



# Traditional Keynesian Theory of Fluctuations

oleh

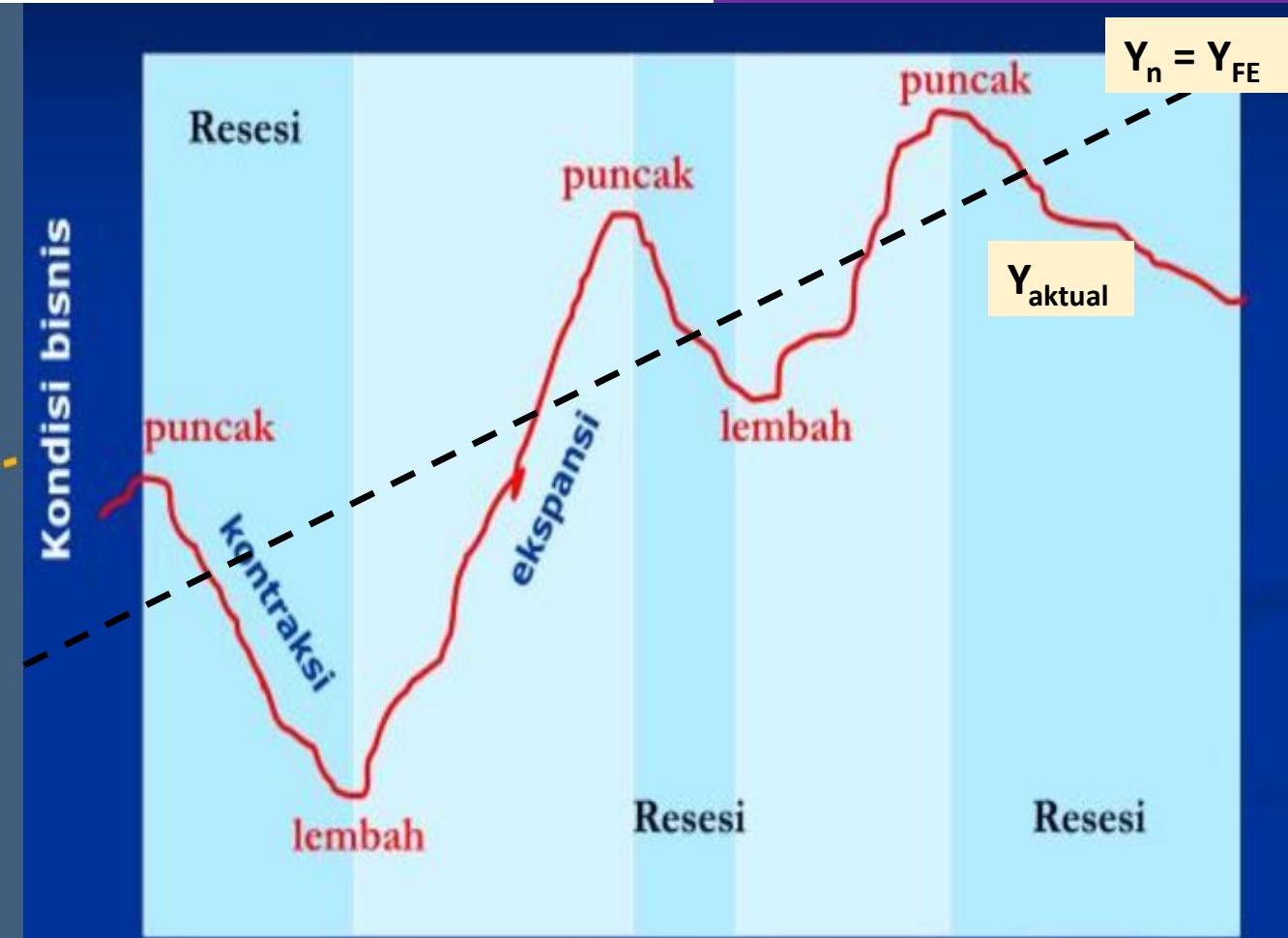
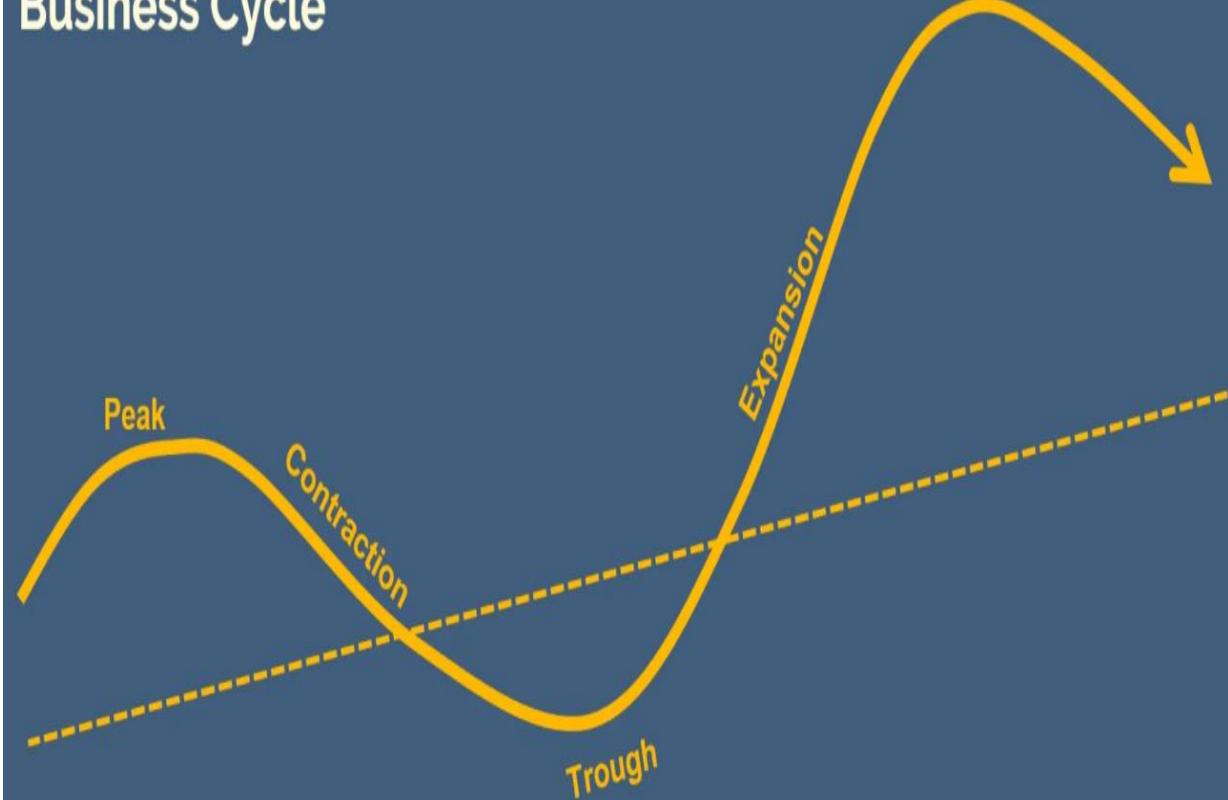
Bambang Juanda

