Secular Stagnation, Simon Kuznets, and the Consumption Puzzle

During World War II, on the basis of Keynes' consumption function, economists predicted that the economy would experience what they called *secular stagnation*-- a long depression of infinite duration-- unless fiscal policy was used to stimulate aggregate demand. It turned out that the end of the war did not throw the U.S. into another depression, but it did suggest that Keynes' conjecture that the average propensity to consume would fall as income rose appeared not to hold.

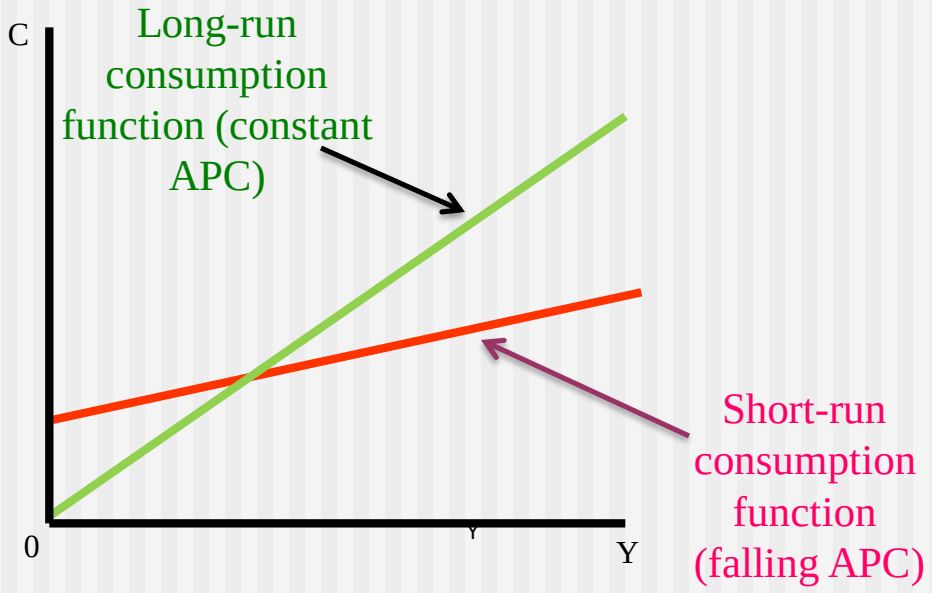
Simon Kuznets constructed new aggregate data on consumption and investment dating back to 1869 and whose work would later earn a Nobel Prize. He discovered that the ratio of consumption to income was stable over time, despite large increases in income; again, Keynes' conjecture was called into question.

- This brings us to the puzzle…

Short-run *versus* Long-run Consumption Function

The Consumption Puzzle

- **Consumption Puzzle:** The failure of the secular-stagnation hypothesis and the findings of Kuznets both indicated that the average propensity to consume is fairly constant over time. This presented a puzzle: why did Keynes' conjectures hold up well in the studies of household data and in the studies of short time-series, but fail when long time series were examined?



Studies of household data and short time-series found a relationship between consumption and income similar to the one Keynes conjectured--this is called the *Keynes or short-run consumption function*. But, studies using long time-series found that the APC did not vary systematically with income--this relationship is called the *Kuznets or long-run consumption function.*

Empirical Evidences

Using statistical techniques and annual data for a short period, **1929-1941**, Keynesian economists obtained the following type of estimate for the consumption function:

$$\mathbf{C = 26.5 + 0.75\ Y_d}$$

Ca = $26.5 billion, This confirms the Keynesian view that the APC exceeded the MPC and APC declines as income rises.

Example: at Y_d =$150 billion, APC = 0.927

Y_d = $200 billion, APC = 0.883

The above equation seemed to predict levels of consumer expenditure during that period reasonably well.

Simon Kuznets' Consumption Data

Kuznets, Simon. *Uses of National Income in Peace and War*, Occasional Paper 6. NY: NBER, 1942.

- Time series estimates of consumption and national income
- Overlapping decades 1879-1938, 5 year steps
- Each estimate is a decade average

Kuznets, Simon. *National Product Since 1869*. NY: NBER, 1946.

Extended data backward to 1869.

