Outline

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1. US in recent times
   Puzzling:
   (a) 19th century pattern very different.
   (b) Theories of imperialism completely contradicted.

2. Models.
   (a) why do we need them?.
   (b) Road map for models that we'll construct.
   (c) Circular flow diagram.
   (d) Keynesian Cross Model.

(Planned) desired vs. Actual C, I, G,

Equilibrium, Disequilibrium

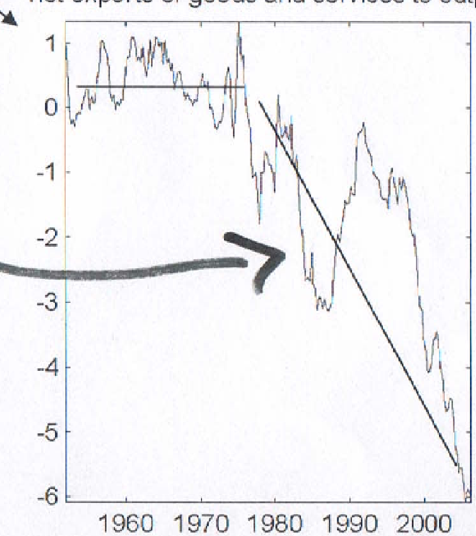
Disequilibrium dynamics.

US National Income and Product Accounts

$$\frac{C}{Y} + \frac{I}{Y} + \frac{G}{Y} + \frac{X-M}{Y} = 1$$

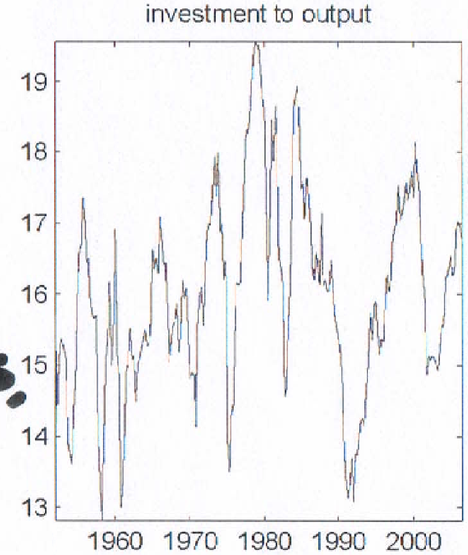
Net exports was roughly balanced in 1960s and 1970s and went negati starting in early 1980s

net exports of goods and services to output



Why?

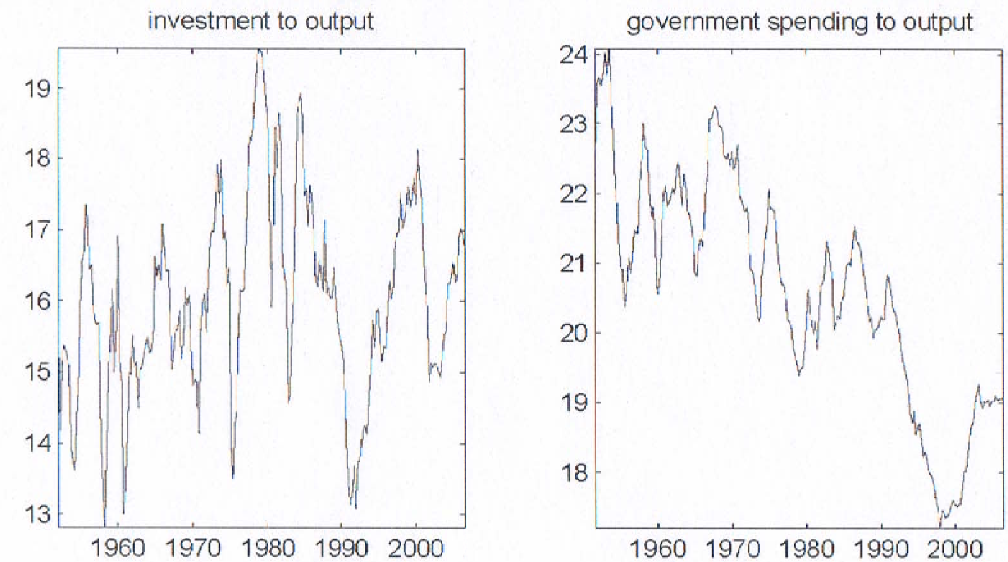
US National Income and Product Accounts



I is driven by expectations, i.e., gut feeling.

