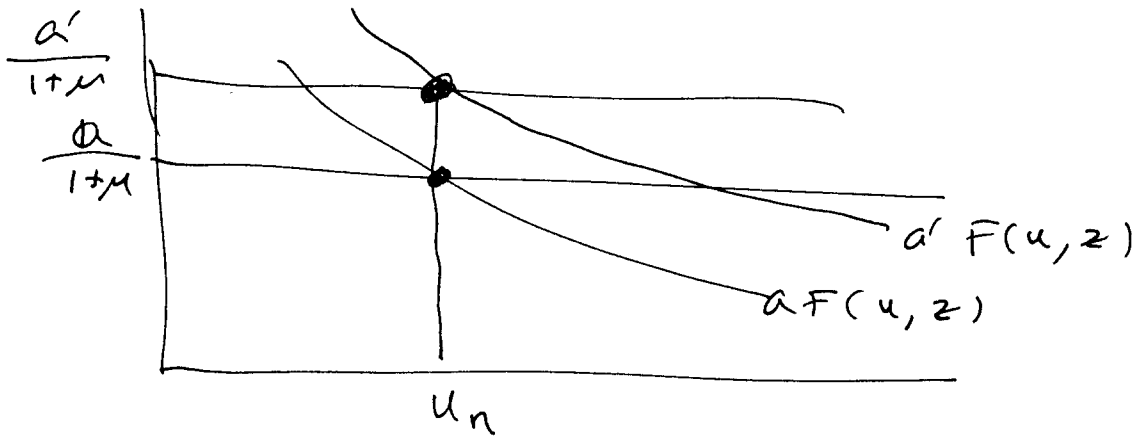
Outline

1. Change in productivity: A closer Look.
2. US Great Depression Chapt. 22.2.
3. P^e ↑.
4. Stabilization Policy. (Chapt. 24).
   (a) Lack of information
   (b) Lucas critique.
   (c) Time consistency.

a: 1 → 2.

$$W = a P^e F(u, z)$$



$$P = (1+\mu)\frac{W}{a}$$

with W taken from bargaining

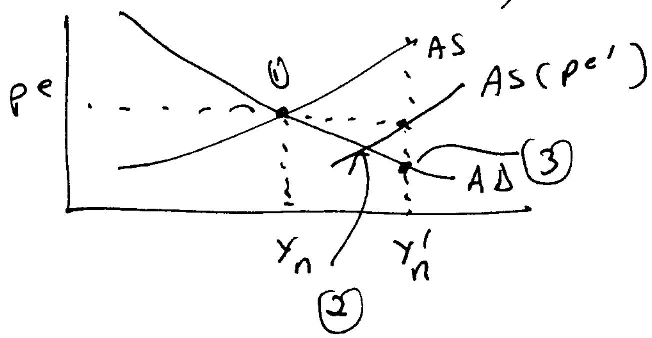
$$W = a P^e F(u, z)$$

$$P = (1+\mu) P^e F(u, z) = (1+\mu) P^e F\left(1 - \frac{Y}{a}, z\right)$$

People: people lose jobs ($Y \downarrow_{people}$).

People who stay more productive, get higher wages.

$Y = aN$, $a : 1 \to 2$.



u_n does not change.

$Y_n \uparrow$.

Price setting

Wage Bargaining.

$P = (1+\mu)$ labor cost associated with one good.

$a = 1 \longrightarrow 2$

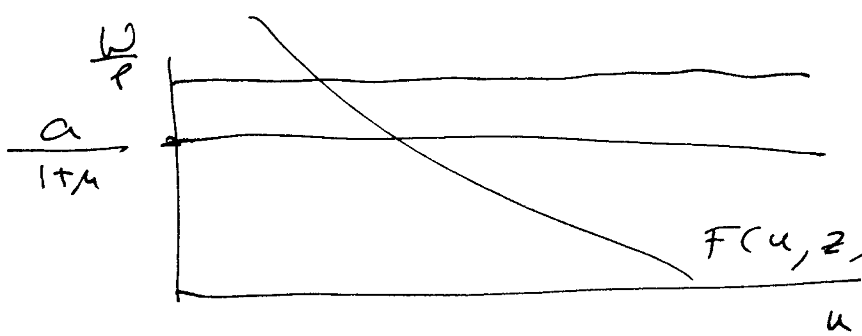
↑ one person need to make one good. — 1/2 person

cost: W — $\frac{W}{2}$

Labor cost of producing one good:

$\frac{W}{a}$ ← labor productivity.

$$P = (1+\mu)\frac{W}{a}$$



~~F N H~~

In times of more rapid technical change (a ↑)

Income inequality ~~goes~~ goes up.

1920's., 1980's → 1990's.

Our analysis above is part of story of ~~inect~~ increased inequality in times of accelerated change.