Kuznets' Study of 1946 (National income (Y) and Consumption in billions of dollars)

Years	*Y*	*C*	*C/Y*
1869-78	9.3	8.1	0.87
1874-83	13.6	11.6	0.85
1879-88	17.9	15.3	0.85
1884-93	21.0	17.7	0.84
1889-98	24.2	20.2	0.83
1894-1903	29.8	25.4	0.85
1899-1908	37.3	32.3	0.87
1904-13	45.0	39.1	0.87
1909-18	50.6	44.0	0.87
1914-23	57.3	50.7	0.88
1919-28	69.0	62.0	0.90
1924-33	73.3	68.9	0.94
1929-38	72.0	71.0	0.99

Absolute Income Hypothesis

Keynesian Short-Run Consumption Function

The starting point for Keynes' theory of consumer behavior is the following concept:

> "The fundamental psychological law, upon which we are entitled to depend with great confidence both *a priori* from our knowledge of human nature and from the detailed facts of experience, is that men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income."
>
> John M. Keynes, *The General Theory of Employment, Interest and Money (1936)*

This psychological law translates into the Keynesian consumption function:

$C = C_a + c*Y_d$ Where $C_a > 0,\ 0 < c < 1$ [Keynes' Psychological Law of Consumption]

c = Marginal Propensity to consume (MPC) $= \Delta C/\Delta Y_d$

APC = Average Propensity to consume $= C/Y_d$

$APC = C_a/Y_d + c$

This implies *APC is greater than MPC* and follows that the "APC declines as the level of income increases".

This version of the consumption function has been called the ***Absolute Income Hypothesis.***

Relative Income Theory of Consumption

by American Economist J. S. Duesenberry

- According to Duesenberry's Relative Income Hypothesis, "consumption of an individual is not the function of his absolute income but of his relative position in the income distribution in a society."

- This suggests that as income of households, say household A and household B, increases consumtion function curve shifts above so that APC of households remains constant.

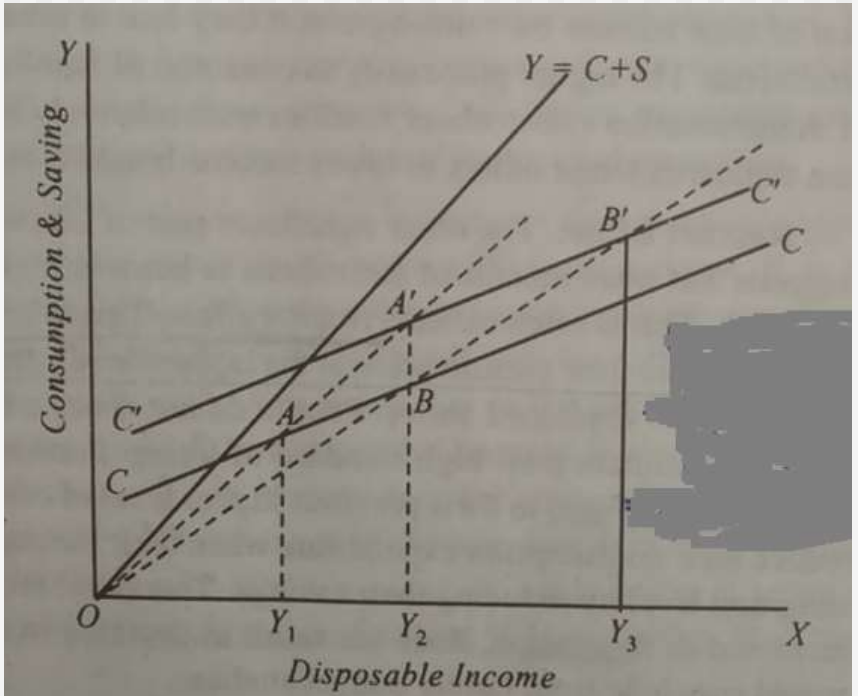


Fig. Duesenberry's Relative Income Theory of Consumption

Relative Income Theory of Consumption

by American Economist J. S. Duesenberry

- Demonstration Effect or Duesenberry Effect: Relative Income Hypothesis suggests that individual or household try to imitate or copy the consumption levels of their neighbours or other families in a particular community. This is called Demonstration Effect or Duesenberry Effect.

- Ratchet Effect or Duesenberry's Habit Persistence Theory: Relative Income Hypothesis also suggests that when income of individuals or households falls, their consumption expenditure does not fall much. This is often called a ratchet effect.

