NATIONAL INCOME II;
GOVERNED AND OPEN ECONOMY

OUTLINE:

I   GOVERNMENT

A Government Spending
B Taxation
C Budget
D Provincial and Municipal Governments

II   NET EXPORTS

A Net Export Function
B Shifts in NX Function

III EQUILIBRIUM NATIONAL INCOME

A   AE
B Determining Equlibrium

IV CHANGES IN NATIONAL INCOME
A   The Simple Multiplier
B   NX

V   FISCAL POLICY

I GOVERNMENT

A Government Spending

1. Remember, **P are held constant**

2. **Fiscal Policy** = use of G/T to affect Ye

3. G affects AE *directly*; T affects AE *indirectly* through Yd and C

4. Remember, G is exclusive of Transfer Payments

5. Transfer Payments increase Yd

B Taxation

1. Taxes decrease Yd; Transfer Payments increase Yd

2. Yd = Y - (Net Taxes) , where Net Taxes = T - TP

3. Usually, we just call net taxes, taxes, and define
$$Yd = Y - T$$

4. In most cases, T are income taxes: $T = f(Y)$

C Budget

1. $\boxed{\textbf{Budget} = \textbf{T - G}}$ = Gov't Revenues - Gov't Expend.

2. **Budget Surplus** = T - G > 0 ie. Revenues > Expend.
   Budget Deficit = T - G < 0 ie. Expend. > Revenues
   Balanced Budget = T - G = 0 ie Revenues = Expend.

3. **Public Savings** = Budget Surplus

4.

Taxes T	induced	T = f (Y)
Gov't Expend G	autonomous	G = $\underline{G}$

5.
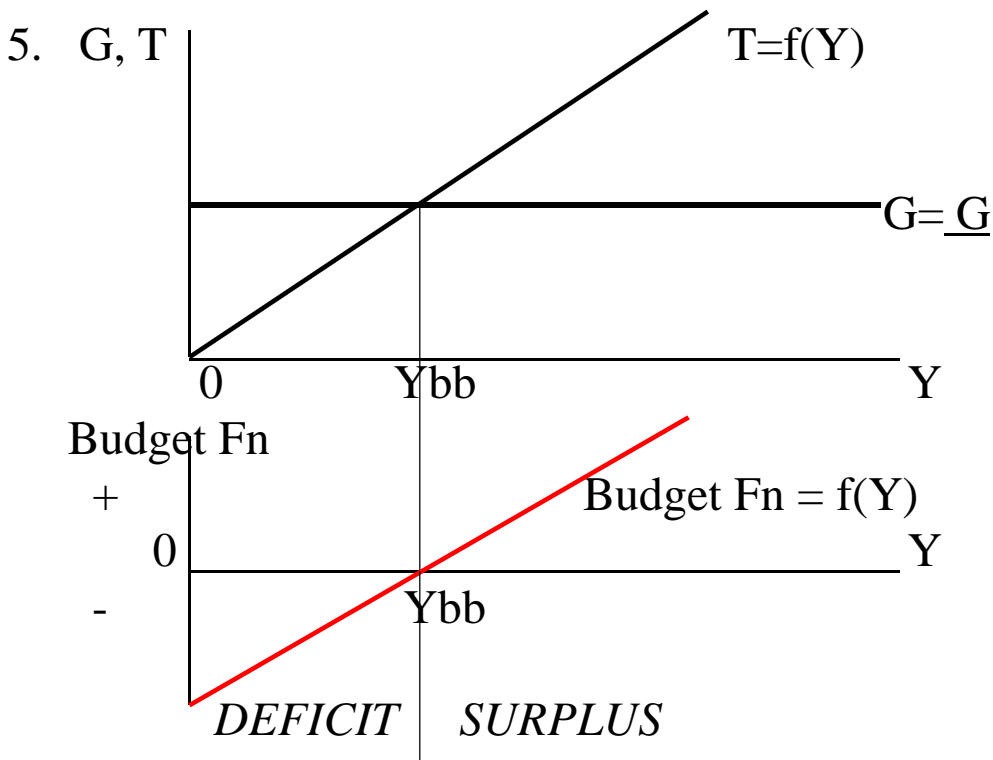
Budget Fn: (T - G) = f (Y) = $IN - $OUT