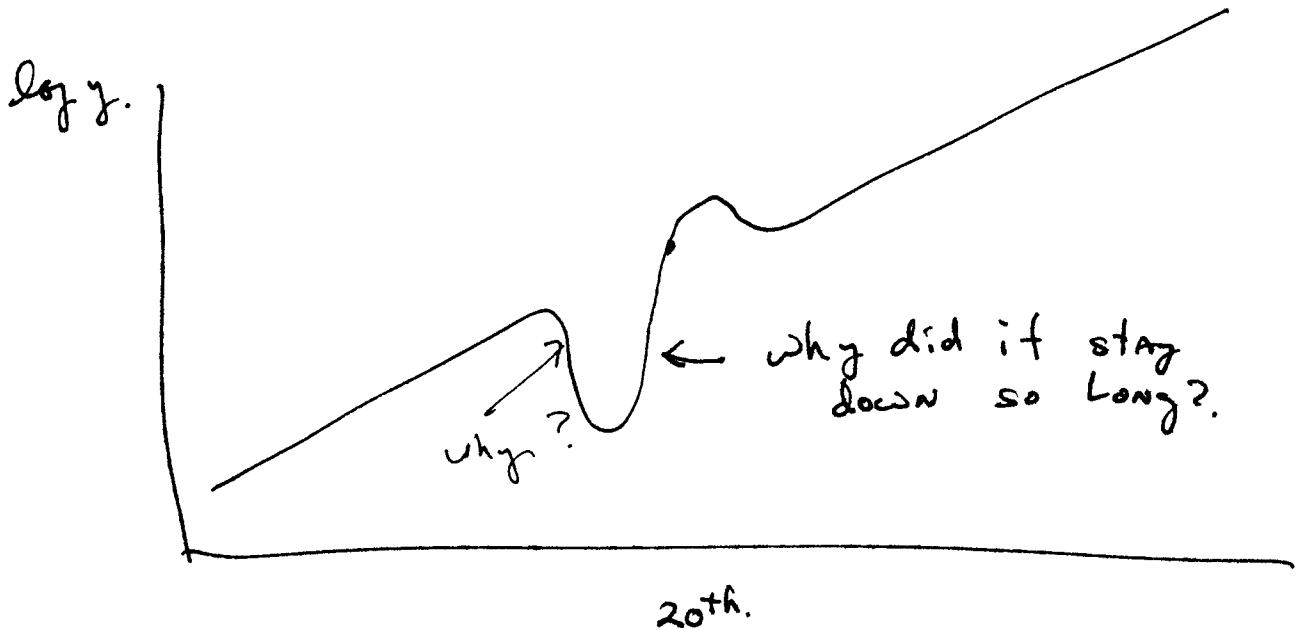
New things: Not everyone is ~~the~~ same.

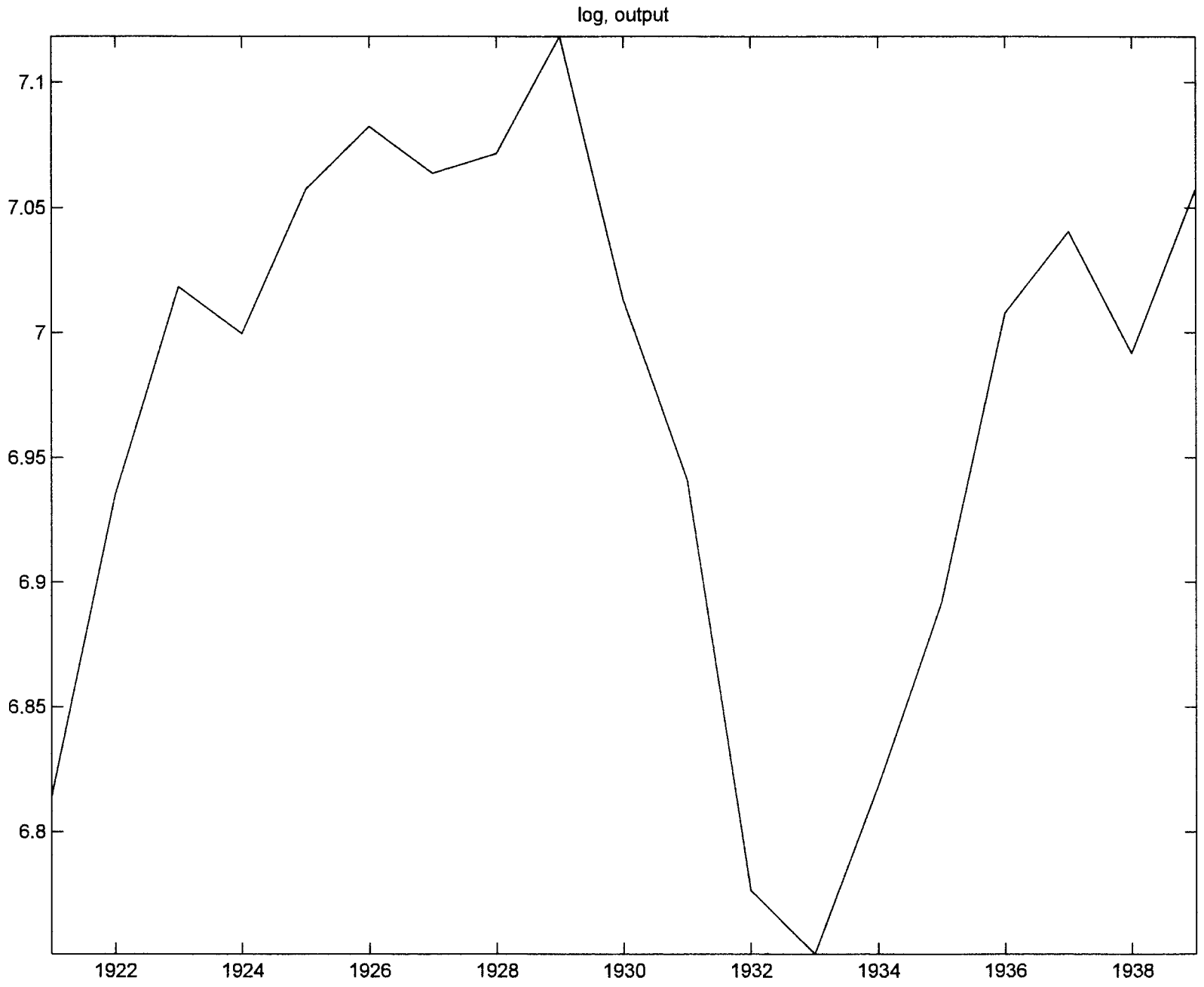
old & hard time
young & easier time.