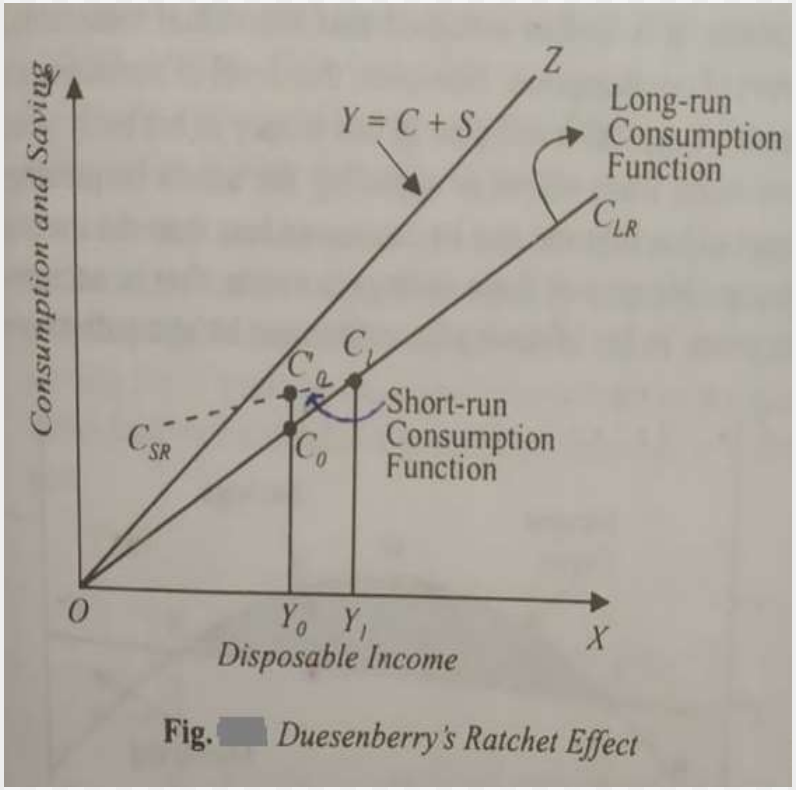


Fig. Duesenberry's Ratchet Effect

The Life Cycle Theory of Consumption

Developed by Franco Modigliani, Albert Ando and Richard Brumberg (1954) based on the ideas in the Fisher model. According to life-cycle hypothesis, "the consumption in any period is not the function of current income of that period but of the whole lifetime expected income"

" The point of departure of the life cycle model is the hypothesis that consumption and saving decisions of households at each point of time reflect a more or less conscious attempt at achieving the preferred distribution of consumption over the life cycle, subject to the constraint imposed by the resources accruing to the household over its lifetime." Modigliani

- The basic notion is that consumption spending will be smooth in the face of an erratic stream of income.
- Maintain current consumption, pay-off debt from youth years.
- Maintain current consumption, build up reserves.

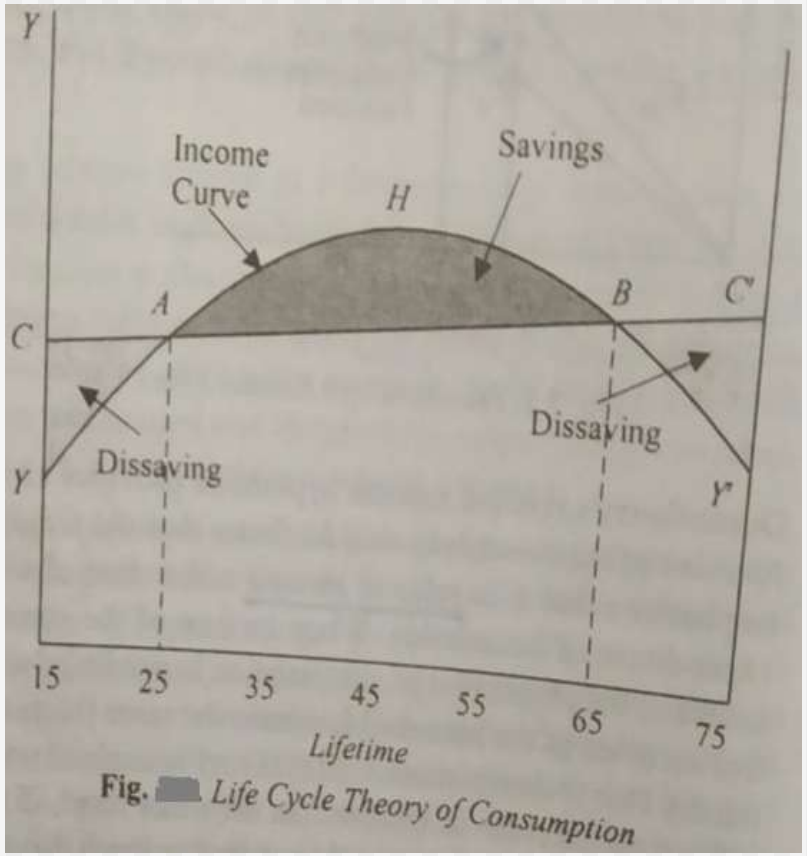


Fig. Life Cycle Theory of Consumption

The Permanent Income Hypothesis

- Friedman postulates that consumption is proportional to permanent income:

$$C_t = kY_t^p$$

k = factor of proportionality (k>0)

- Friedman does not expect the above consumption function to predict consumption perfectly. Because measured income (Y) contains a random element called transitory income:

$$Y = Y^t + Y^p$$

Investment Spending

- **Planned investment spending** is the investment spending that businesses plan to undertake during a given period of time.