D Provincial and Municipal Governments

1. Federal Government
- taxes about equal to (Prov + Mun.) taxes
- G purchases less than (Prov + Mun) purchases – Fed spends more on Transfer Payments

2. ⚑ G and T in the NIEA include all three levels of Gov't

II NET EXPORTS

A Net Export Function

1. $\boxed{NX = X - M = BOT}$ (Balance of Trade)
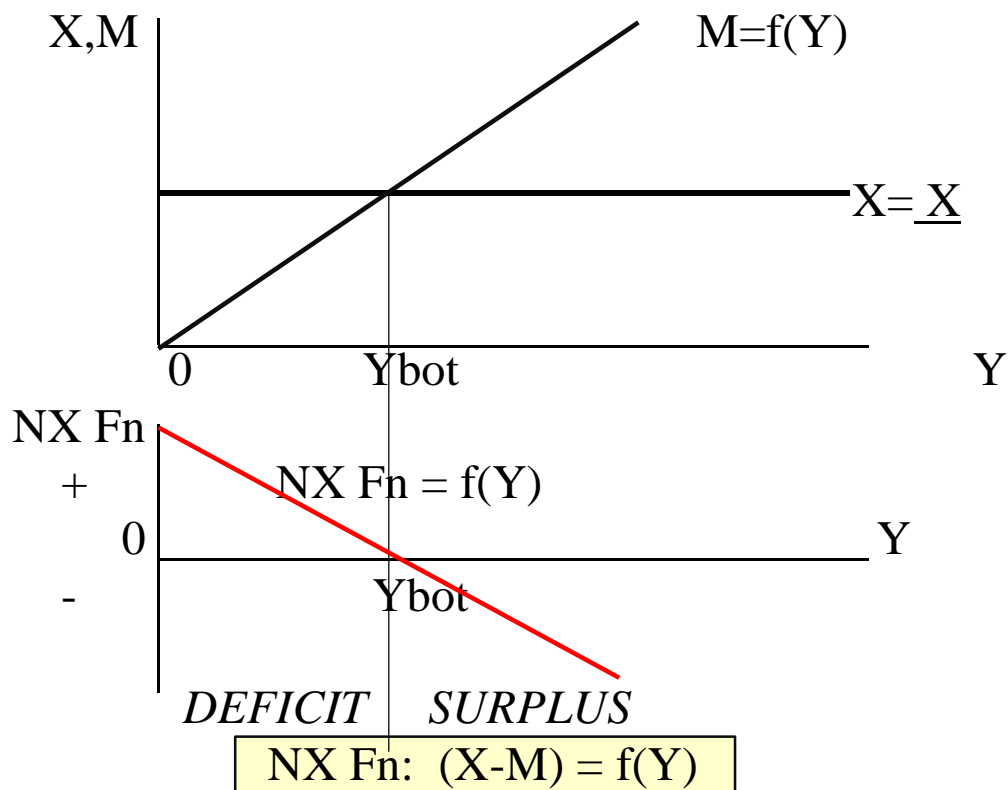
2. **BOT Surplus** $=$ $X - M > 0$; $\$in > \$ out$
   BOT Deficit $=$ $X - M < 0$; $\$out > \$in$
   BOT $=$ $X - M = 0$; $\$in = \$out$

3.

Exports X	autonomous	$X = \underline{X}$
Imports M	induced	$M = f(Y)$

4.