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# Business Cycle



- Pergerakan Naik atau Turun Berulang
- Periodisitas dapat Bervariasi
- Umumnya Berakhir 2 - 10 Tahun

## Pendekatan (Analisis) Model:

1. **Short-run;** (asumsi P & W tetap)
2. **Long-run (Medium-run);** (asumsi P & W berubah)
3. **Very Long-run (Long-run) → Growth Theory**

Model Fluktuasi dgn asumsi ada hambatan dlm penyesuaian P dan W nominal secara cepat.

## Aggregate Demand

### IS Curve (Pasar Barang)

Pengeluaran yg direncanakan:

$E_Y$  turunan parsial  $E(\cdot)$  thd  $Y = \frac{dE}{dY}$

$$E = E(Y, r, G, T), \quad 0 < E_Y < 1, \quad E_r < 0, \quad E_G > 0, \quad E_T < 0 \quad (5.1)$$

$$E = C(Y-T) + I(r) + G \quad \text{standard but unrealistic} \quad (5.2)$$

r memengaruhi C dan Y memengaruhi I

AS: Output  $Y \rightarrow$  Keseimbangan:  $E=Y \rightarrow Y=E(Y, r, G, T) \quad (5.4)$

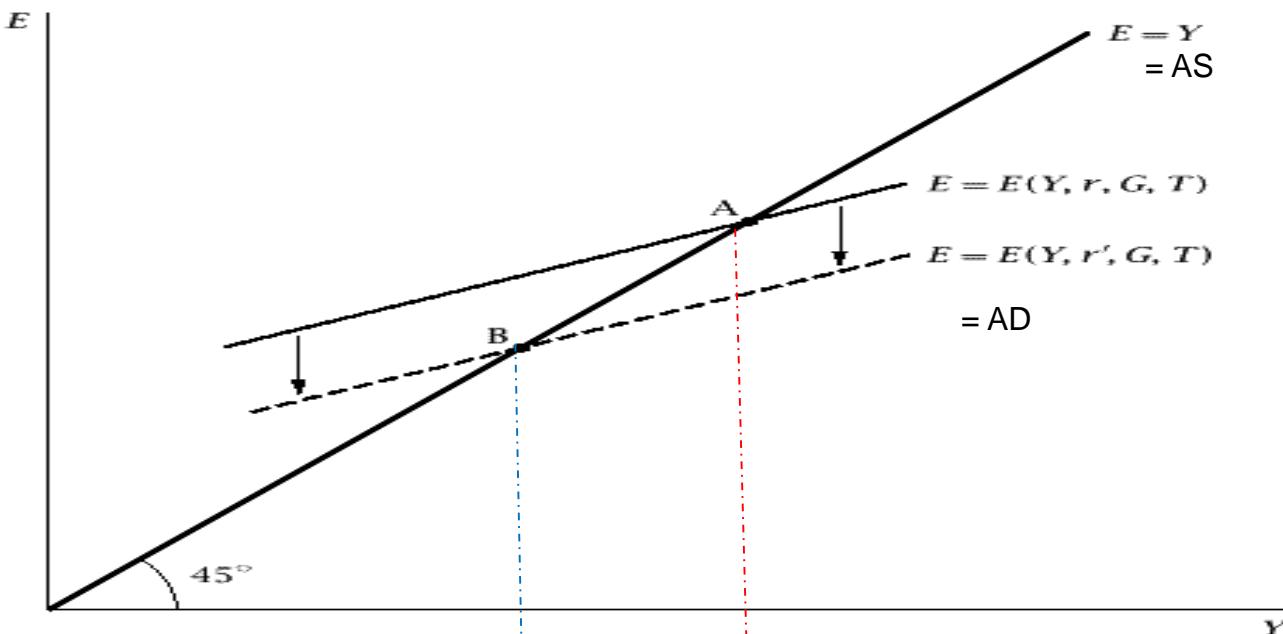
$$\frac{dY}{dr} = \frac{dE}{dY} \cdot \frac{dY}{dr} + \frac{dE}{dr}$$

Kurva IS punya slope negatif (Gambar)