- It depends **negatively** on:
  - interest rate
  - existing production capacity

  and **positively** on:
  - expected future real GDP.

Actual Investment Spending

- **Actual investment spending** is the sum of planned investment spending and unplanned inventory investment.

$$I = I_{Unplanned} + I_{Planned}$$

Planned Aggregate Spending and GDP

$$GDP = C + I$$

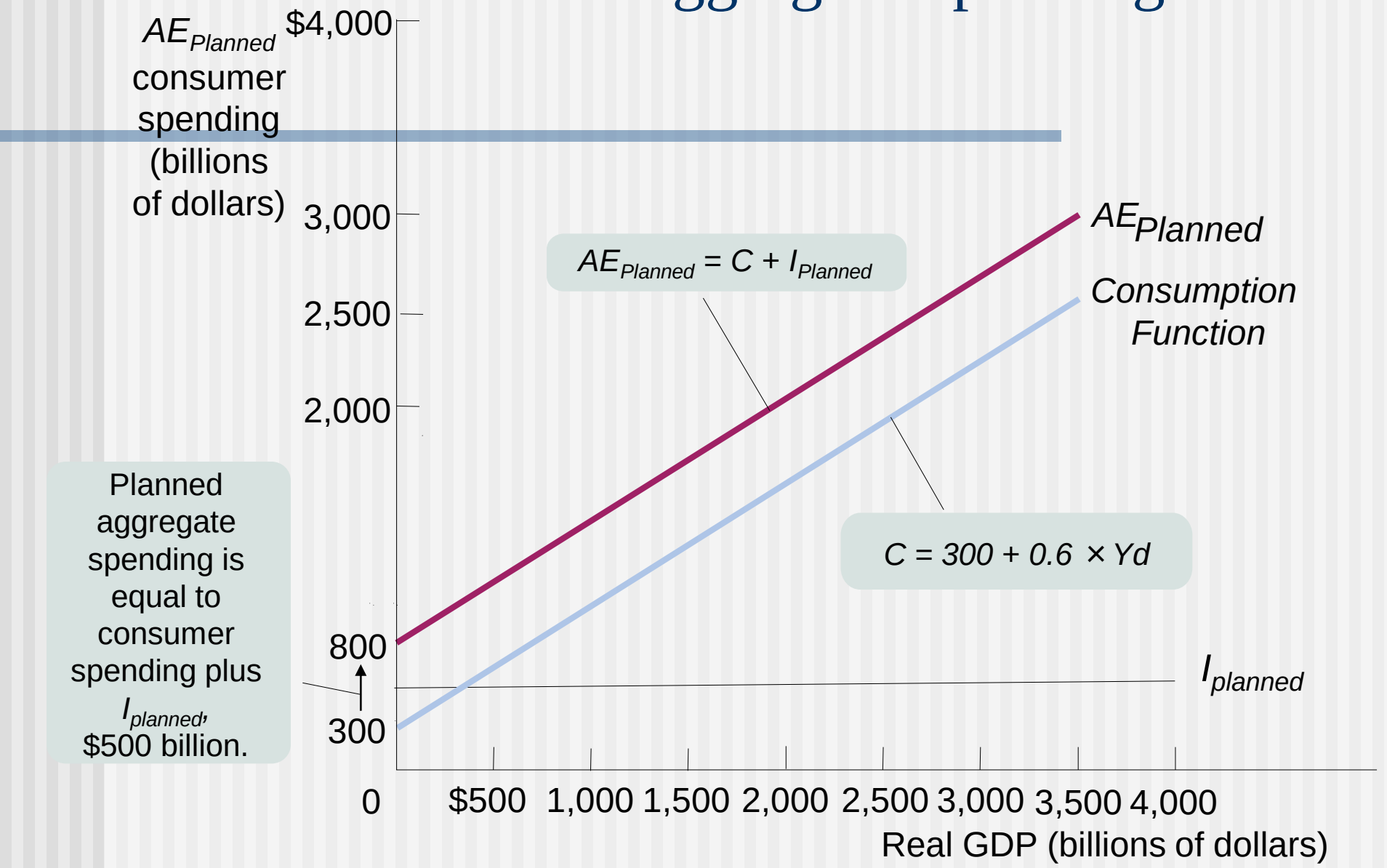
$$Y_d = GDP$$

$$C = C_a + c.Y_d$$

Planned aggregate expenditure is the total amount of planned spending in the economy.