NX Fn: $(X-M) = f(Y)$

B Shifts in NX Function

⚑ rel. Cdn P rise IF rel. Cdn inflation high OR ev rises

Exogenou Cause	Effect on X	Effect on M	Effect on NX	Effect on Ye
relative Cdn P's				
ev of Cdn$				
relative Cdn P's				
ev of Cdn$				

Example: rise in rel. Cdn P and/or rise in ev
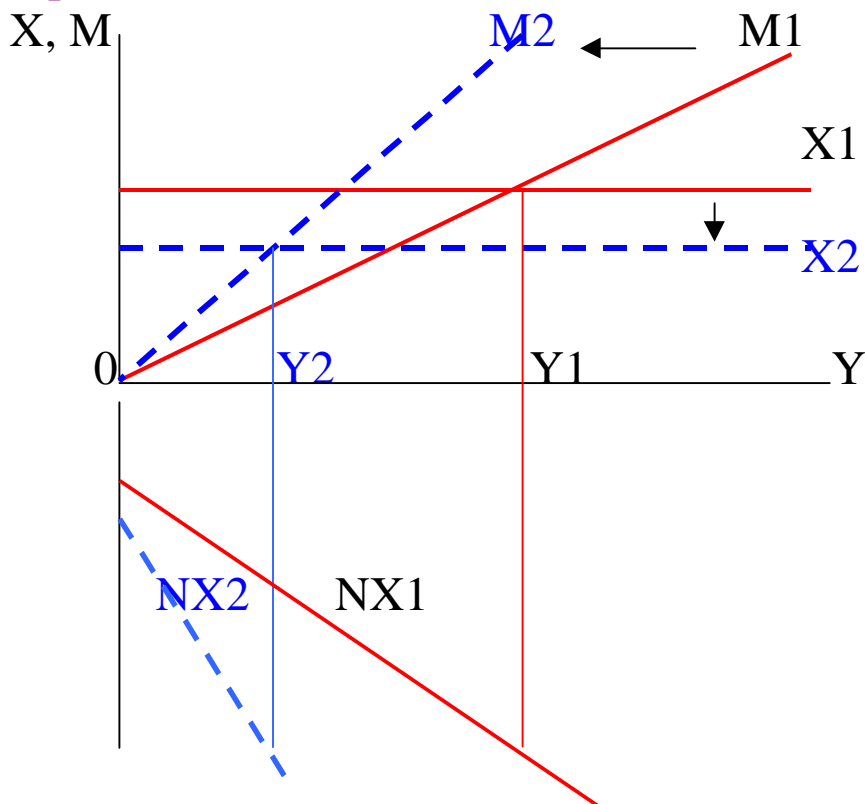
Y2   Y1

III EQUILIBRIUM NATIONAL INCOME

A   Aggregate Expenditure

1. Remember: C = f(Yd), where Yd = Y – T
   Substitute: Yd = Y – T into above equation,
   Therefore, C = f (Y) also

2. ☞ DESIRED AE = f (ACTUAL Y)

3.   **AE = C + I + G + NX**

4. **MPSpend** = slope of AE function = addition inclination
to spend out of an additional dollar of national income
      (Don't confuse with MP**S** = marginal prop. to **save**)