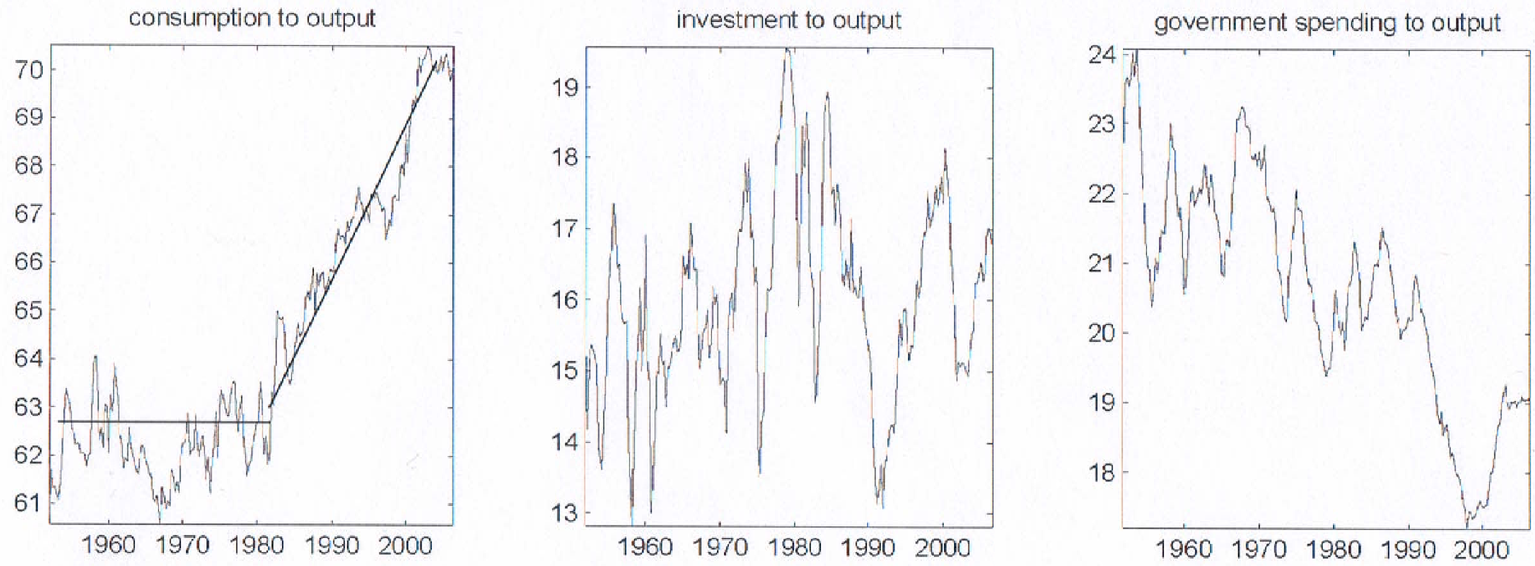
Investment seems to just bounce up and down without any trend

US National Income and Product Accounts



Government purchases of goods and services is going down over time (but, not government *expenditures*)

