

Economic Growth and Welfare Systems

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Kaldor

Kaldor

- ▶ **1956: Alternative theories of distribution**
- ▶ **Readings**
 - **1957/62: A (new) model of economic growth**
 - **1962: Capital Accumulation and economic growth**

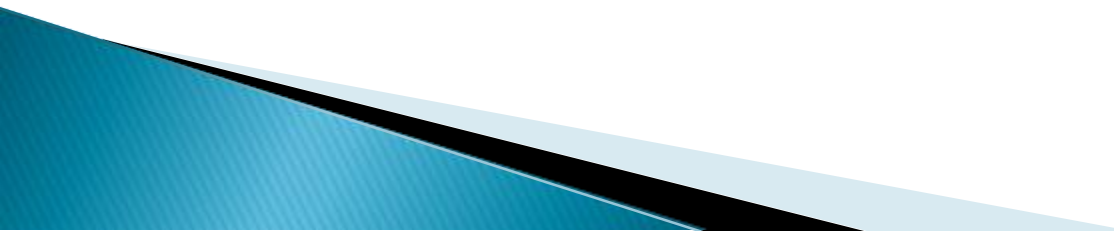
6 Stylized facts

- ▶ $Y/L \uparrow$ ($Y/L =$ labour productivity)
- ▶ $K/L \uparrow$
- ▶ P/K constant ($P/K = r$, the rate of profit)
- ▶ K/Y constant
- ▶ W/Y constant ($W/Y =$ wage share in income)
- ▶ Non convergence of income level and rates of growth among countries

(1) Kaldor contribution to growth, innovation and technical progress function (1957/62)

(2) Kaldor model of growth and income distribution (1956)

Hypotheses:

- ▶ Only 2 classes : workers and capitalists
 - ▶ Income shared between total wage (W) and total profit (P)
 - ▶ $Y = W + P$
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Kaldor model

$$S = S_w + S_c$$

$$S_w = s_w W$$

$$S_c = s_c P$$

$$I = S$$

$$I = s_w W + s_c P$$

$$\text{since } W = Y - P \rightarrow I = s_w(Y - P) + s_c P$$

$$I = s_w Y + P(s_c - s_w)$$

$$P(s_c - s_w) = I - s_w Y$$

Dividing by $Y \rightarrow \frac{P}{Y} = \frac{I}{Y} \cdot \frac{1}{s_c - s_w} - \frac{s_w}{s_c - s_w} \quad (1)$

multiplying by $\frac{Y}{K} \rightarrow \frac{P}{K} = \frac{1}{s_c - s_w} \cdot \frac{I}{K} - \frac{s_w}{s_c - s_w} \cdot \frac{Y}{K} \quad (2)$

$w = \text{subsistence } s_w = 0 \text{ and from (1)} \rightarrow \frac{P}{Y} = \frac{1}{s_c} \cdot \frac{I}{Y}$

from (2) $\rightarrow \frac{P}{K} = \frac{1}{s_c} \cdot \frac{I}{K}$

if $s_c = 1$ (capitalists save all their income) \rightarrow

From 1 \rightarrow
share of Profit

$$\frac{P}{Y} = \frac{I}{Y}$$

From 2 \rightarrow

$$\frac{P}{K} = \frac{I}{K} \quad (\text{rate of profit})$$

Pasinetti shows that even if workers save more than 0, the results of Kalrdor do not change

Combining Kaldor and Harrod

$$\frac{s}{v} = g_n \quad \text{and} \quad s = \frac{S}{Y} \rightarrow g_n = \frac{S}{Y} \cdot \frac{1}{v}$$

$$\frac{S}{Y} = g_n \cdot v$$

$$\frac{s_c P}{Y} = g_n \cdot v$$

$$(3) \quad \frac{P}{Y} = \frac{1}{s_c} g_n \cdot v$$

The Cambridge equation

multiplyng (3) by $\frac{Y}{K} \rightarrow \frac{P}{Y} \cdot \frac{Y}{K} = \frac{1}{s_c} g_n \cdot v \frac{Y}{K}$

knowing that $v = \frac{K}{Y}$

$\rightarrow \frac{P}{K} = \frac{1}{s_c} g_n$

(Cambridge equation)

The Golden rule of accumulation

Finally if capitalists save and invest all what they get (P)

with $C=0$ and $S_c=1 \rightarrow$

$$\frac{P}{K} = \delta n$$

The Golden rule of accumulation

Difference between Ricardo and Kaldor (1)

- ▶ In Ricardo (analysed by Kaldor) in order to keep full employment, with fixed wage (natural consumption in Ricardo) all the surplus should go to capitalists, who would therefore get all the advantages of technical progress:

$$\bar{w}, P \uparrow, r \uparrow, \frac{P}{Y} \uparrow$$

Difference between Ricardo and Kaldor (2)