5. Out of an additional dollar of Y,
MPSpend = z = MPC(1- MPT) – MPM = b(1-t)-m

Just Yd

Eg.   If: C=10+0.8**Yd**
I = 25
G=17
NX= 24-0.1**Y**
T=0.1**Y**

Y, not Yd

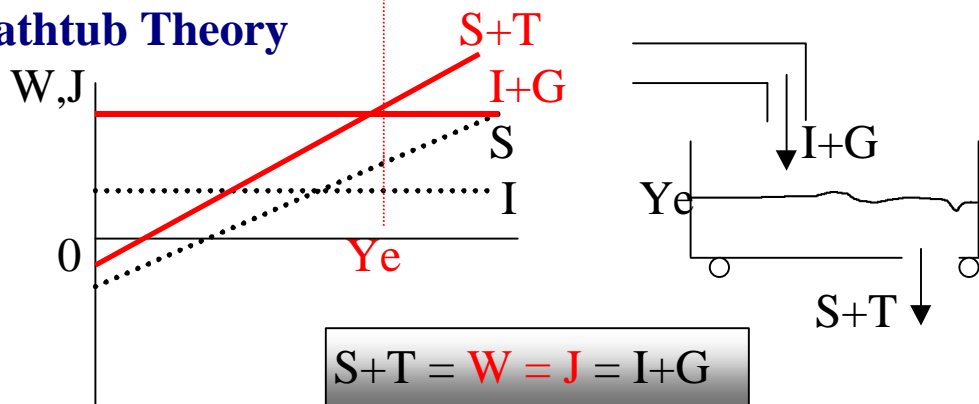If b=0.8, t=0.1, m= 0.1,   then MPSpend = 0.62

SEE APPENDIX FOR ALGEBRA.

B Determining Equilibrium: GOV'D ECONOMY

1. Decision Makers: Household (H), Firm (F), Gov't (G)

2. General Premise: **H** saves some income at Bank; Bank loans some savings to **F** for investments; **G** taxes and spends
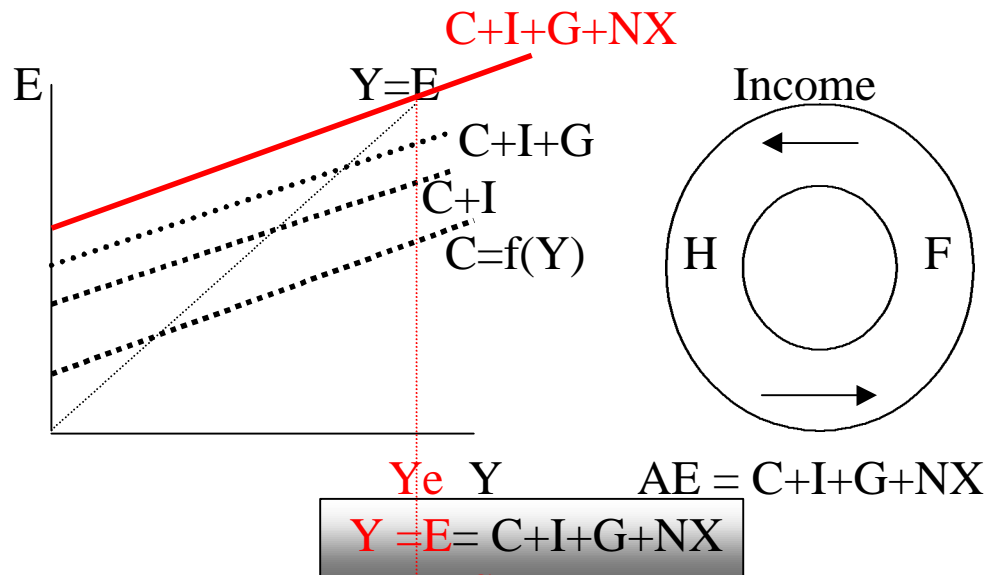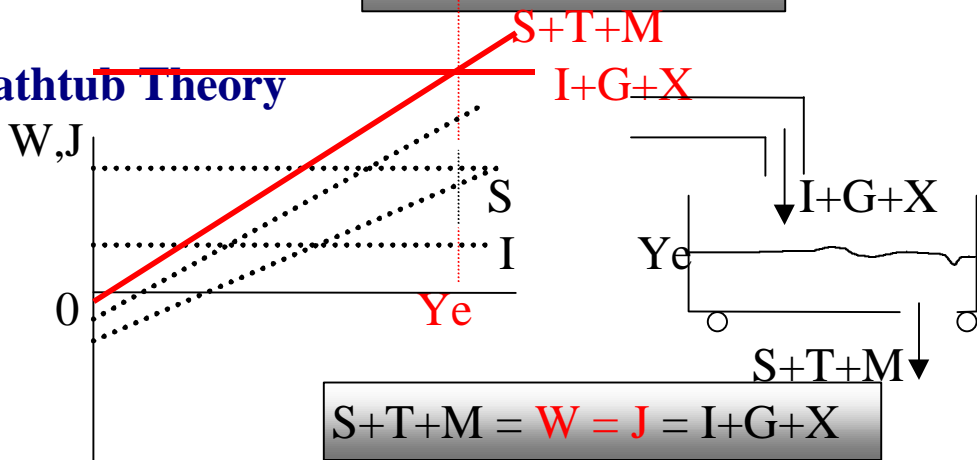
3. **Garden Hose Theory**:

