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DISTRIBUTION AND GROWTH AFTER KEYNES

A Post-Keynesian Guide

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CHAPTER 5

‘POST-KEYNESIAN DISTRIBUTION AND

GROWTH THEORIES II:

KALECKI AND STEINDL’

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5.1 INTRODUCTION



Kalecki:

Theory of effective demand based on Marx's Schemes of Reproduction

Theory of prices:

- demand determined prices in primary sector
- cost determined prices in industrial sector (oligopolistic or monopolistic competition)
 - constant marginal and average variable costs
 - mark-up pricing in oligopolistic markets
 - underutilisation of productive capacities
 - changes in demand trigger changes in output and not in prices



No long-run tendency towards pre-determined full employment growth path:

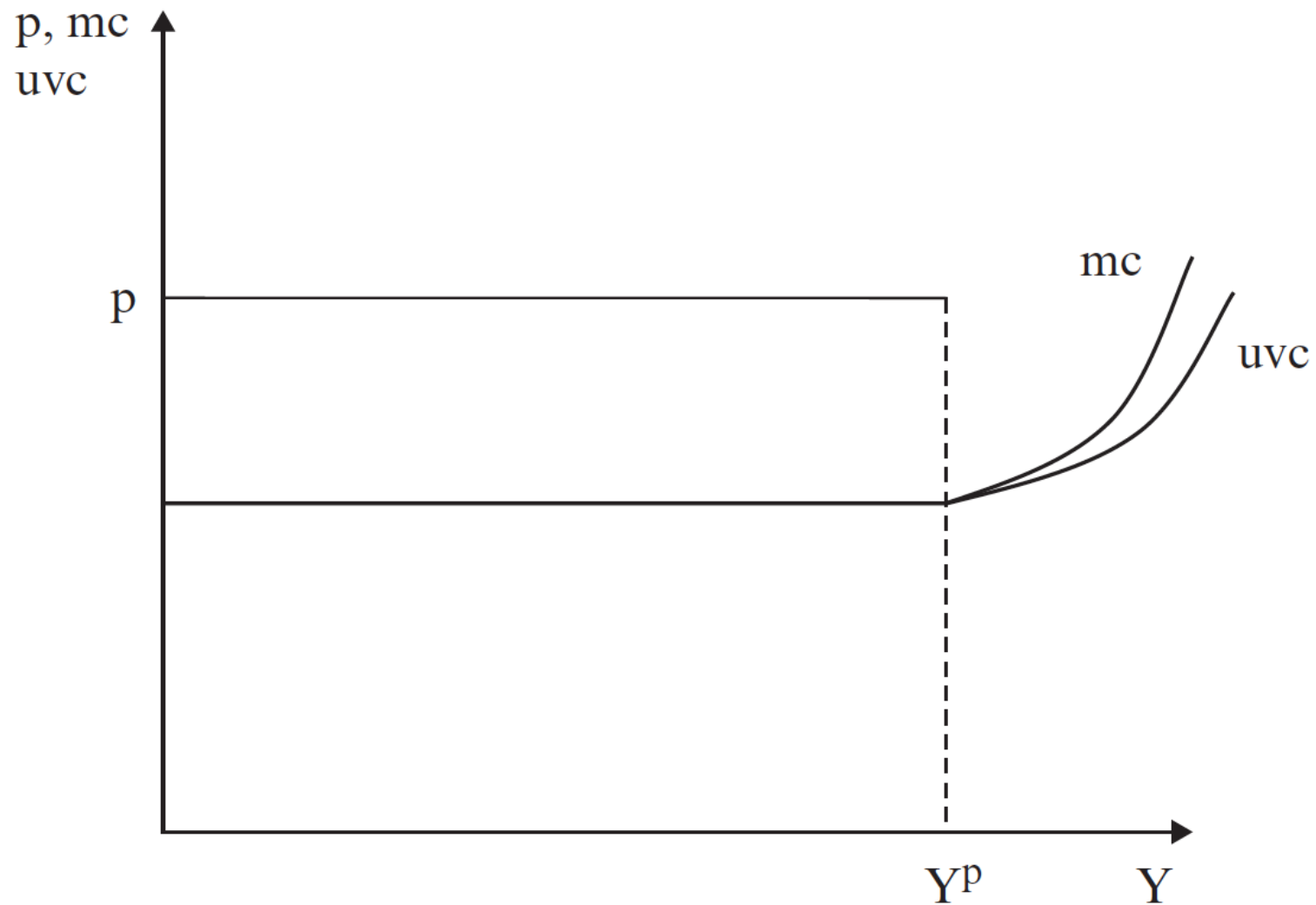
“In fact, the long-run trend is but a slowly changing component of a chain of short-period situations; it has no independent entity, and the two basic relations mentioned above [first, the effect of investment on aggregate demand, profits and national income, and second, the effect of the level and the rate of change of economic activity on investment decisions, E.H.] should be formulated in such a way as to yield the trend cum business-cycle phenomenon.”