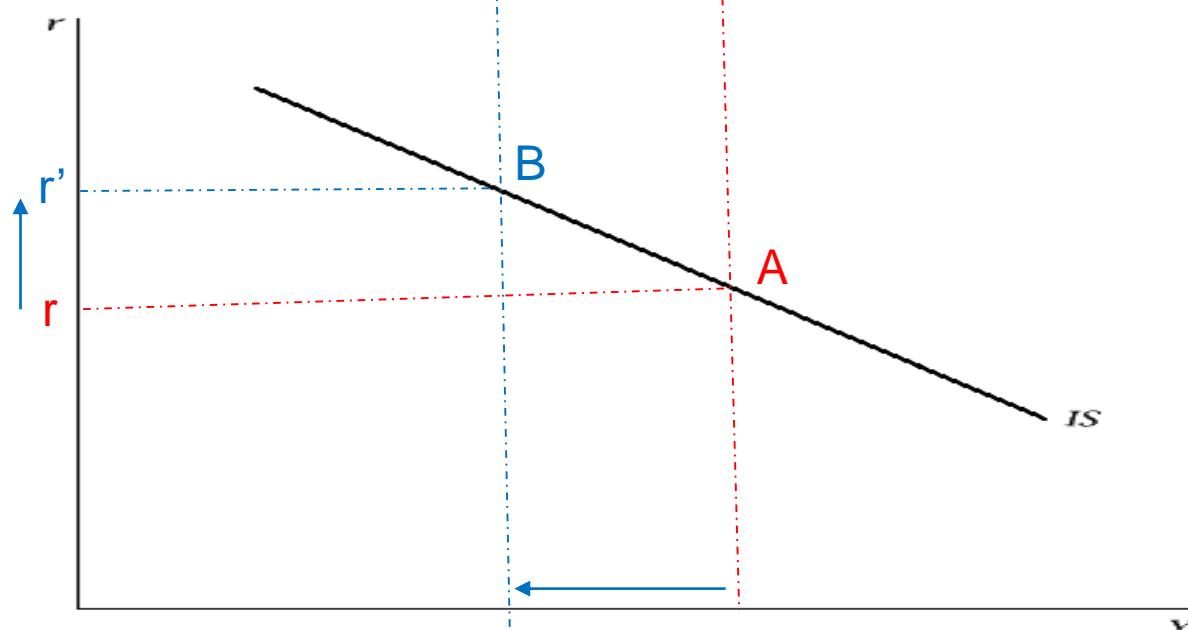
$E_r$  dan  $E_Y$  makin besar maka  
slope IS makin landai.

$$\left. \frac{dY}{dr} \right|_{IS} = E_Y \left( \left. \frac{dY}{dr} \right|_{IS} \right) + E_r, \quad (5.5)$$

$$\left. \frac{dY}{dr} \right|_{IS} = \frac{E_r}{1 - E_Y}, \quad (5.6)$$



**FIGURE 5.1** The Keynesian cross



**FIGURE 5.2** The IS curve

**E<sub>r</sub> < 0:** r naik  $\rightarrow$  I & C turun  $\rightarrow$  Y turun  
 A & B titik keseimbangan:  
 $AS = AD$   
 $Y = E = E(Y, r, G, T)$   
 $dY/dr = dE/dY \cdot dY/dr + dE/dr$

$$\left. \frac{dY}{dr} \right|_{IS} = E_Y \left( \left. \frac{dY}{dr} \right|_{IS} \right) + E_r,$$

$$\left. \frac{dY}{dr} \right|_{IS} = \frac{E_r}{1 - E_Y},$$

$$0 < E_Y < 1, \quad E_r < 0, \quad E_G > 0, \quad E_T < 0$$

Kurva IS punya slope negatif

(hubunga Y & r dlm kondisi keseimbangan pasar barang)

E<sub>r</sub> dan E<sub>Y</sub> makin besar maka slope IS makin landai.

# Pasar Uang (MP or LM curve)

$$\frac{M^+}{P} = L(r + \pi^e, Y), \quad L_{r+\pi^e} < 0, \quad L_Y > 0, \quad (5.7)$$

bunga nominal ( $i$ ) = bunga riil( $r$ ) + ekspektasi inflasi ( $\pi^e$ )

Asumsi: M eksogen, P tetap, dan  $\pi^e=0$

Taylor (1995): Bank Sentral tidak menargetkan M, tapi menyesuaikannya utk mencapai target r. Target r disesuaikan utk merespons perubahan output dan inflasi:

$$r = r(Y, \pi), \quad r_Y > 0, \quad r_\pi > 0. \quad (5.8)$$

Slope Kurva MP atau LM positif (Gambar). M endogen, maka:

$$M = PL(r(Y, \pi) + \pi^e, Y). \quad (5.9)$$

For most purposes, however, we can simply ignore the money supply and focus on the *IS* equation and the interest-rate rule.

Because it is both simpler and more realistic, we will employ the *MP* approach in what follows. For most purposes, however, the *LM* approach has similar implications.

The main debate during the 1960s was between Keynesians (**Government**) and monetarists (**Central Bank**)

**Kurva IS:**  
AS = AD  
 $Y = E = E(Y, r, G, T)$

+ -

$$\text{LM: } \frac{M}{P} = L(r + \pi^e, Y), \quad L_{r+\pi^e} < 0, \quad L_Y > 0, \quad (5.7)$$

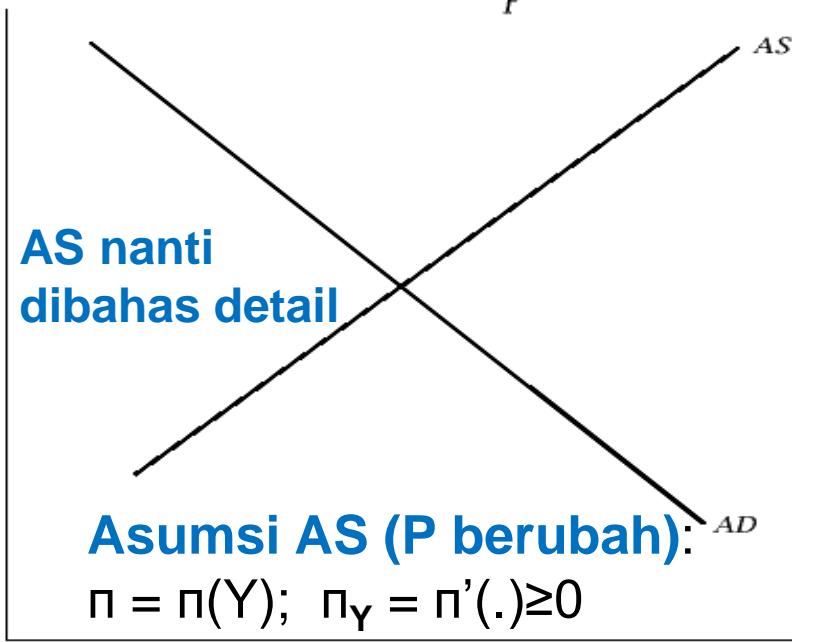


FIGURE 5.4 The AS-AD diagram

To find how much  $Y$  changes in response to a change in  $\pi$ , differentiate (5.4) and (5.8) with respect to  $\pi$ . This yields two equations in two unknowns:

$$\left. \frac{dY}{d\pi} \right|_{AD} = E_Y \left. \frac{dY}{d\pi} \right|_{AD} + E_r \left. \frac{dr}{d\pi} \right|_{AD}, \quad (5.11)$$

$$\left. \frac{dr}{d\pi} \right|_{AD} = r_\pi + r_Y \left. \frac{dY}{d\pi} \right|_{AD}. \quad (5.12)$$