E   Y=E   Income

C+I+G
C+I
C=f(Y)
H   F

Ye   Y   AE = C+I+G

Y =E= C+I+G

4. **Bathtub Theory**

W,J   S+T
     I+G
     S
     I   I+G
0   Ye   Ye

S+T

S+T = W = J = I+G
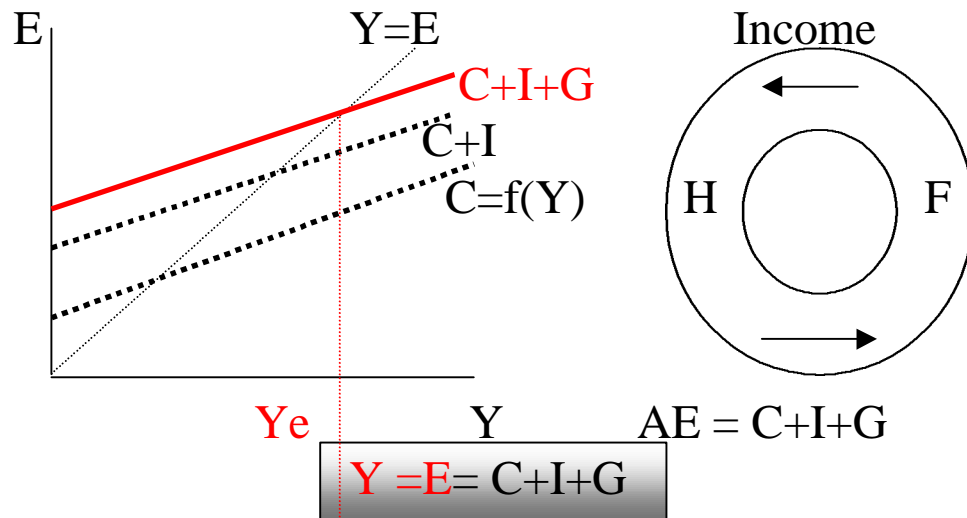
B Determining Equilibrium: OPEN ECONOMY

1. Decision Makers: House(H), Firm (F), Gov't (G), NX

2. General Premise: **H** saves some income at B; B loans some savings to **F** for investments; **G** taxes and spends; **W** - domestic buys M, foreign country buys X

3. Garden Hose Theory:

C+I+G+NX

E   Y=E   Income

C+I+G

C+I

C=f(Y)   H   F

Ye Y   AE = C+I+G+NX

$$Y = E = C+I+G+NX$$

S+T+M

4. Bathtub Theory   I+G+X

W,J

S

I   Ye   I+G+X

0   Ye

S+T+M

$$S+T+M = W = J = I+G+X$$

IV CHANGES IN NATIONAL INCOME

A   The Simple Multiplier

1. Taxes and net exports REDUCE the value of k, the multiplier.

2. Reason: T and NX are directly related to Y, so as Y increases, the **withdrawals** or **leakages** increase from the circular flow

3. Simple Multiplier $= k = 1 / 1 - z$, where $z = $ MPSpend

4. In the Frugal Economy, $z = $ MPC

5. Now, with G and NX, $z = b(1-t) - m$

B   NX

1. NX affected **exogenously** by the affect of **foreign** Y on X.

2. NX affected **endogenously** by the affect of **domestic** Y on M.

3. Because M are subtracted from X to get NX, the marginal propensity to import, m, is subtracted from the MPSpend and the simple multiplier.