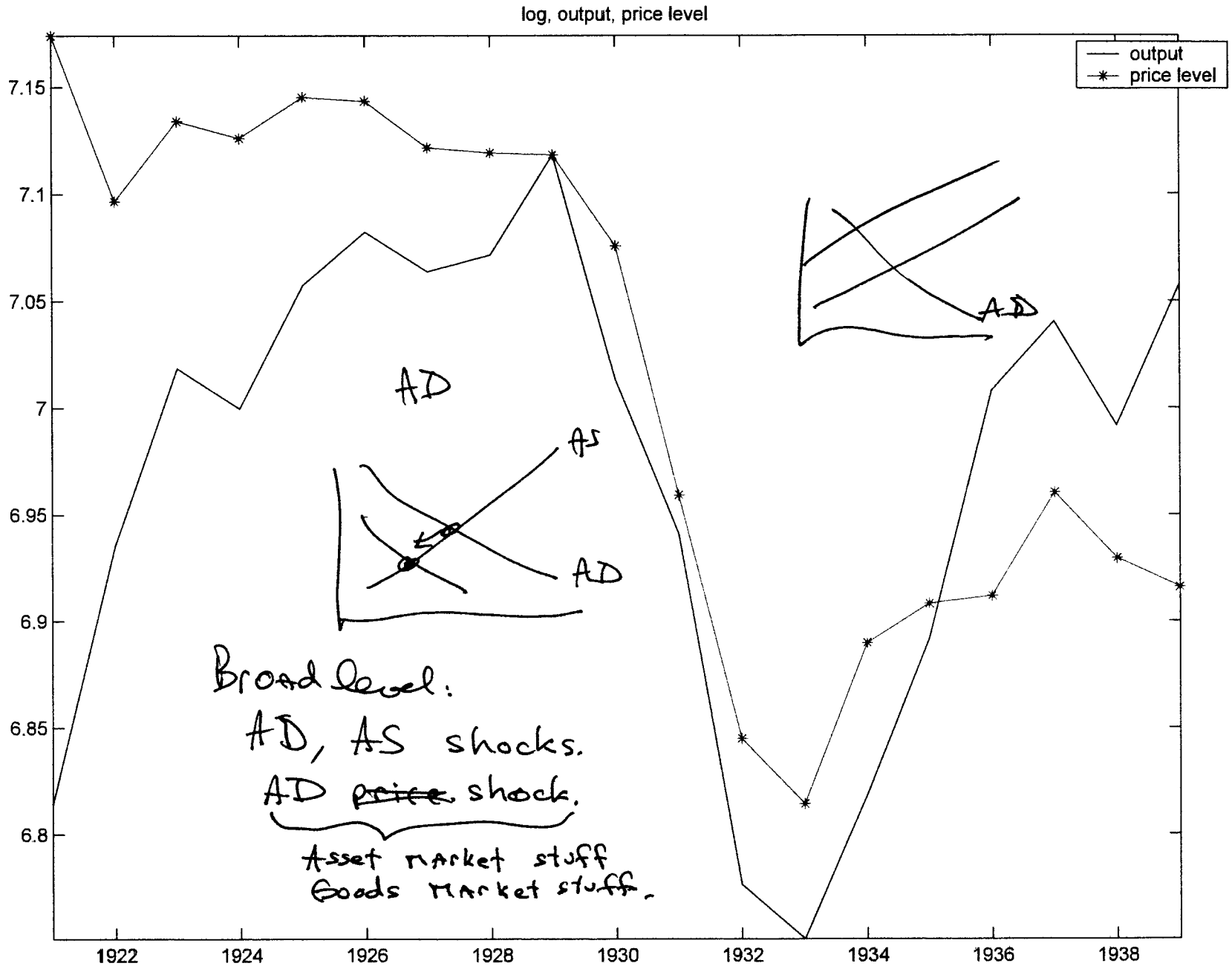
better access to education.

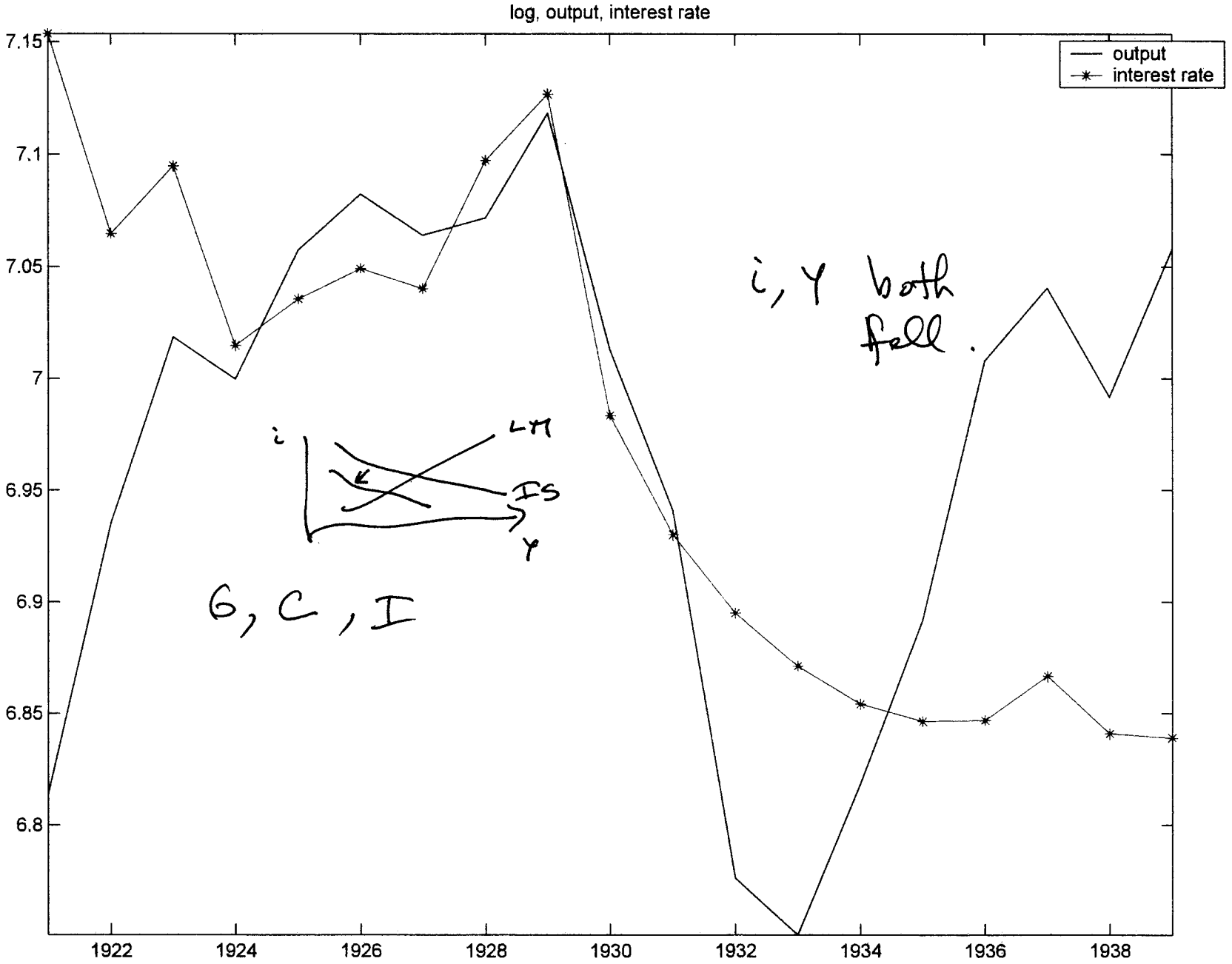
Luck.