US National Income and Product Accounts

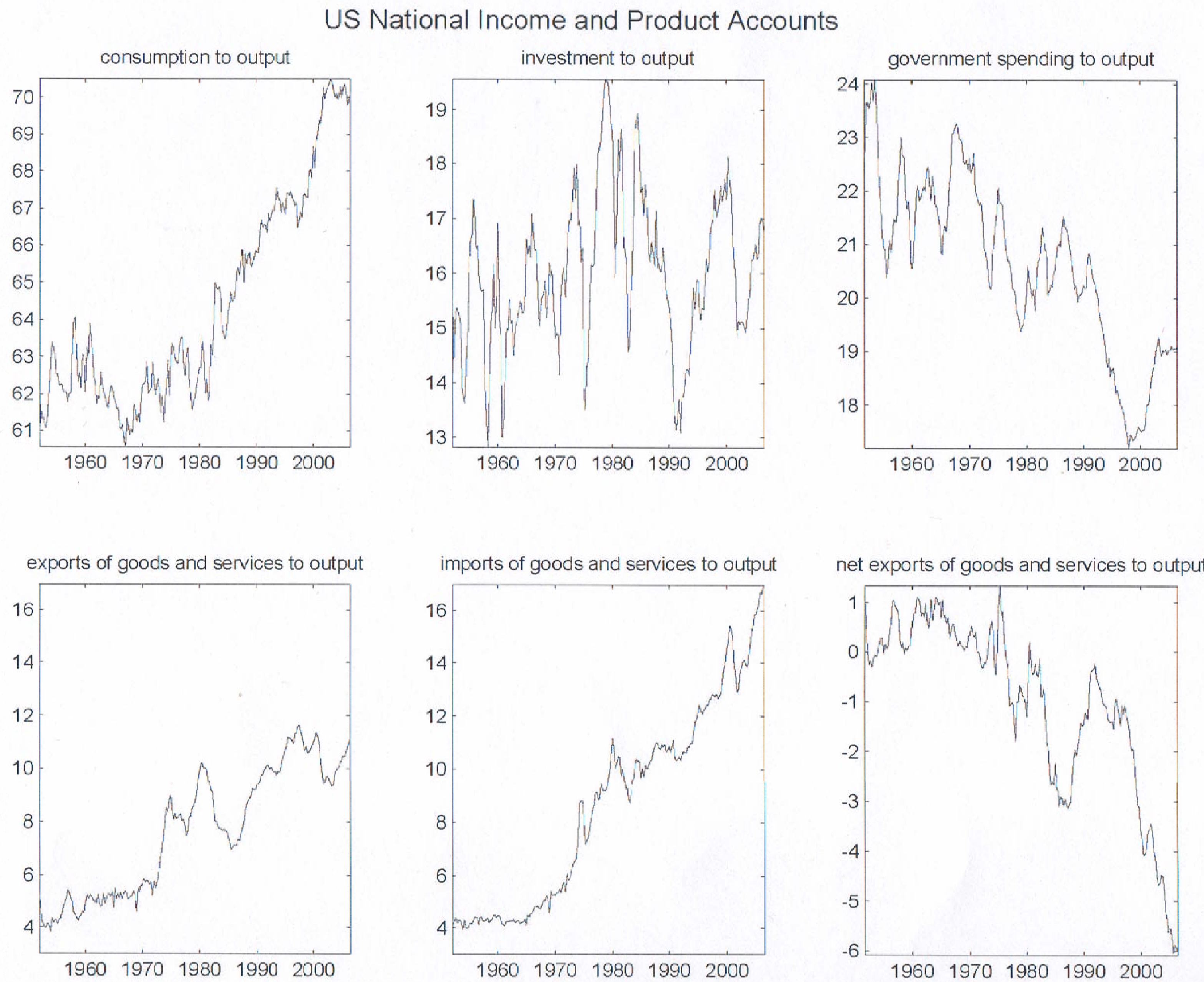


Something happened to the consumption to output ratio starting in early 1980s

$\frac{X-M}{Y} \downarrow$ because $\frac{C}{Y} \uparrow$ (a lot).

Deeper: Financial asset side: why do foreigners want all these US financial claims?

Goods side: $\frac{C}{Y} \uparrow$?


US National Income and Product Accounts
consumption to output
investment to output
government spending to output
exports of goods and services to output
imports of goods and services to output
net exports of goods and services to output
1960 1970 1980 1990 2000

Possible explanation

Optimistic

1. technology has ~~had~~ removed a barrier from foreign ownership of US financial assets. So, they jump on them!

2. $C/Y \uparrow$ because the value of Americans' financial assets jumped + they didn't need to save anymore.