These can be solved to obtain

$$\left. \frac{dY}{d\pi} \right|_{AD} = \frac{r_\pi}{[(1 - E_Y)/E_r] - r_Y}. \quad (5.13)$$

This expression is unambiguously negative, and it shows the determinants of the slope of the aggregate demand curve.

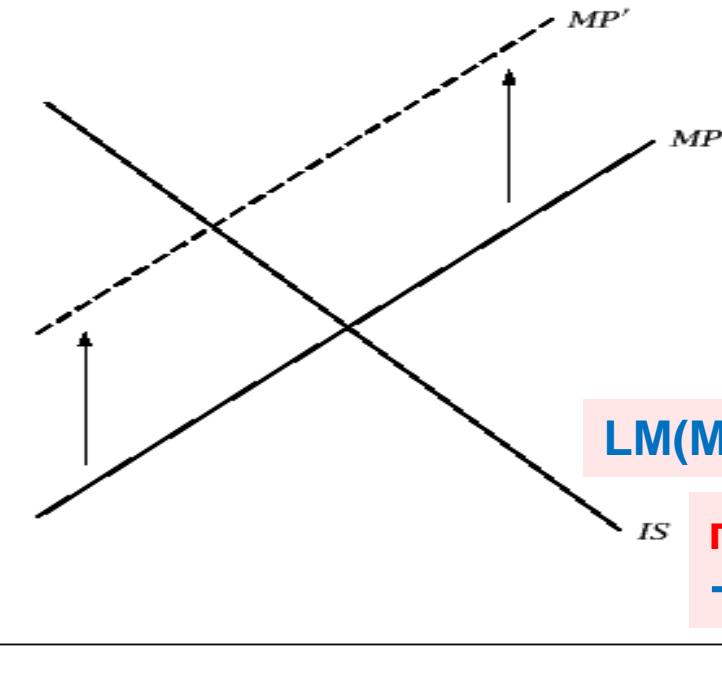


FIGURE 5.5 The effects of an increase in inflation

$$\text{IS: } Y = E(Y, r, G, T) \quad (5.4)$$

$$0 < E_Y < 1, \quad E_r < 0$$

**AD dari kurva IS dan LM (MP)**

**Target r:**

$$r = r(Y, \Pi), \quad r_Y > 0, \quad r_\Pi > 0 \quad (5.8)$$

**LM(MP):  $Y$  naik  $\rightarrow M_D$  naik  $> M_S \rightarrow r$  naik**

**$\Pi$  naik  $\rightarrow$  target  $r$  naik  $\rightarrow$  LM ke atas  
 $\rightarrow Y$  turun (pers 5.7. Gb 5.5)  $\rightarrow$  AD**