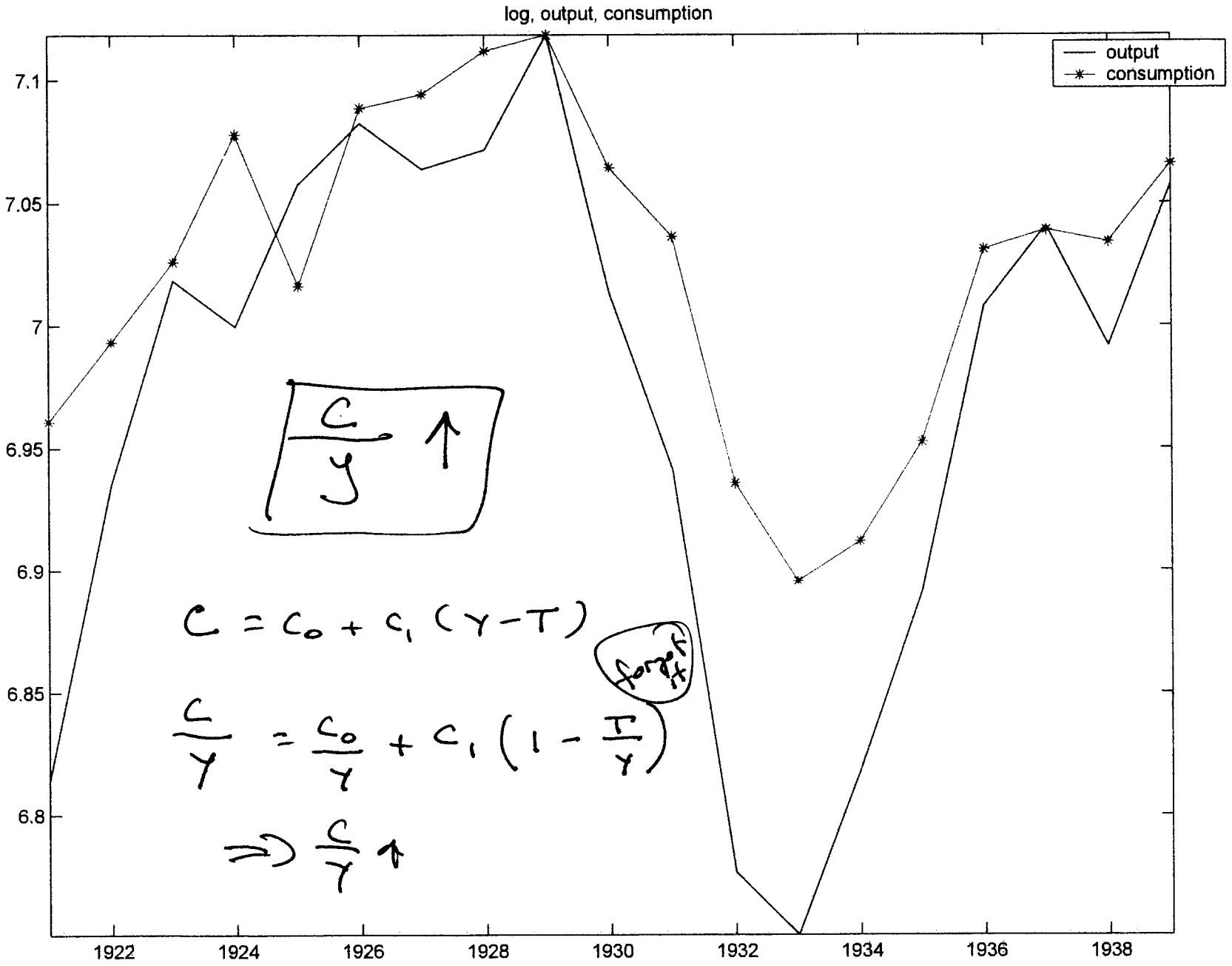
US Great Depression.