V FISCAL POLICY

1. **Fiscal Policy** = Change in G and/or T to affect Ye

2. **Stabilization Policy** = gov't policy to maintain Y at a given level (usually potential GDP)

3. Increase G / decrease T   Increases Ye
   Decrease G/ increase T   Decrease Ye

4. **Balanced Budget Multiplier**
   $\Delta Ye = \Delta G \times (1 + MPC + MPC^2 + \ldots) = \Delta G.k$
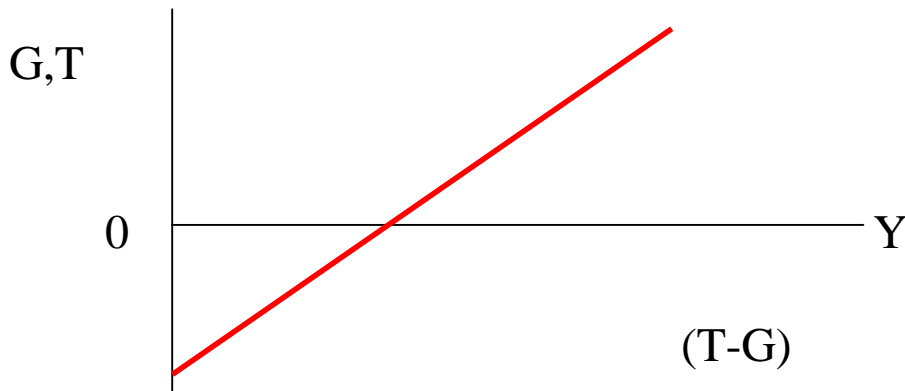 $\Delta Ye = \Delta T \times (\quad MPC + MPC^2 + \ldots) = \Delta T(k-1)$
   Thus, for a balanced budget, $\Delta G = \Delta T$
   $\Delta Ybb = \Delta G = \Delta T$

BUDGET FN v. ADDITION TO AE

1. **Budget Function** = (T - G)

$$= (\$in - \$ out) \text{ TO THE GOV'T}$$

G,T

0 ──────────────────────────── Y

(T-G)

* Remember, its $ in and out of the GOVERNMENT

2. **Additions to AE** = (G - T) *switched*

$$= (\$in - \$ out) \text{ to CIRCULAR FLW}$$

G,T   (G-T)

0 ──────────────────────────── Y
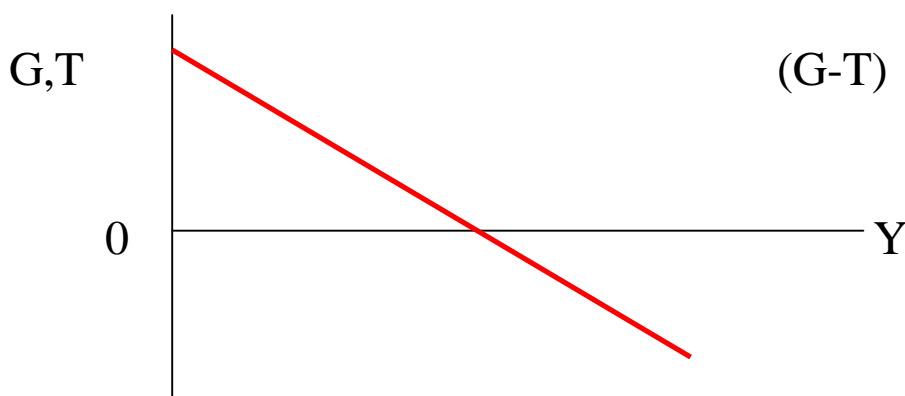
* Remember, its $ in and out of the CIRCULAR FLOW