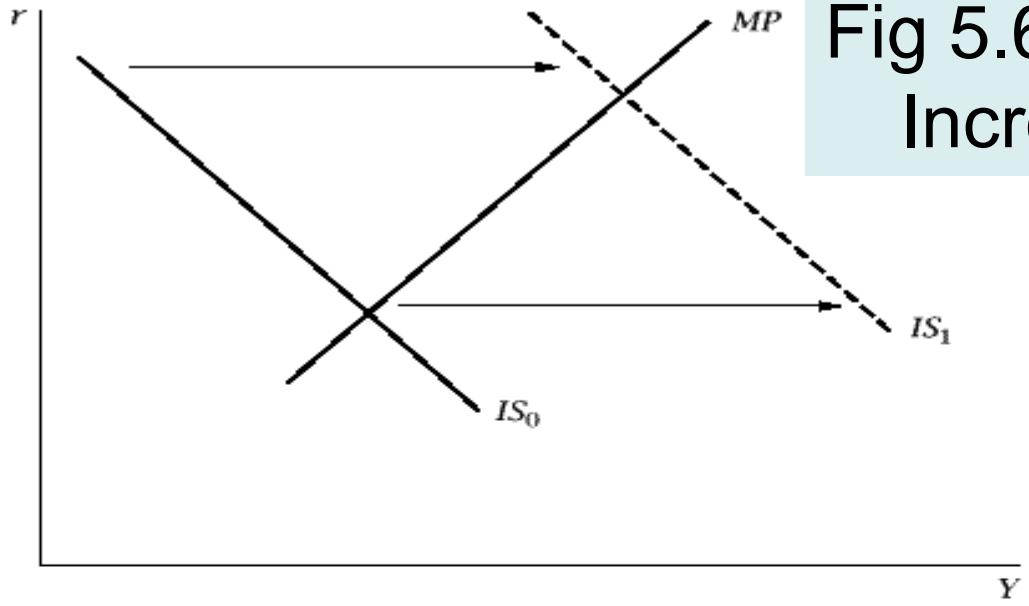
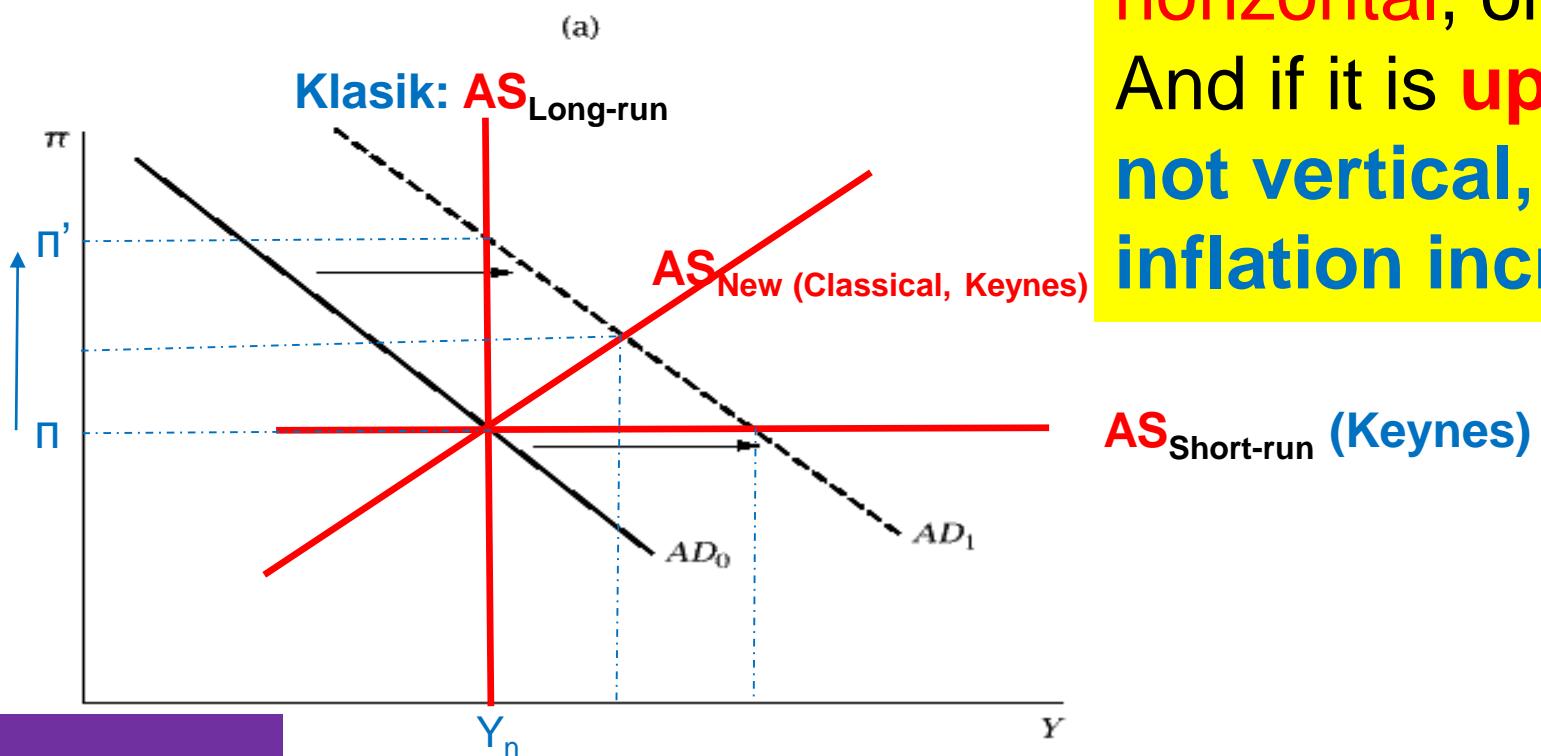


Fig 5.6 The Effects of an Increase in Gov't Purchases



The Impact of this change in AD on output and inflation depends on the AS curve. If it is **vertical**, only inflation increase. If it is **horizontal**, only output increase. And if it is **upward-sloping but not vertical**, both **output and inflation increase**

$AS_{Short-run}$  (Keynes)

# The Determination of Equilibrium Output

$$Y = c_0 + c_1(Y - T) + I + G$$

$$Y = \frac{1}{1 - c_1} [c_0 + I + G - c_1 T]$$

Pdptn  
APBN

Multiplier  
Effect

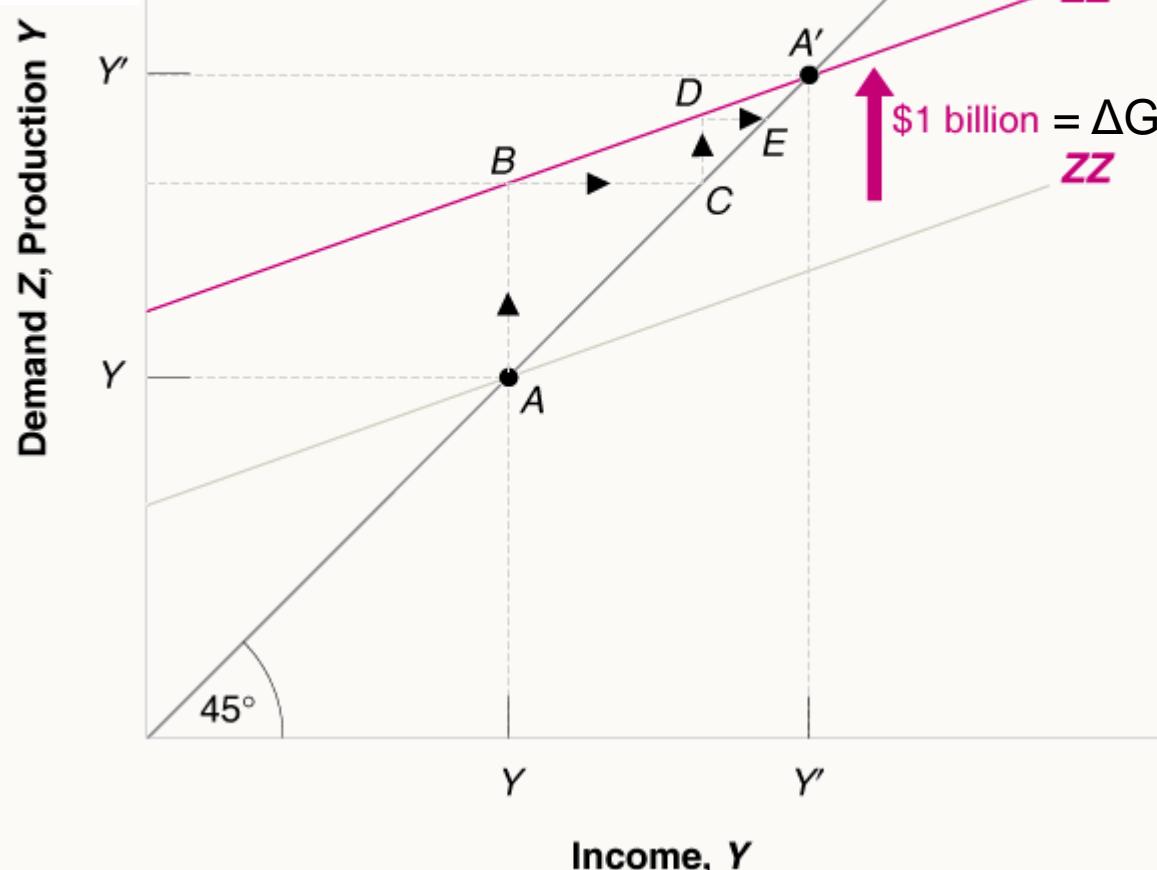
## The Effects of an Increase in Autonomous Spending on Output.

