206076	2.27E-05	Overheating
Uzbekistan	2010	223592	-7E-06	Underperforming
Uzbekistan	2011	240998.9	4.54E-05	Overheating
Uzbekistan	2012	258774.1	-4.2E-05	Underperforming
Uzbekistan	2013	278400.9	2.24E-05	Overheating
Uzbekistan	2014	298387.9	2.09E-05	Overheating
Uzbekistan	2015	320611.1	-3.9E-05	Underperforming
Uzbekistan	2016	340149.9	3.67E-05	Overheating
Uzbekistan	2017	355326.1	-3.5E-05	Underperforming
Uzbekistan	2018	374678	-3.5E-05	Underperforming
Uzbekistan	2019	395524.2	-4E-05	Underperforming

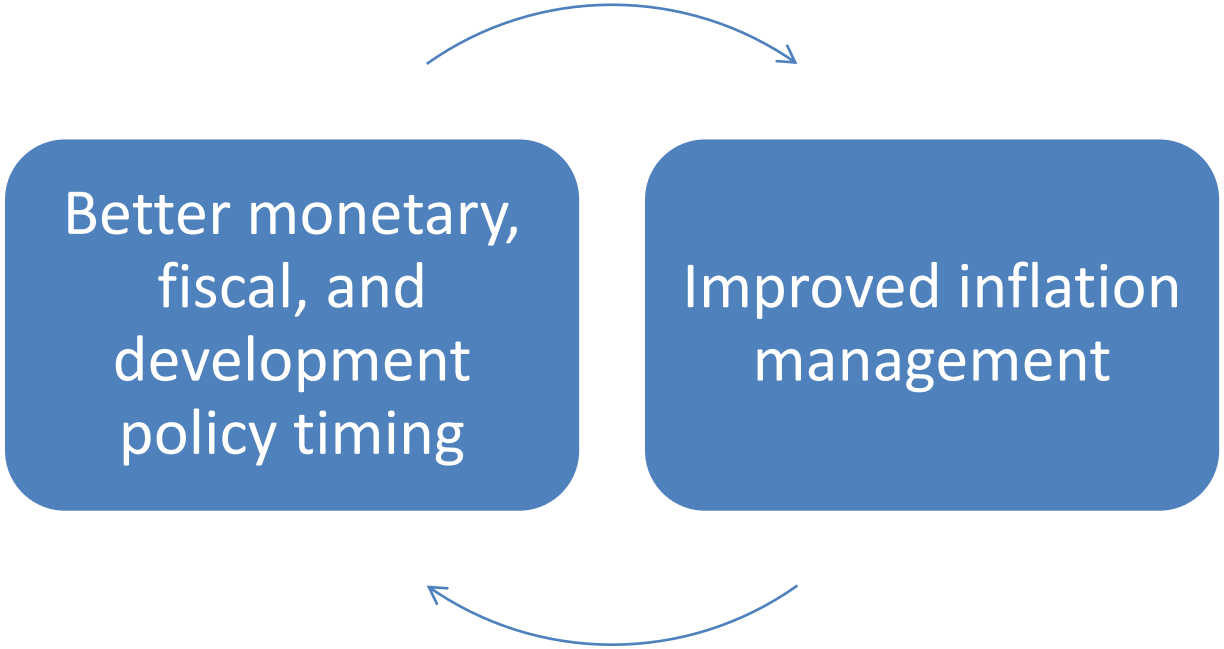
Preliminary / Expected Findings

Estimates sustainable output capacity

Separates trend growth from business cycles

Identifies overheating and underutilization

Policy Contribution



Conclusion

This study estimates **potential GDP** for developing countries using a production-function approach

Output gaps are identified to assess **economic overheating and underutilization**

Results show significant **cross-country and time variation** in output gaps

Positive output gaps are associated with **inflationary pressures**, while negative gaps indicate **unused capacity**

The framework provides a useful tool for **macroeconomic analysis and policy design**, including for **Uzbekistan**

Questions?
Suggestions?
Comments?

THANK YOU