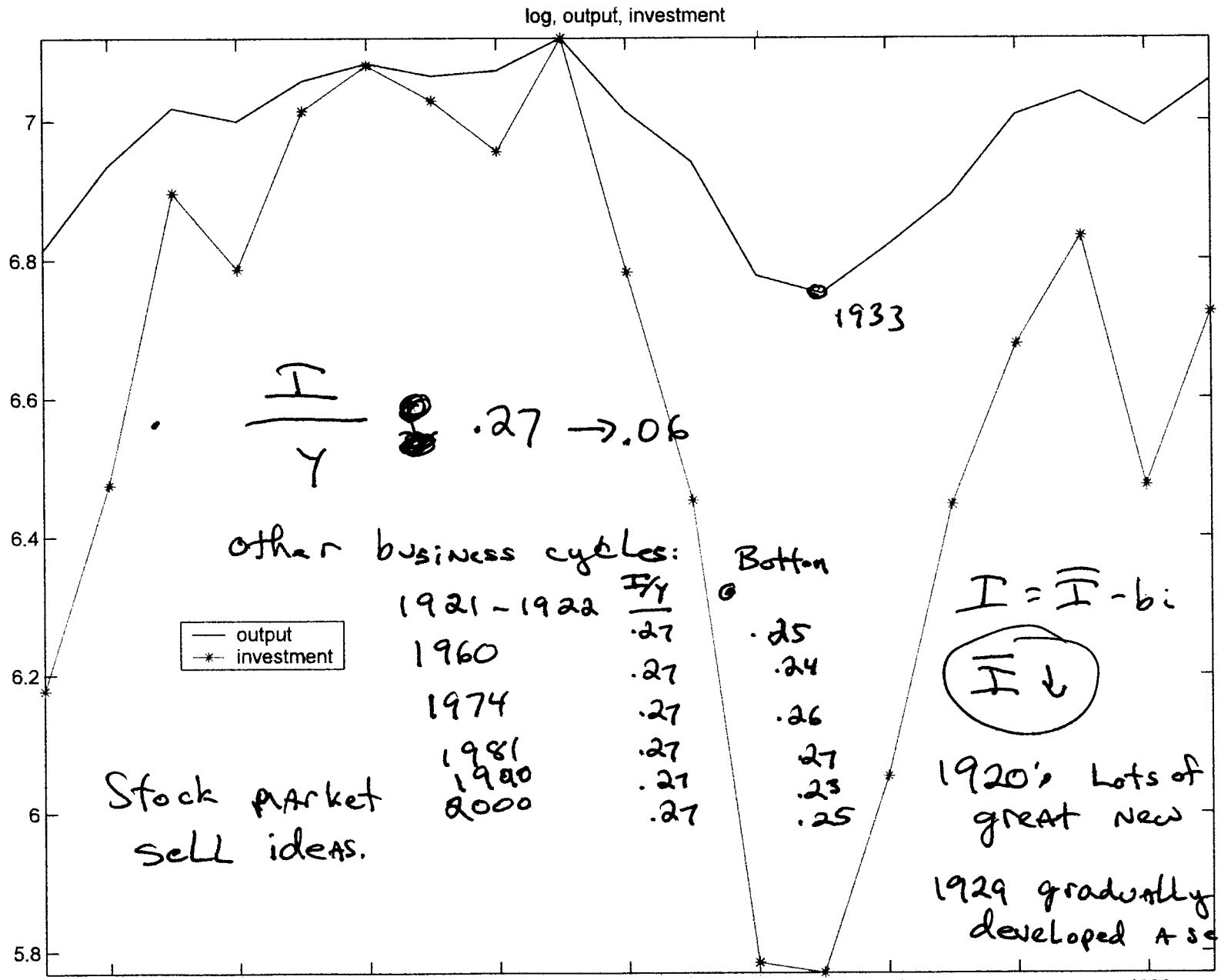



log, output
7.1
7.05
7
6.95
6.9
6.85
6.8
1922
1924
1926
1928
1930
1932
1934
1936
1938


log, output, price level
output
price level
7.15
7.1
7.05
7
6.95
6.9
6.85
6.8
1922
1924
1926
1928
1930
1932
1934
1936
1938
AD
AS
AD
AD
Broad level:
AD, AS shocks.
AD ~~price~~ shock.
Asset market stuff
Goods market stuff.


log, output, interest rate
output
interest rate
7.15
7.1
7.05
7
6.95
6.9
6.85
6.8
1922
1924
1926
1928
1930
1932
1934
1936
1938
i, Y both fall.
i
LM
IS
Y
G, C, I


log, output, consumption
output
consumption
7.1
7.05
7
6.95
6.9
6.85
6.8
1922
1924
1926
1928
1930
1932
1934
1936
1938
$\frac{C}{Y} \uparrow$
$C = C_0 + c_1 (Y - T)$
forget it
$\frac{C}{Y} = \frac{C_0}{Y} + c_1 \left(1 - \frac{T}{Y}\right)$
$\Rightarrow \frac{C}{Y} \uparrow$


log, output, investment
output
investment
7
6.8
6.6
6.4
6.2
6
5.8
1922
1924
1926
1928
1930
1932
1934
1936
1938
1933
I/Y ↓ .27 → .06
other business cycles:
1921-1922 .27 .25
1960 .27 .24
1974 .27 .26
1981 .27 .27
1990 .27 .23
2000 .27 .25
Bottom
Stock market sell ideas.
I = Ī - bi
Ī ↓
1920's Lots of great new ideas.
1929 gradually developed a sense that expectations where way too optimistic..

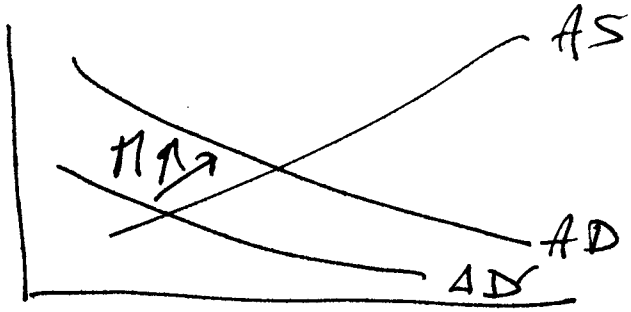
This shows the actual data on I/Y in different recessions. Note how much bigger the drop in I/Y was in the Great Depression compared with later recessions.