An increase in autonomous spending has a more than one-for-one effect on equilibrium output.

Following this logic, the total increase in production after, say,  $n + 1$  rounds, equals \$1 billion multiplied by the sum:

$$1 + c_1 + c_1^2 + \dots + c_1^n$$

Such a sum is called a **geometric series**.



# Dinamika Model Makro (Keyness) Sederhana

- AS (*Aggregate Supply*) = AD (*Aggregate Demand*)
- $Y = C + I + G + (EX - IM)$   $= E(Y, r, G, T)$  (5.4)
- Misal:  $C = c_0 + c_1 (Y - T)$  dan  $EX - IM = 0$

The diagram illustrates the multiplier effect in the Keynesian model. A red curved arrow starts from the term  $c_1 (Y - T)$  in the equation  $Y = c_0 + c_1 (Y - T) + I + G$  and points to a blue bracket underneath the equation, which groups the terms  $c_0 + I + G - c_1 T$ . This bracket leads to a yellow box labeled "Pdptn APBN". Below the equation, the term  $\frac{1}{1 - c_1}$  is highlighted with a red oval and labeled "Multiplier Effect".

$$Y = c_0 + c_1 (Y - T) + I + G$$
$$Y = \frac{1}{1 - c_1} [c_0 + I + G - c_1 T]$$

# Model Makro (Keyness) Sederhana

- AS (*Aggregate Supply*) = AD (*Aggregate Demand*)
- $Y = C + I + G + (EX - IM)$   $= E(Y, r, G, T)$  (5.4)
- Misal:  $C = c_0 + c_1(Y - T)$  dan  $EX - IM = 0$

The diagram illustrates the components of aggregate demand (AD) in the Keynesian model. It shows a red oval enclosing the components  $c_0$ ,  $c_1(Y - T)$ , and  $G$ . A blue arrow points from this oval to a yellow box labeled "Pdptn APBN". A red arrow points from the term  $c_1(Y - T)$  back to the term  $(Y - T)$  in the original equation below.