- ▶ In Kaldor with constant

$$s_c, v, g_n$$

full employment would be maintained by a constant r and a constant income distribution between wages and profits

- ▶ Hence, after that r makes sure capital accumulation and consumption for capitalists, technical progress has to go to workers
- ▶ (see the situation today, with $w \downarrow wL/Y \downarrow \dots$)

The mechanism of re-equilibrium in Kaldor (1)

- ▶ Finally, as regards the Harroddian instability, Kaldor proposes to overcome it through changes in saving propensity s , obtained through changes in income distribution.
- ▶ So, IF:

$$g_n > g_w = \frac{s}{v}$$

$$g > g_w \rightarrow \text{inflation}$$

$$p \uparrow (p \uparrow > w \uparrow) \Rightarrow r \uparrow$$

$$\Rightarrow s \uparrow$$

$$\frac{s}{v} \uparrow \Rightarrow g_w \uparrow = g_n$$

The mechanism of re-equilibrium in Kaldor (2)

IF, on the contrary

$$g_n < g_w = \frac{S}{v}$$

if unemployment $\rightarrow U \downarrow$ and $\uparrow w$

after \rightarrow Full Employment \rightarrow depression

because:

$g = g_n < g_w \rightarrow$ Supply $>$ Demand \rightarrow Excess Productive Capacity

$$p \downarrow \Rightarrow r \downarrow$$

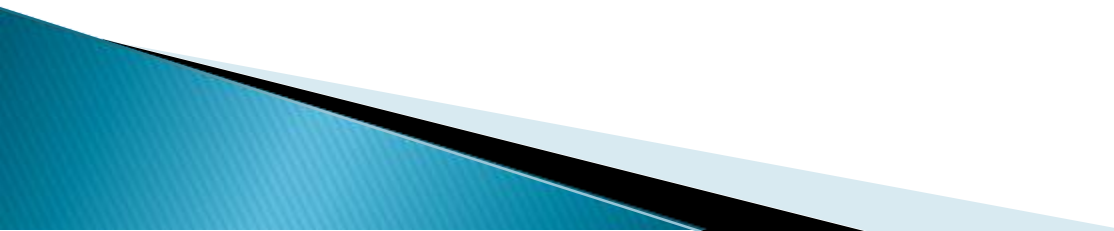
$$\Rightarrow S \downarrow$$

$$\frac{S}{v} \downarrow \Rightarrow g_w \downarrow = g_n$$

Problems and critics

- ▶ 1. Remain in Kaldor problem linked to the assumption that Capitalist save more than workers (which however seem realistic although not $S_c=1$ and not $S_w=0$)
- ▶ 2. The excess of Productive Capacity not necessarily brings about a reduction of profits. If there is Monopoly/Oligopoly \rightarrow prices do not decline or wages may fall more than prices \rightarrow so profits do not shrink. If there is lack of Productive Capacity $\rightarrow p \uparrow$, but not necessarily more than w (as required by Kaldor in order to cause $\uparrow r$ and $\uparrow S$)

Kaldor pioneer

- ▶ Innovation
 - ▶ Technical progress
 - ▶ Investment function and Innovation
 - ▶ Productivity and aggregate demand (Smith effect)
 - ▶ Wage-led model of growth
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Economic growth and effective demand

Kaldor view
(and Classicals and Post–Keynesians)

Effective demand and economic growth

- ▶ Eff. Demand as the driver of economic growth in long term
- ▶ Kaldor ... Keynes, Sraffa, Kaleski, Robinson, Garegnani → Classical and Post-Keynesians

$$\dot{Y} = \dot{AD}$$

- I, C
- Export
- Public Expenditure
- Private Debt

Okun and Kaldor laws for labour productivity growth π

- ▶ From the definition:

$$\dot{Y} \cong \dot{L} + \dot{\pi}$$

- ▶ **Short run:** Rate of growth of labour productivity π depends on GDP growth Y (Okun Law)
- ▶ **Long run:** Rate of growth of labour productivity π depends on GDP growth Y (Kaldor Law)

Employment growth

Given that

$$\dot{Y} \cong \dot{L} + \dot{\pi} \quad \text{and} \quad \dot{Y} = \dot{AD}$$

Employment growth
depends on:

$$\dot{L} \cong \dot{AD} - \dot{\pi}$$

growth of AD depends on I, C, Public Expe...
and growth of Y/L depends on AD (+ tech. progress)