Pessimistic ~ American stopped saving because it's lazy. Foreigners were nice enough to make us loans.

Fear that foreigners will suddenly stop being nice.

Government Spending and GDP, billions of dollars						
source: http://www.bea.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N						
Variable	1940	1941	1942	1943	1944	1945
GDP	101.4	126.7	161.9	198.6	219.8	223.1
change from previous year		25.3	35.2	36.7	21.2	3.3
Government	15	26.5	62.7	94.8	105.3	93
change from previous year		11.5	36.2	32.1	10.5	-12.3
Nat'l Defense	2.5	14.3	51.1	84.2	94.5	82
change from previous year		11.8	36.8	33.1	10.3	-12.5

$\boxed{G\uparrow \rightarrow Y\uparrow.}$

Naive thought G↑ would not make Y change.

Models.

Questions.

1. Y up a Lot in WWII.
   G up too, was it $G\uparrow \Rightarrow Y\uparrow$

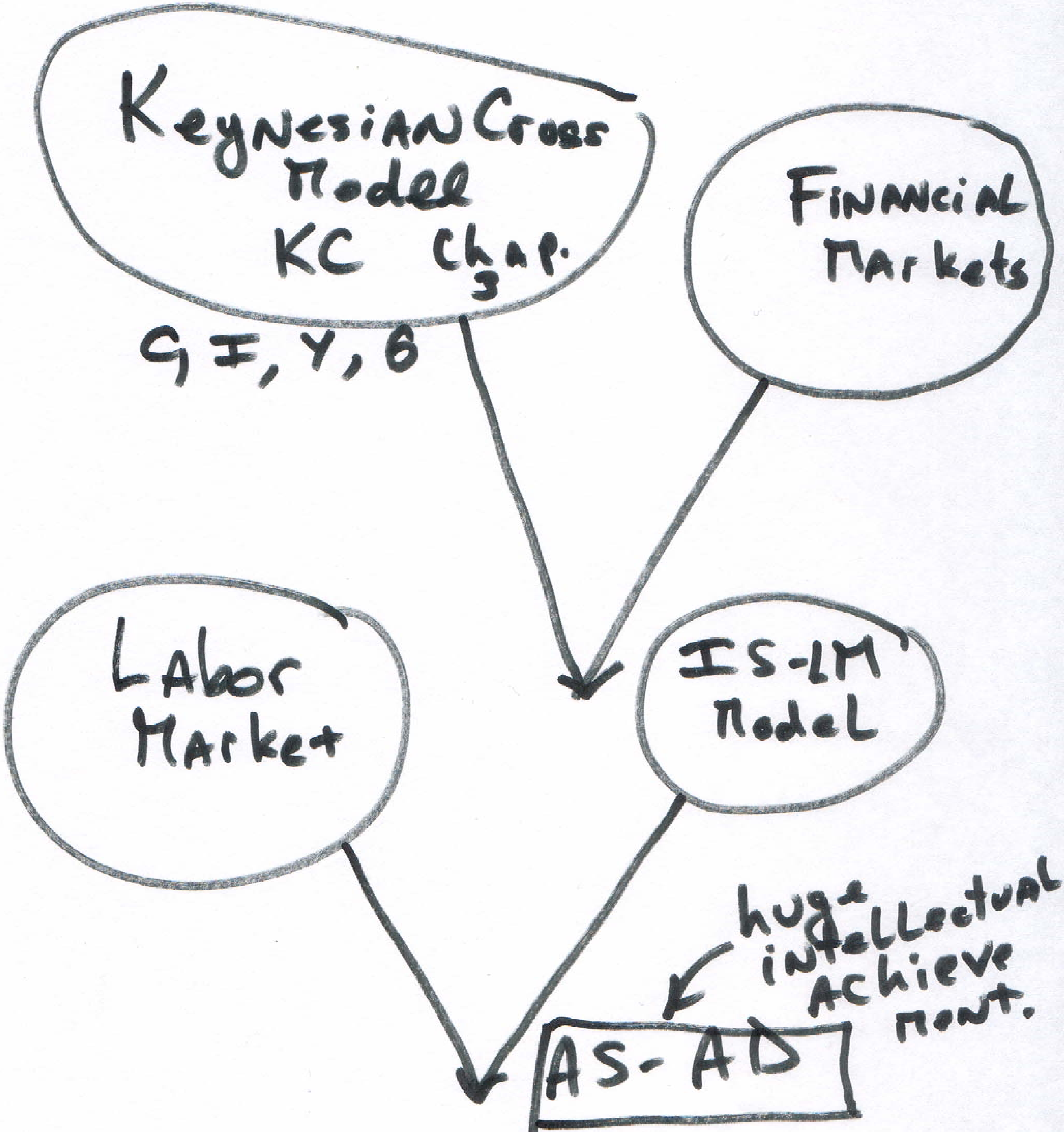
2. Y fluctuates.
   fickle Business investment is cause.
   2001 recession.