$$AE_{\text{Planned}} = C + I_{\text{planned}}$$

Planned Aggregate Spending



The Income–Expenditure Model

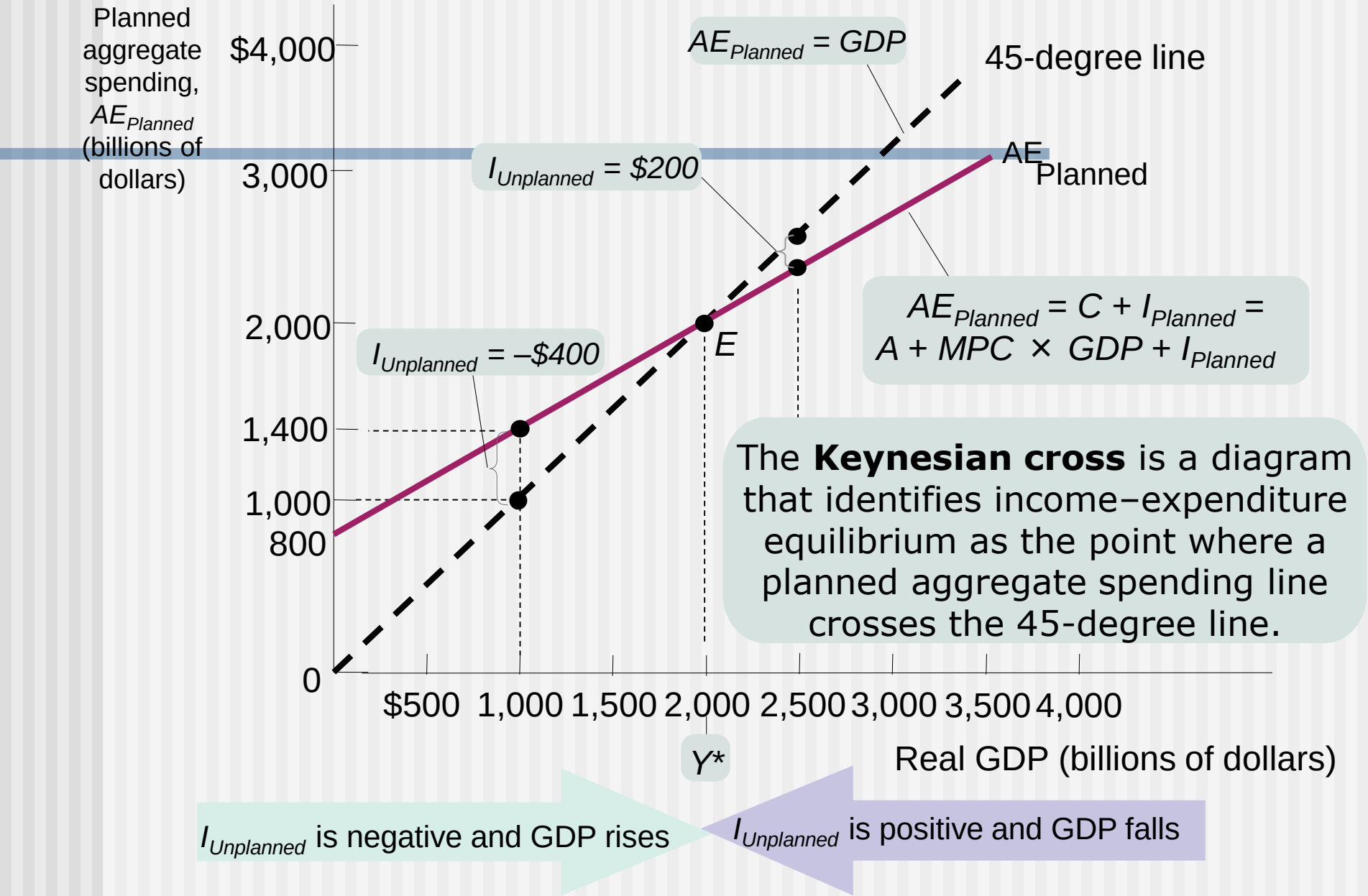
Income–Expenditure Equilibrium

- The economy is in **income–expenditure equilibrium** when aggregate output, measured by real GDP, is equal to planned aggregate spending.