Table 1: Behavior of Investment-to-GNP Ratio in Recessions

Peak to Trough	Peak I/Y	Trough I/Y
1929III-1933I	0.25	0.06
1948IV-1949IV	0.26	0.23
1953II-1954II	0.24	0.22
1957III-1958II	0.24	0.21
1960II-1961I	0.23	0.21
1969IV-1970IV	0.24	0.22
1973IV-1975I	0.26	0.22
1980I-1982IV	0.27	0.22
1990III-1991I	0.23	0.21
2001I-2001IV	0.26	0.26

Notes: Source for postwar business cycle data: Bureau of Economic Analysis' website. I - Nominal household purchases of durable goods, plus gross private domestic investment; Y - Nominal gross domestic product

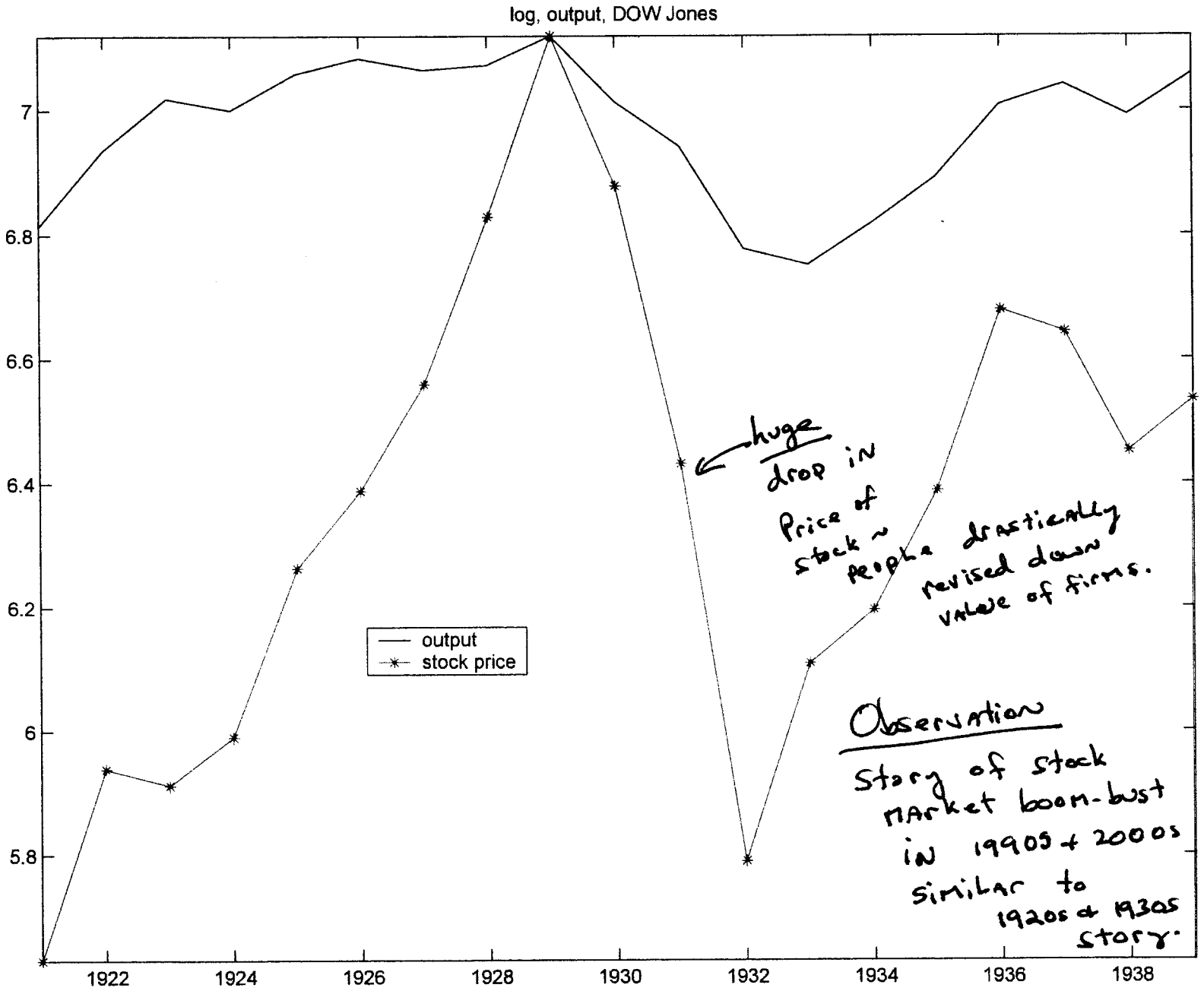
PUZZLE: $\bar{Y} \downarrow$.



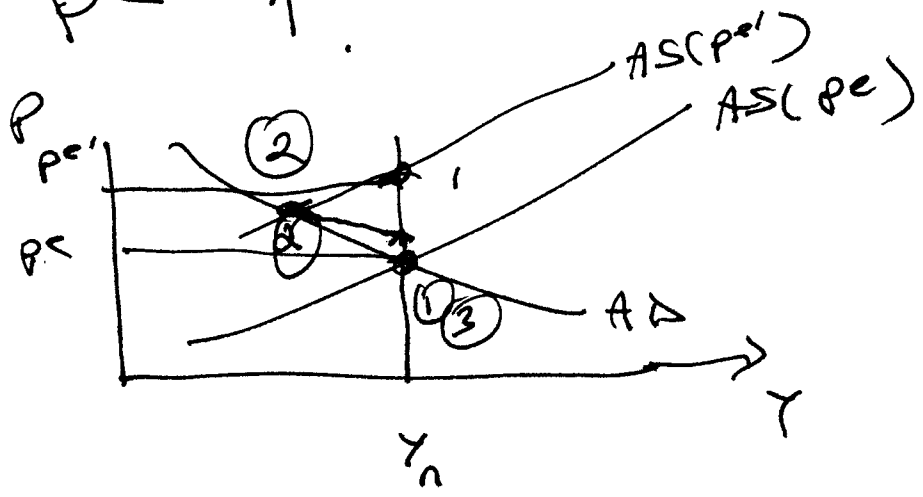
Monetary authorities did not ~~#~~ make M ↑. Actually, M ↓ by a huge amount (something to do with bank ~~sg~~ panics).

Possible ~~new~~ explanation of $\bar{Y} \downarrow$:
1920's period of lot's of optimism, but in the end people ~~who~~ were ove optimistic.

Look at stock market for people's valuation of investment projects. After 1929, stock market collapsed, consistent with view that their valuation of activities of firm less profitable than they thought before.