Observations
Puzzles

hypothesis
$G\uparrow \Rightarrow Y\uparrow$
in WW II

hypothesis $\rightarrow$ Model $G\uparrow \rightarrow Y\uparrow$ $\rightarrow$ behavior

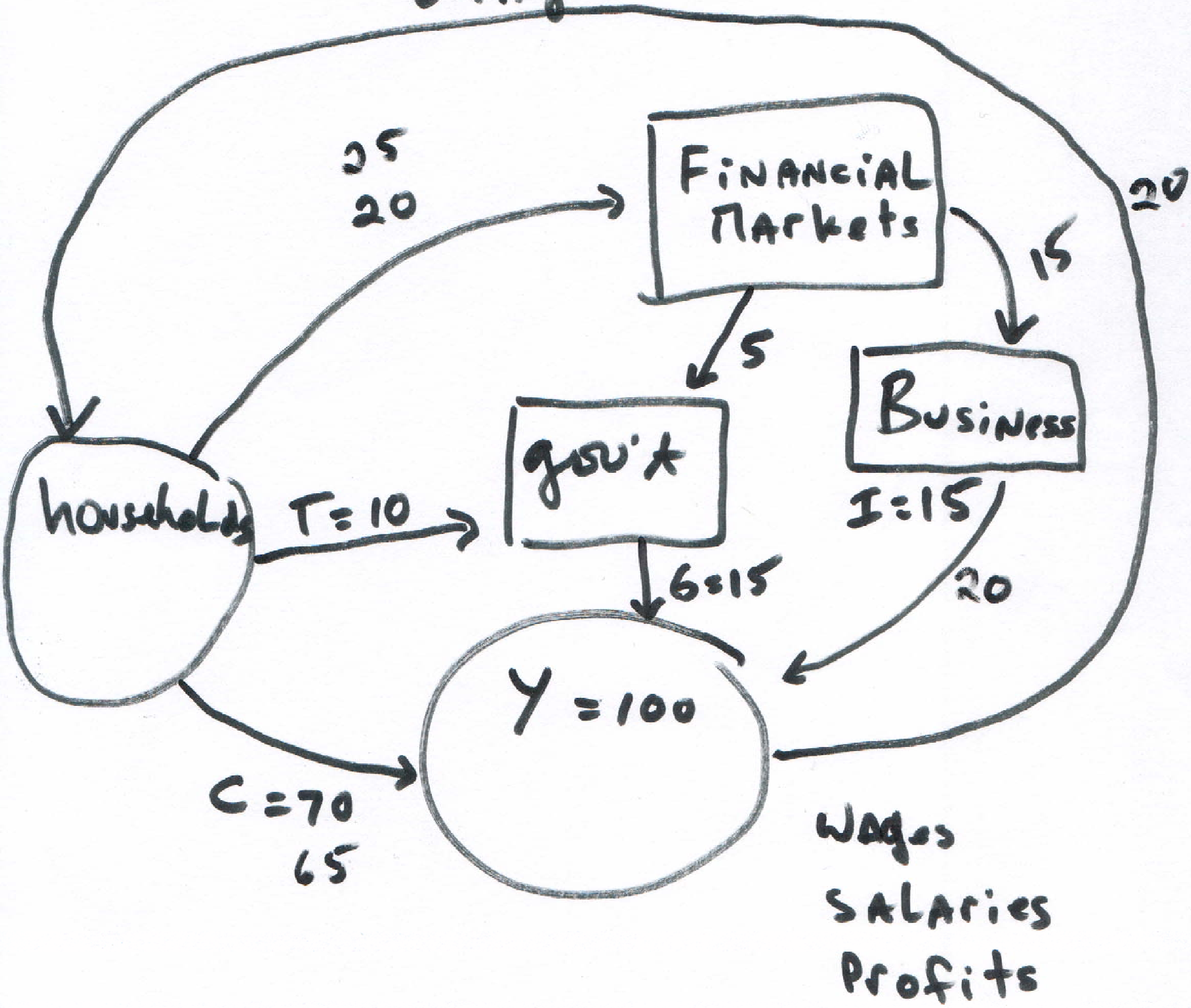
Road map



Labor markets, Financial markets, Goods markets all at the same time.

Modify to bring in foreign sector.

Circular flow diagram.



$Y = 100$

$T = 10$

$$S = \underbrace{Y - T}_{\text{disposable income}} - C = 20$$