PARALLEL: (G-T) AND (X-M)

(G-T) Governed Economy   (X-M) Open Economy

Withdrawals
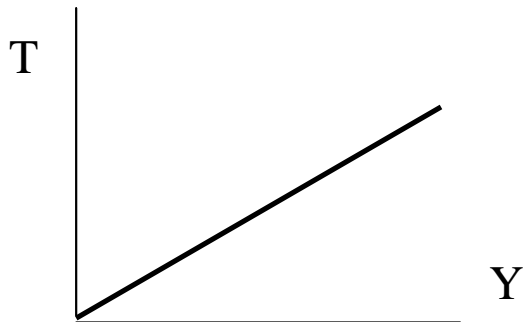
Taxes   Imports
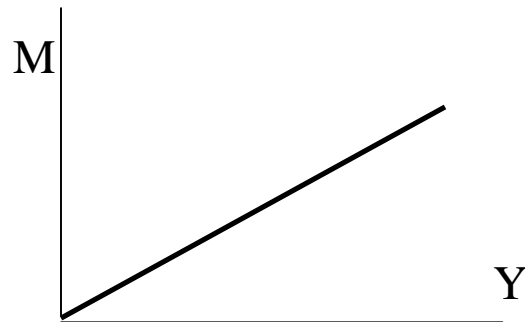
Injections
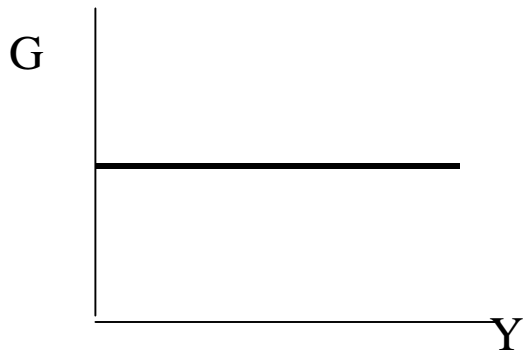
G Expenditures   Exports

Net Addition to AE

(G-T)   (X-M)

$in - $out
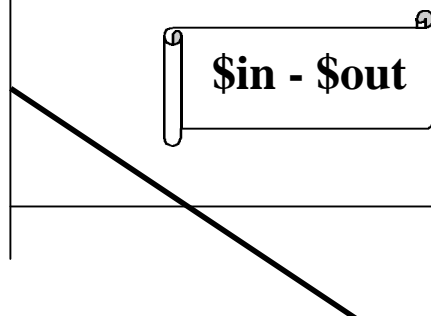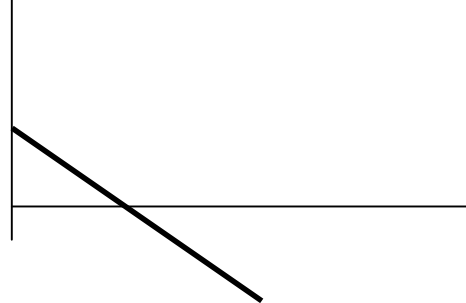
Algebra: Concordance of W=J and Y=E

1. Frugal Economy

$Y = C + I$ (condition) $Y = C + S$ (defn) equating, $S = I$
or
$Y = (Y\text{-}S) + I = Y + (I \text{-} S)$ (J - W)

2. Governed Economy

$Y = C + I + G$ (condition) $Y = C + S + T$ (defn)
equating $S + T = I + G$
or
$Y = (Y \text{-} T \text{-} S) + I + G = Y + (I \text{-} S) + (G \text{-} T)$ (J - W)