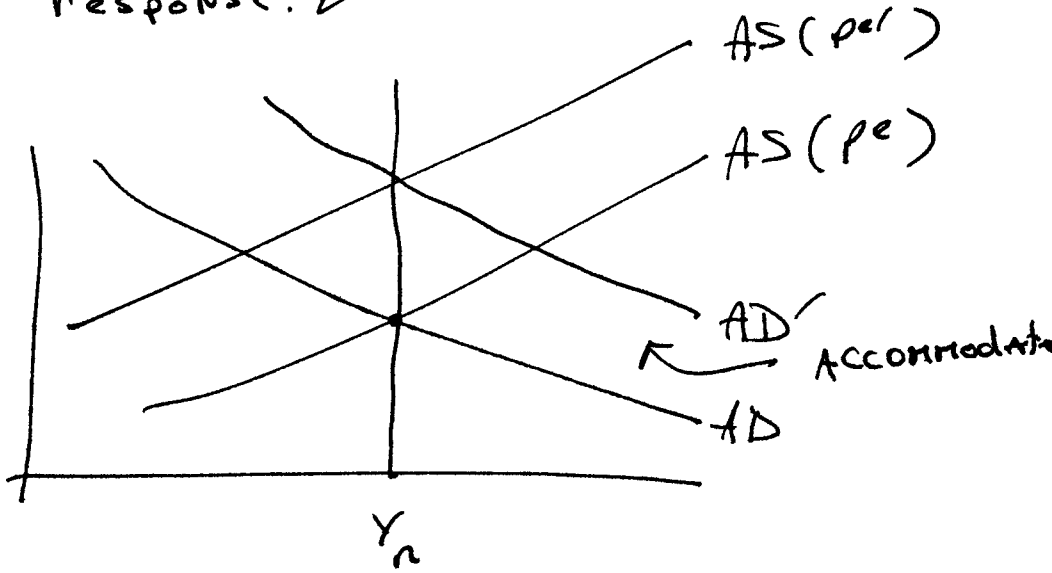

log, output, DOW Jones
7
6.8
6.6
6.4
6.2
6
5.8
1922
1924
1926
1928
1930
1932
1934
1936
1938
output
stock price
huge drop in Price of stock ~ people drastically revised down value of firms.
Observation
Story of stock market boom-bust in 1990s + 2000s similar to 1920s + 1930s story.

5. p^e ↑.



(a) No Π response ✓

(b) Π response. ✓



Π response would occur if C.B. cares about people.

C.B. Dilema

p^e ↑

Democratic Society that went through Great Depression.
1946 FULL employment act.

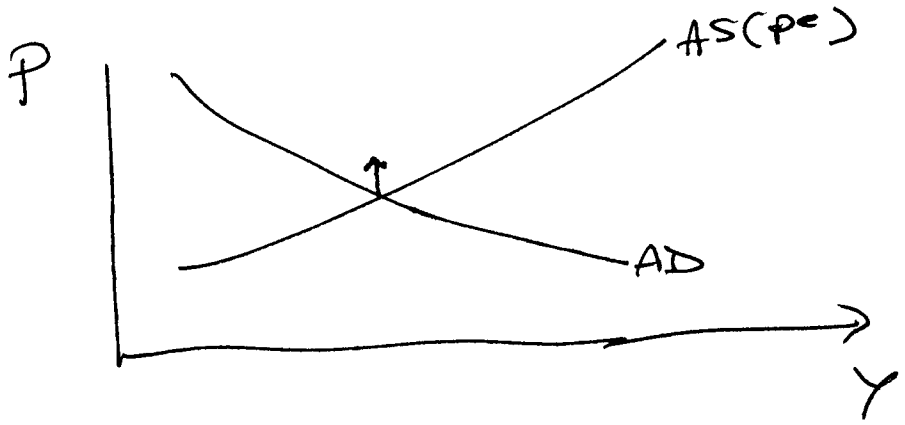
Accommodate ↑

good: No recession
bad: higher prices

No Accommodate

bad: recession
good: No ~~change~~ Permanent change in P.

Phenomenon: C. B. everywhere are worried that expectations will become unhinged.



A rise in p^e could be self-fulfilling if CB accommodates.

CB's try to convince people that they are "tough" so that if $p^e \uparrow$, they would not accommodate. This is supposed to prevent rise in p^e in first place.

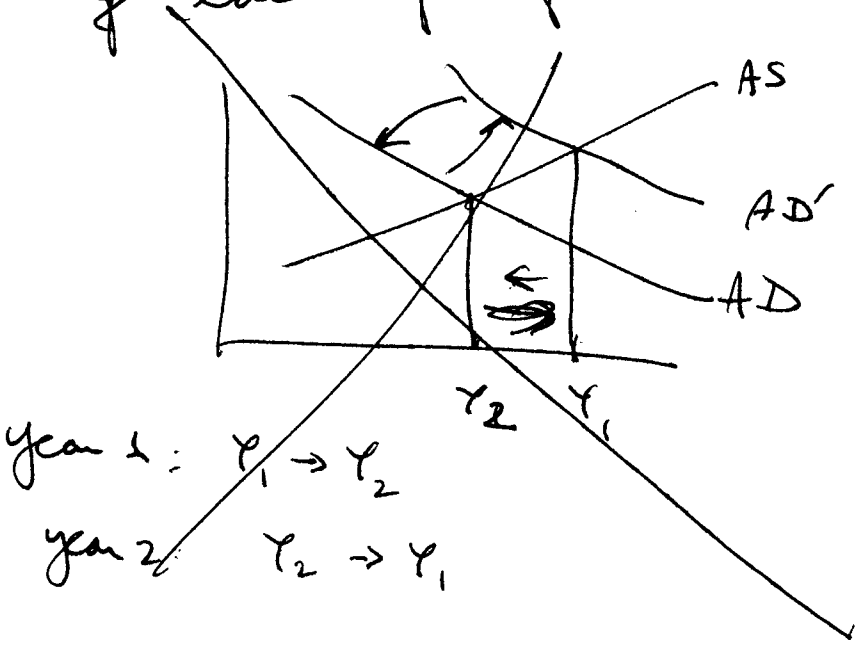
Stabilization Policy.