$$Y = c_0 + c_1(Y - T) + I(Y, i) + G$$

$$Y = \frac{1}{1 - c_1} [c_0 + \bar{I} + \bar{G} - c_1 T]$$

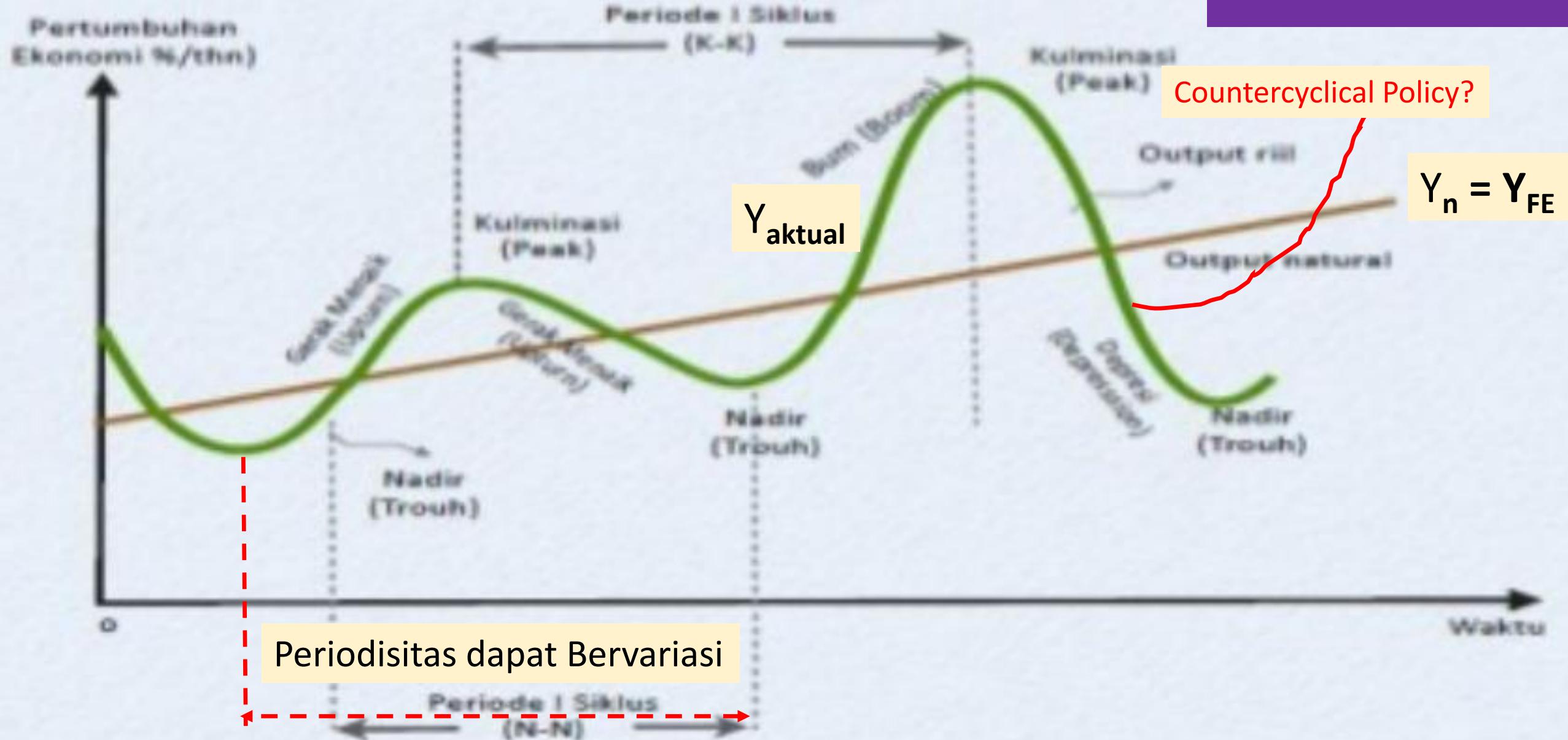


## PERTUMBUHAN PDB Q2 2020 MENURUT SISI PRODUKSI

Pandemi Covid-19 memberi dampak nyata terhadap kinerja produksi sektor-sektor utama seiring berbagai langkah pembatasan aktivitas

Pertumbuhan PDB Sektoral (%, YoY)	Share PDB 2019	2019					2020	
		Q1	Q2	Q3	Q4	Y	Q1	Q2
<b>Sektor Primer</b>	<b>19,98</b>	<b>2,01</b>	<b>3,13</b>	<b>2,84</b>	<b>2,88</b>	<b>2,72</b>	<b>0,18</b>	<b>0,47</b>
Pertanian	12,72	1,82	5,33	3,12	4,26	3,64	0,02	2,19
Pertambangan	7,26	2,32	-0,71	2,34	0,94	1,22	0,45	-2,72
<b>Sektor Sekunder</b>	<b>31,69</b>	<b>4,51</b>	<b>4,17</b>	<b>4,60</b>	<b>4,42</b>	<b>4,43</b>	<b>2,39</b>	<b>-5,89</b>
Industri Pengolahan	19,70	3,85	3,54	4,14	3,66	3,80	2,06	-6,19
Pengadaan Listrik, Gas, Air	1,17	4,48	2,65	3,83	5,96	4,24	3,91	-4,70
Konstruksi	10,75	5,91	5,69	5,65	5,79	5,76	2,90	-5,39
<b>Sektor Tersier</b>	<b>44,23</b>	<b>6,55</b>	<b>6,47</b>	<b>6,20</b>	<b>6,37</b>	<b>6,40</b>	<b>4,61</b>	<b>-6,31</b>
Perdagangan	13,01	5,21	4,63	4,43	4,24	4,62	1,60	-7,57
Transportasi & Pergudangan	5,57	5,45	5,88	6,66	7,55	6,40	1,29	-30,84
Informasi dan Komunikasi	3,96	9,06	9,60	9,24	9,71	9,41	9,80	10,88
Jasa Keuangan dan Asuransi	4,24	7,23	4,49	6,15	8,49	6,60	10,62	1,03
Sektor Jasa-Jasa Lainnya	17,45	6,94	7,60	6,57	6,20	6,81	4,68	-6,35
<b>PDB</b>		<b>5,07</b>	<b>5,05</b>	<b>5,02</b>	<b>4,97</b>	<b>5,02</b>	<b>2,97</b>	<b>-5,32</b>

- Sektor-sektor yang tumbuh positif yaitu sektor informasi dan komunikasi (10,88%) dan jasa keuangan (1,03%), jasa kesehatan (3,71%) dan pertanian (2,19%).
- Sektor industri pengolahan terkontraksi -6,19%. Indeks PMI manufaktur menurun rata-rata sebesar 31,7 di kuartal II.
- Penutupan berbagai gerai akibat pemberlakukan PSBB membuat omzet perdagangan ritel menurun sehingga sektor perdangan terkontraksi sebesar 7,57%.
- Sektor transportasi mencatat kontraksi paling dalam, seiring pembatasan perjalanan transportasi publik baik penerbangan, maupun transportasi darat. Di kuartal ini hanya ada aktivitas pergudangan dan kargo.
- Sektor yang tumbuh positif, Pertanian (2,19%) didukung adanya puncak panen raya padi, serta Informasi dan Komunikasi (10,88%) seiring peningkatan permintaan layanan data & aktivitas digital.