3. Open Economy

$Y = C + I + G + (X \text{-} M)$ (condition) $Y = C + S + T$ (defn)
equating $S + T + M = I + G + X$
or
$Y = (Y \text{-} T \text{-} S) + I + G + (X\text{-}M) = Y + (I \text{-} S) + (G \text{-} T) +$
$(X\text{-}M)$ (J - W)

Summary

1. All injections are autonomous

I
|
|_____
|_____ Y

G
|
|_____
|_____ Y

X
|
|_____
|_____ Y

J
|
|_____
|_____ Y
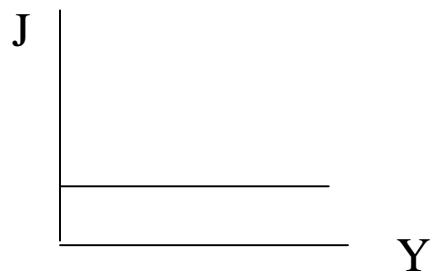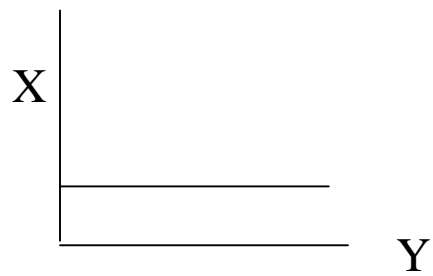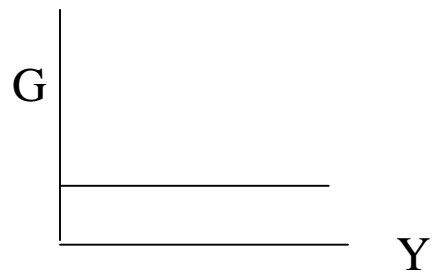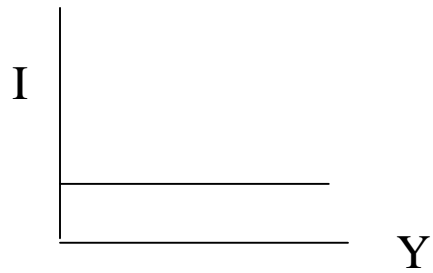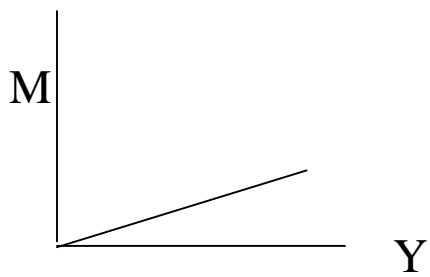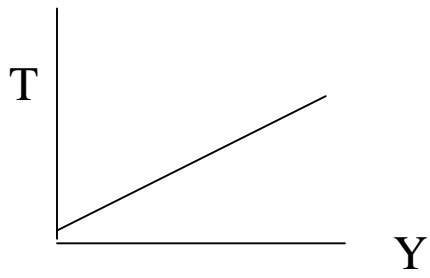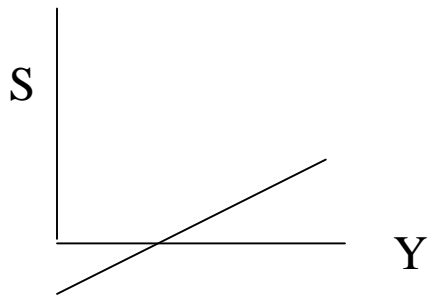
$$J = I + G + X$$

2. All withdrawals are a fn of Y

S

Y

T

Y

M

Y

W

Y
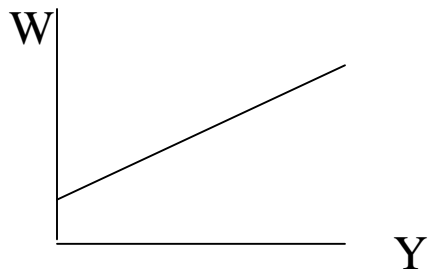
$$W = S + T + M$$

GANBATTE

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