Capital accumulation, innovation and technical progress

▶ $+K \rightarrow +\text{innovation}$

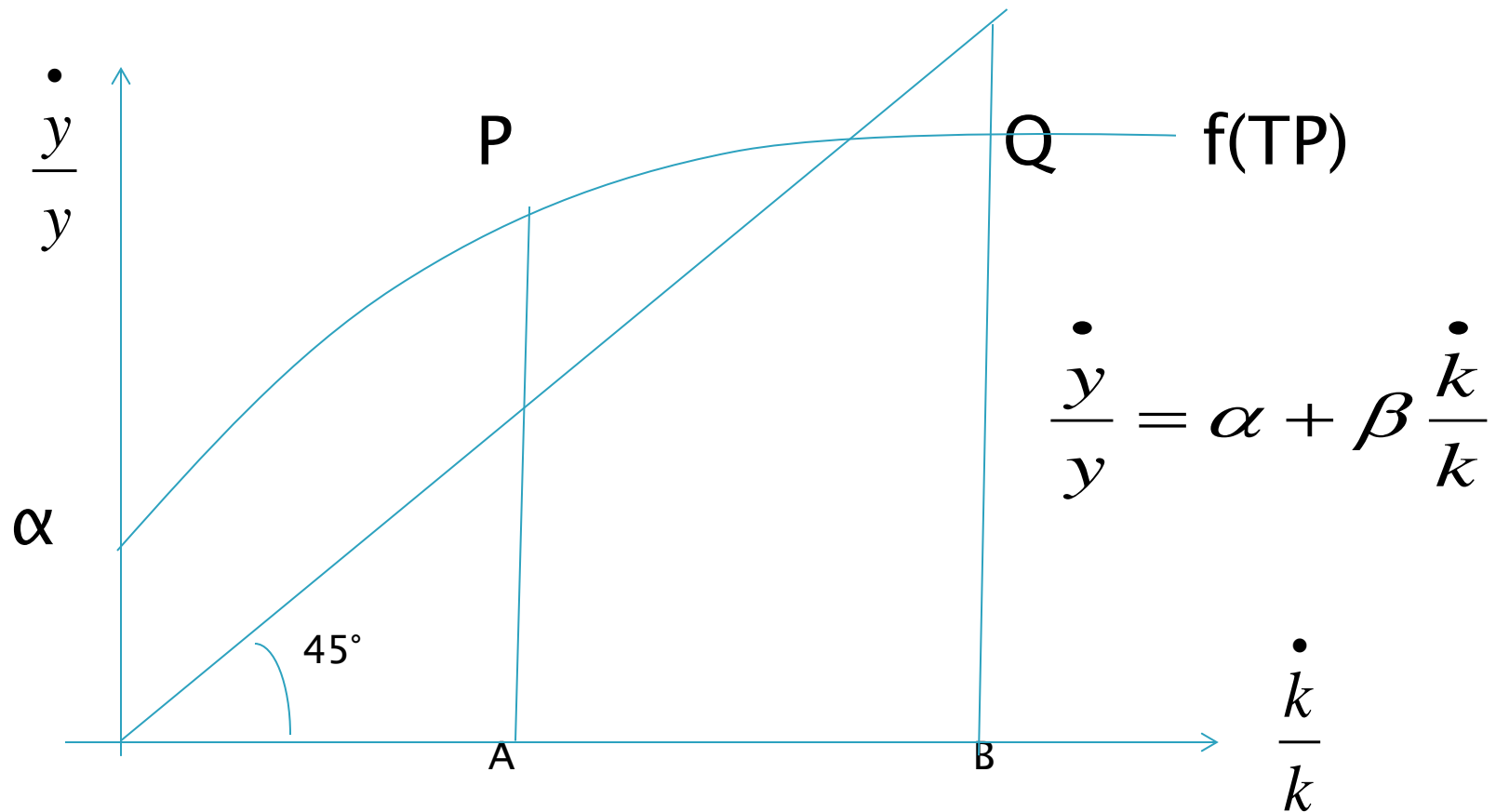
⇕ interaction

▶ $+\text{innovation} \rightarrow +K$

▶ The rate at which an economy will absorb new innovation is limited by capital accumulation $+K$

▶ More capital accumulation requires new ideas and more innovation

Function of technical progress f(TP) and economic growth (g)



In A $\Delta Y > \Delta K \rightarrow K/L \downarrow \quad v \downarrow \quad s/v \uparrow \quad g \uparrow$
 In B $\Delta K > \Delta Y \rightarrow K/L \uparrow \quad v \uparrow \quad s/v \downarrow \quad g \downarrow$

Capital and ideas relation

- ▶ K/L depends on the relation between innovation and capital , as the new ideas are absorbed through new capital investments, and as new capital investment give birth to new ideas