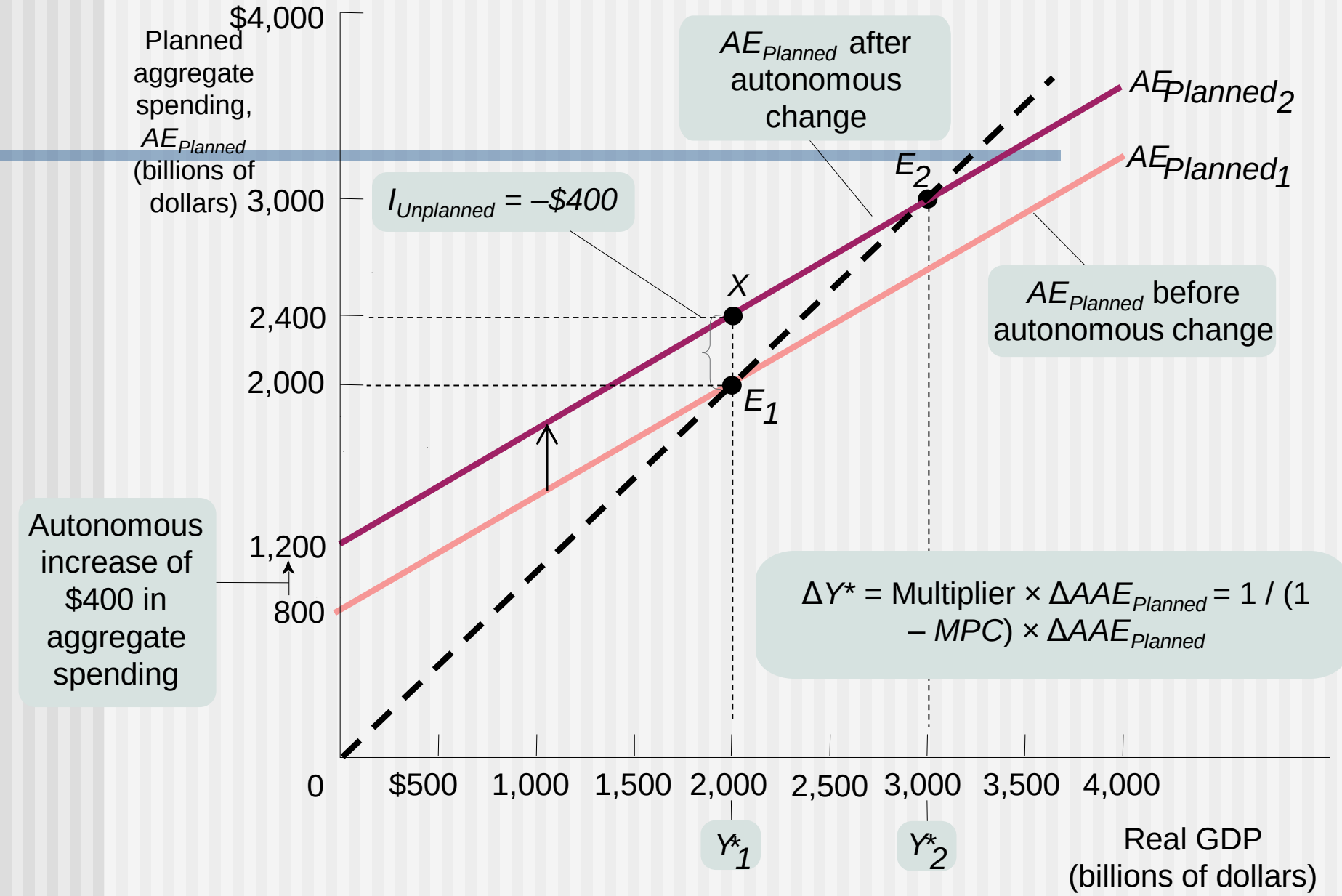
- **Income–expenditure equilibrium GDP** is the level of real GDP at which real GDP equals planned aggregate spending.

$$\begin{aligned} GDP &= C + I \\ &= C + I_{Planned} + I_{Unplanned} \\ &= AE_{Planned} + I_{Unplanned} \end{aligned}$$

Income–Expenditure Equilibrium



The Multiplier



Fiscal Policy
The Government Budget and Total Spending

$$GDP = C + I + G + X - M$$

- **Fiscal policy** is the use of taxes, government transfers, or government purchases of goods and services to shift the aggregate demand curve. But many economists caution that a very active fiscal policy may in fact make the economy less stable due to time lags in policy formulation and implementation.