Keynesian cross

high circular flow disturbed by changes in G, I, ...

C^d ~ desired, planned consumption.

I^d ~ " " Investment

G^d ~ " " gov't spending

$>0 \qquad 0<c_1<1$

$$C^d = c_0 + c_1 Y_D$$

$Y_D = Y - T$ MPC

Keynesian cross

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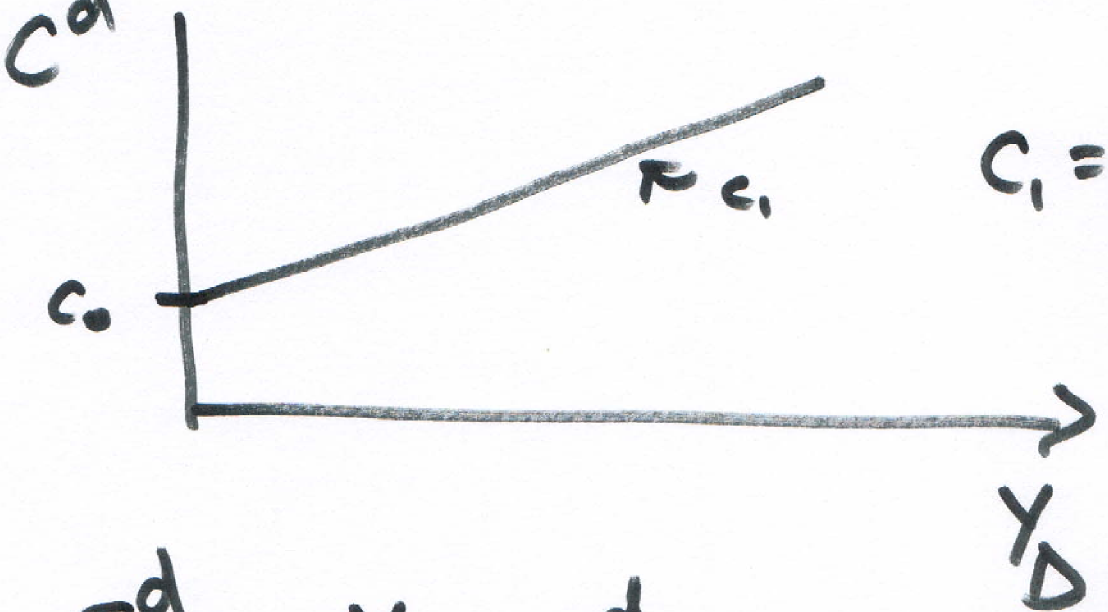
$Y_D = Y - T$ ← MPC



$c_1 = \frac{3}{4}$

$$S^d = Y_D - C^d = -c_0 + \underbrace{(1 - c_1)}_{MPS} \times Y_D$$