Siklus Ekonomi dengan Indikator Output Rill



# REALISASI APBN S.D 31 JULI 2020

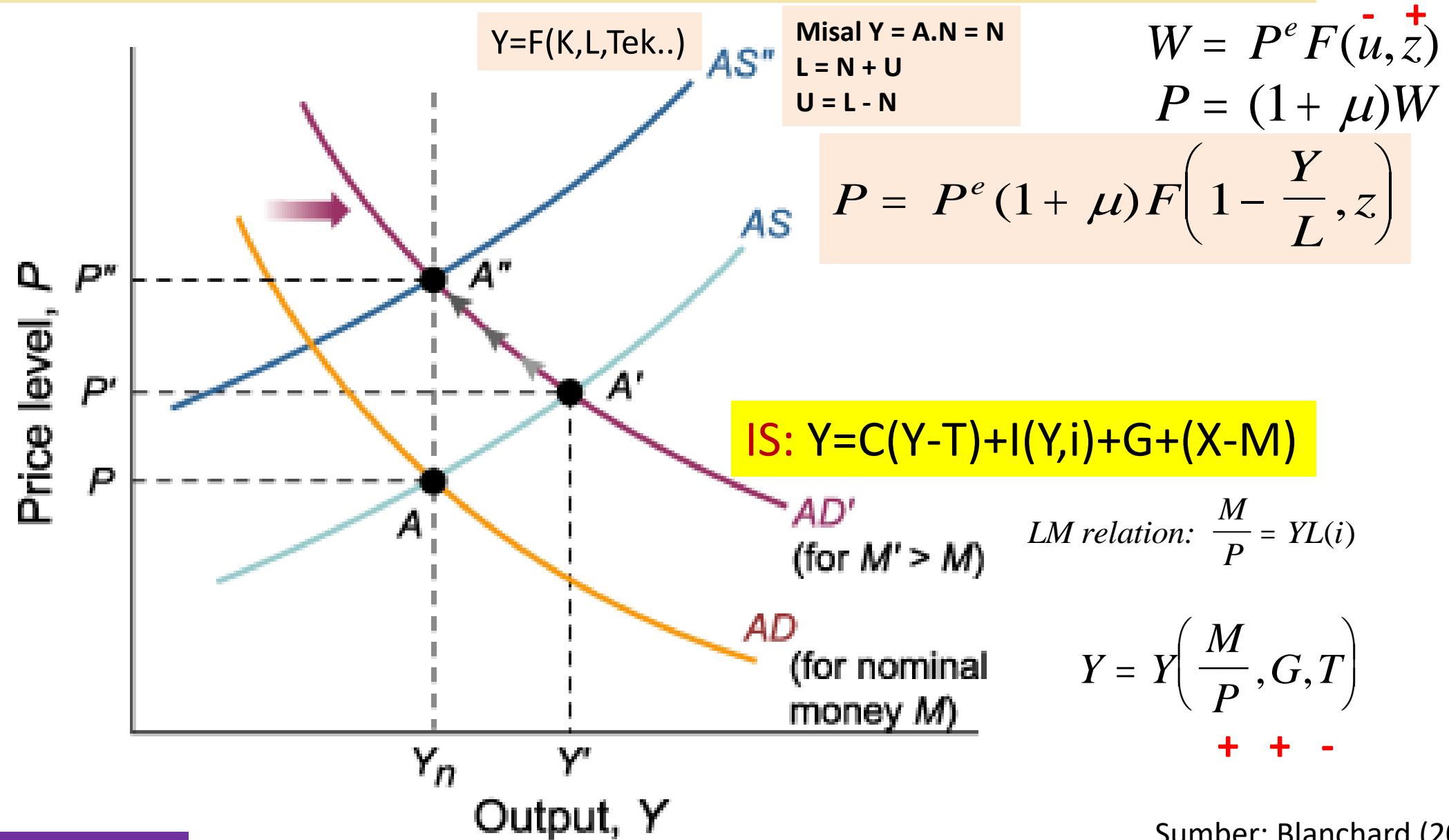
Defisit per bulan Juli 2020 mencapai 2,01% terhadap PDB



Uraian (triliun rupiah)	2019				2020			
	APBN	Realisasi s.d. 31 Juli	% thd APBN	Growth (%)	Perpres 72/2020	Realisasi s.d. 31 Juli	% thd Perpres 72/2020	Growth (%)
<b>A. PENDAPATAN NEGARA</b>								
I. PENDAPATAN DALAM NEGERI	2.165,1	1.052,4	48,6	5,8	1.699,9	922,2	54,3	(12,4)
1. Penerimaan Perpajakan	2.164,7	1.052,1	48,6	6,1	1.698,6	919,8	54,1	(12,6)
a. Pendapatan DJP (include PPh migas)	1.786,4	810,6	45,4	3,9	1.404,5	711,0	50,6	(12,3)
b. Pendapatan DBC	1.577,6	705,4	44,7	2,7	1.198,8	601,9	50,2	(14,7)
2. Penerimaan Negara Bukan Pajak	208,8	105,2	50,4	13,2	205,7	109,1	53,0	3,7
II. PENERIMAAN HIBAH	378,3	241,5	63,8	14,3	294,1	208,8	71,0	(13,5)
	0,4	0,4	85,4	(88,8)	1,3	2,5	189,2	561,6
<b>B. BELANJA NEGARA</b>	2.461,1	1.236,3	50,2	7,9	2.739,2	1.252,4	45,7	1,3
I. BELANJA PEMERINTAH PUSAT	1.634,3	761,3	46,6	9,2	1.975,2	793,6	40,2	4,2
1. Belanja K/L	855,4	419,8	49,1	11,7	836,4	419,6	50,2	(0,0)
2. Belanja Non K/L	778,9	341,4	43,8	6,3	1.138,9	374,0	32,8	9,5
II. TRANSFER KE DAERAH DAN DANA DESA	826,8	475,1	57,5	5,0	763,0	458,8	60,1	(3,4)
1. Transfer ke Daerah	756,8	433,2	57,2	4,9	692,7	410,9	59,3	(5,1)
2. Dana Desa	70,0	41,9	59,8	16,8	71,2	47,9	67,3	50,7
<b>C. KESEIMBANGAN PRIMER</b>	(20,1)	(25,3)	125,7	440,6	(700,4)	(147,4)		
<b>D. SURPLUS/ (DEFISIT) ANGGARAN (A - B)</b>	(206,0)	(183,9)	62,1	21,8	(1.039,2)	(330,2)	31,8	79,5
<i>% Surplus/ (Defisit) Anggaran terhadap PDB</i>	(1,8)	(1,16)			(6,34)	(2,01)		
<b>E. PEMBIAYAAN ANGGARAN</b>	206,0	233,6	78,0	10,0	1.039,2	503,0	48,4	115,3
<b>KELEBIHAN/(KEKURANGAN) PEMBIAYAAN ANGGARAN</b>	-	49,7			-	172,8		

- Pendapatan negara mencapai Rp922,2 T (54,3% dari target atau tumbuh negatif 12,4% [yoY]), salah satunya karena semakin banyak masyarakat dan dunia usaha yang memanfaatkan insentif pajak.
- Belanja negara mencapai Rp1.252,4 T (45,7% dari target atau tumbuh 1,3%), diprioritaskan untuk penanganan Covid-19 dan PEN.
- Defisit per bulan Juli 2020 mencapai 2,01% terhadap PDB yang dipenuhi melalui Pembiayaan yang masih on-track

## Perkembangan Output akibat peningkatan AD dan/atau AS



Sumber: Blanchard (2017)

Semoga bermanfaat  
Sampai ketemu di **topik yang lain**  
Terima kasih  
(Salam, BJ)



**IPB University**  
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