Expansionary *versus* Contractionary Fiscal Policy

Income-Expenditure Model

- Fiscal policy has a **Multiplier effect** on the economy, the size of which depends upon the fiscal policy. Except in the case of lump-sum taxes, taxes reduce the size of the multiplier. **Expansionary fiscal policy** leads to an increase in real GDP, while **Contractionary fiscal policy** leads to a reduction in real GDP. Because part of any change in taxes or transfers is absorbed by savings in the first round of spending, changes in government purchases of goods and services have a more powerful effect on the economy than equal-size changes in taxes or transfers.

- **Rules** governing taxes—with the exception of **lump-sum taxes**—and some transfers act as **automatic stabilizers,** reducing the size of the multiplier and automatically reducing the **size** of **fluctuations** in the **business cycle**. In contrast, **discretionary fiscal policy** arises from deliberate actions by policy makers rather than from the business cycle.

- Some of the fluctuations in the budget balance are due to the effects of the business cycle. In order to separate the effects of the business cycle from the effects of discretionary fiscal policy, governments estimate the **cyclically adjusted budget balance,** an estimate of the budget balance if the economy were at potential output.

Fiscal Policy to Cure Recession

Increase in Government Expenditure to Cure Recession

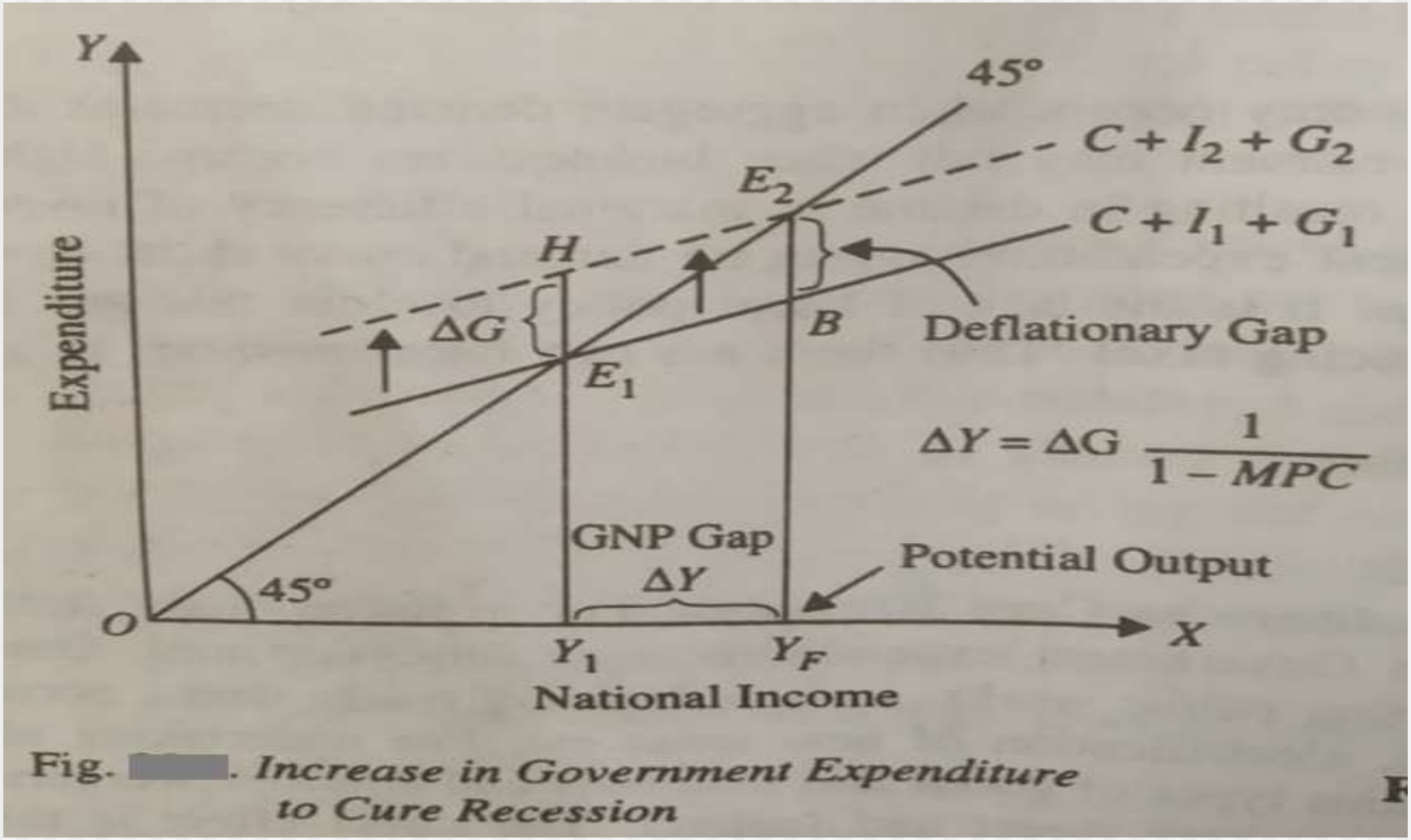


Fig. [redacted]. *Increase in Government Expenditure to Cure Recession*

Fiscal Policy to Control Inflation

Raising Taxes or Decrease in Government Expenditure

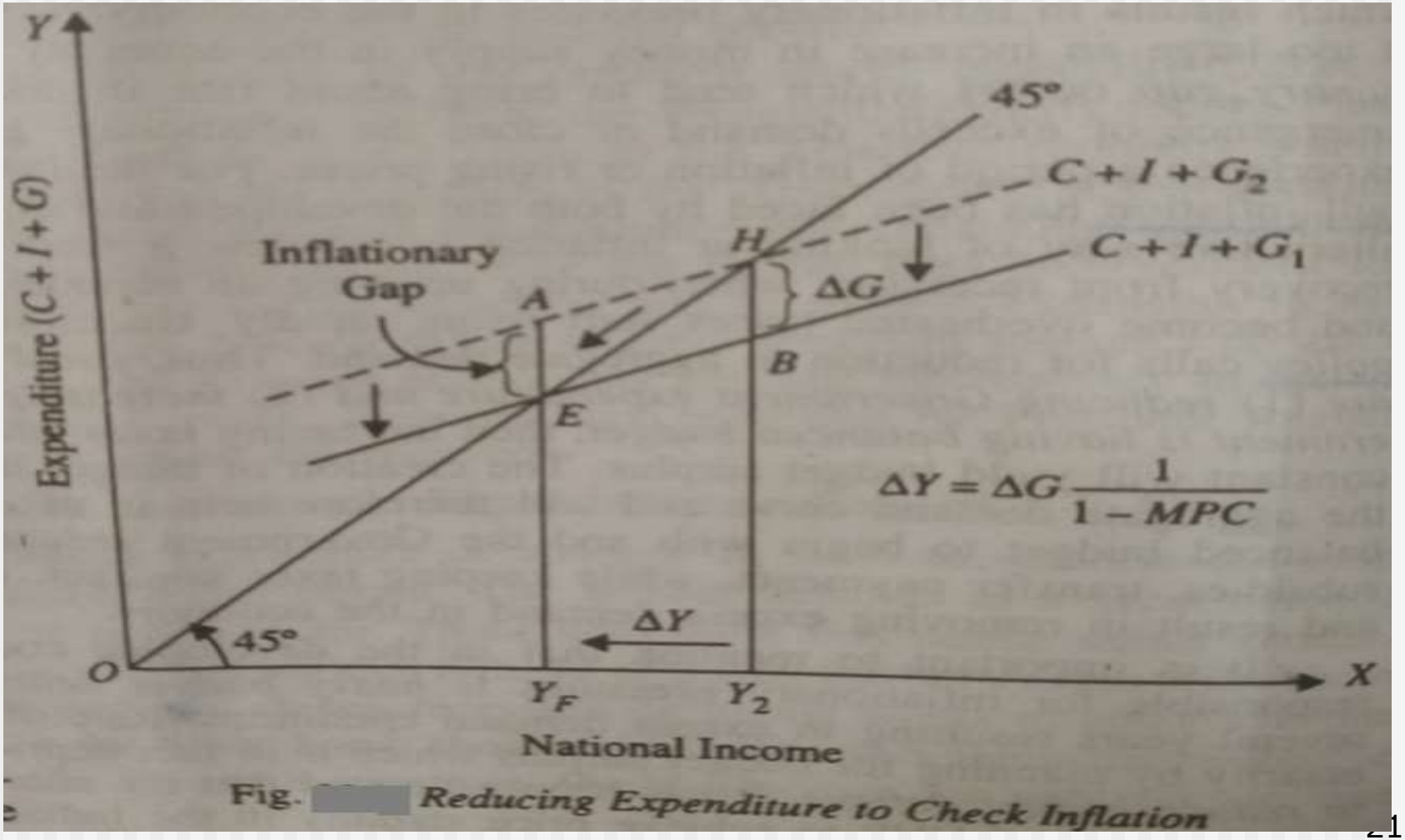


Fig. Reducing Expenditure to Check Inflation