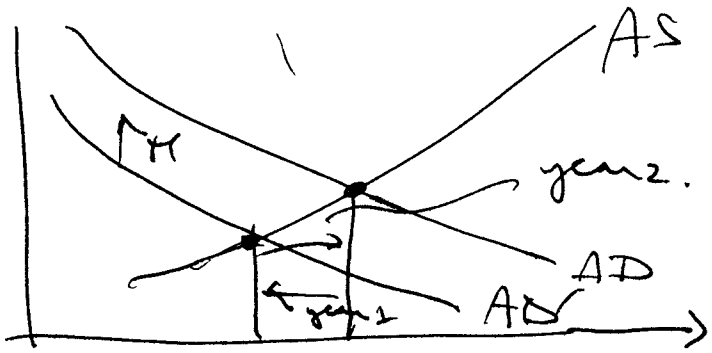
So far:

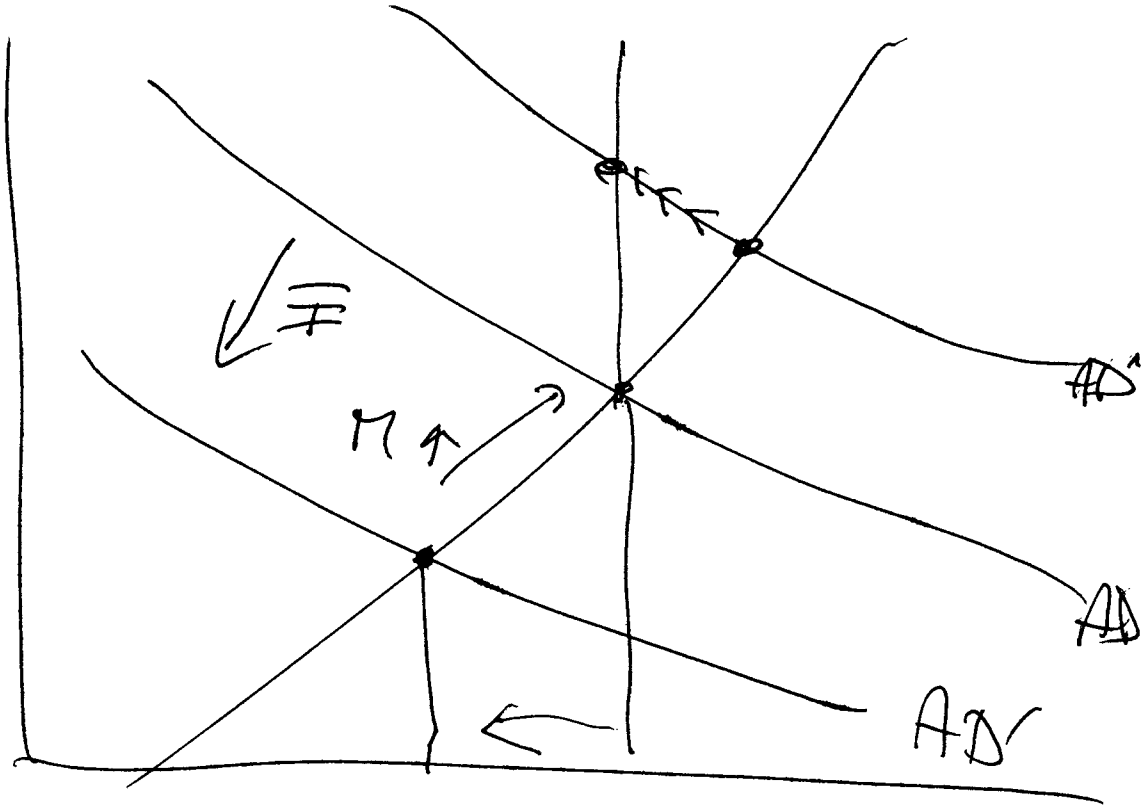
Intellectual foundation for proposition that T, G, M should be manipulated to offset shocks.

Following discussion will cast doubt on proposition

(a) ~~lack~~ lack of information.







Year 1: $\overline{I}\downarrow$, AD ~~shift~~ shifts to AD'

year 2: $\overline{I}$ back up, AD back to AD.

Suppose data comes in one year late. Then $\Pi\uparrow$ hits AD after problem is gone, ~~producing higher pai~~

(b) Lucas Critique.

AD-AS model misses something.

$$C = \underset{=}{C_0} + \underset{=}{C_1}(Y-T).$$

$Y \uparrow \$1$, C goes up by $\$1$ (C_1) no matter what.

Find $1 on sidewalk. (temporary)

raise $1. (permanent).

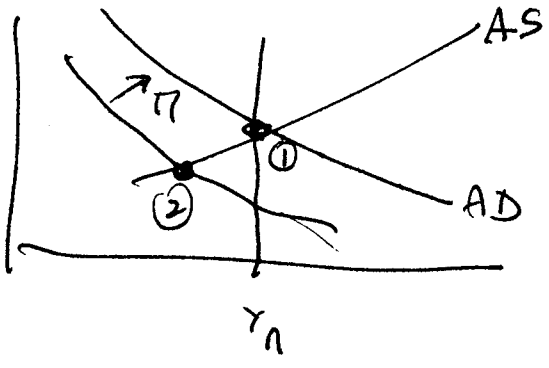
ΔC bigger for permanent than temporary.

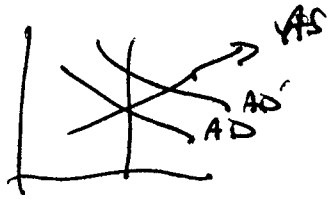
1968. Johnson. Vietnam war.

had to raises taxes.

one ~~yr~~ time only rise.

Lucas:
don't stabilize, you won't get is right.
Expectations matter for C_1 in ways that are hard to predict.





Lucas observation:

Impact of a policy change on economy depends on the parameters of the model.

But, the value of the parameters depends on whether people expect policy changes to be temporary or permanent.

Policy makers cannot know what people will think. For example, 1968 tax hike was "temporary" but when time came to undo it, another Law could have been passed to make it permanent.

So, ~~that~~ figuring out what people think is tricky. Since we can't easily figure this out, we should not engage in stabilization policy. According to Lucas