(Kalecki 1971, p. 165)



5.2 KALECKI'S PRICING AND DISTRIBUTION THEORY

Figure 5.1 Output, costs and prices at the firm level





Components of prices of firm i (p_i):

$$(5.1) \quad p_i = \left(\frac{W}{Y}\right)_i + \left(\frac{M}{Y}\right)_i + \left(\frac{\Pi}{Y}\right)_i$$

Y : output, W : wages, M : material costs, Π : gross profits

Mark-up (m) pricing of firm i :

$$(5.2) \quad p_i = (1 + m_i)(wa_i + p_m \mu_i), \quad m_i > 0$$

p_m : price of raw materials, w : nominal wage, μ : raw materials per unit of final output, a : labour-output ratio

Average price in industry j (p_j):

$$(5.3) \quad p_j = (1 + m_j)(wa_j + p_m \mu_j), \quad m_j > 0$$



Relationship between unit raw material costs and unit labour costs (z_j)

$$(5.4) \quad z_j = \left(\frac{p_m \mu_j}{wa_j} \right)$$

Price equation for each industry:

$$(5.5) \quad p_j = (1 + m_j) \left[wa_j \left(1 + \frac{p_m \mu_j}{wa_j} \right) \right] = (1 + m_j) [wa_j (1 + z_j)]$$

Unit gross profits $(\Pi/Y)_j$, including overheads, in each industry:

$$(5.6) \quad \left(\frac{\Pi}{Y} \right)_j = m(wa_j + p_m \mu_j) = mwa_j (1 + z_j)$$



Gross profit share (h) including overhead costs and thus also management salaries, in gross value added of industry j:

$$(5.7) \quad h_j = \frac{\Pi_j}{\Pi_j + W_j} = \frac{mwa_j(1+z_j)}{mwa_j(1+z_j) + wa_j} = \frac{(1+z_j)m_j}{(1+z_j)m_j + 1} = \frac{1}{1 + \frac{1}{(1+z_j)m_j}}$$

Π : gross profit including overhead costs, W : wages from direct labour

Share of wages for direct labour in gross value added $(1-h)_j$:

$$(5.8) \quad (1-h)_j = \frac{W_j}{(\Pi + W)_j} = \frac{1}{(1+z_j)m_j + 1}$$



Profit share for economy as a whole as weighted average of industry profit shares:

$$(5.9) \quad h = \frac{\Pi}{(\Pi + W)} = \frac{(1+z)^m}{(1+z)^{m+1}} = \frac{1}{1 + \frac{1}{(1+z)^m}}$$

Wage share of direct labour (1-h) for economy as weighted average of industry wage shares:

$$(5.10) \quad (1-h) = \frac{W}{(\Pi + W)} = \frac{1}{(1+z)^{m+1}}$$



“[...] broadly speaking, the degree of monopoly, the ratio of prices of raw materials to unit wage costs and industrial composition are the determinants of the relative share of wages in gross income of the private sector.”

(Kalecki 1954, p. 30; 1971, p. 64)



Table 5.1: Determinants of the gross profit share (including overhead costs) in a closed economy according to Kalecki

1. Degree of monopoly determining the mark-up in price setting of firms

- a) degree of market concentration
- b) relevance of price competition
- c) overhead costs
- d) bargaining power of trade unions

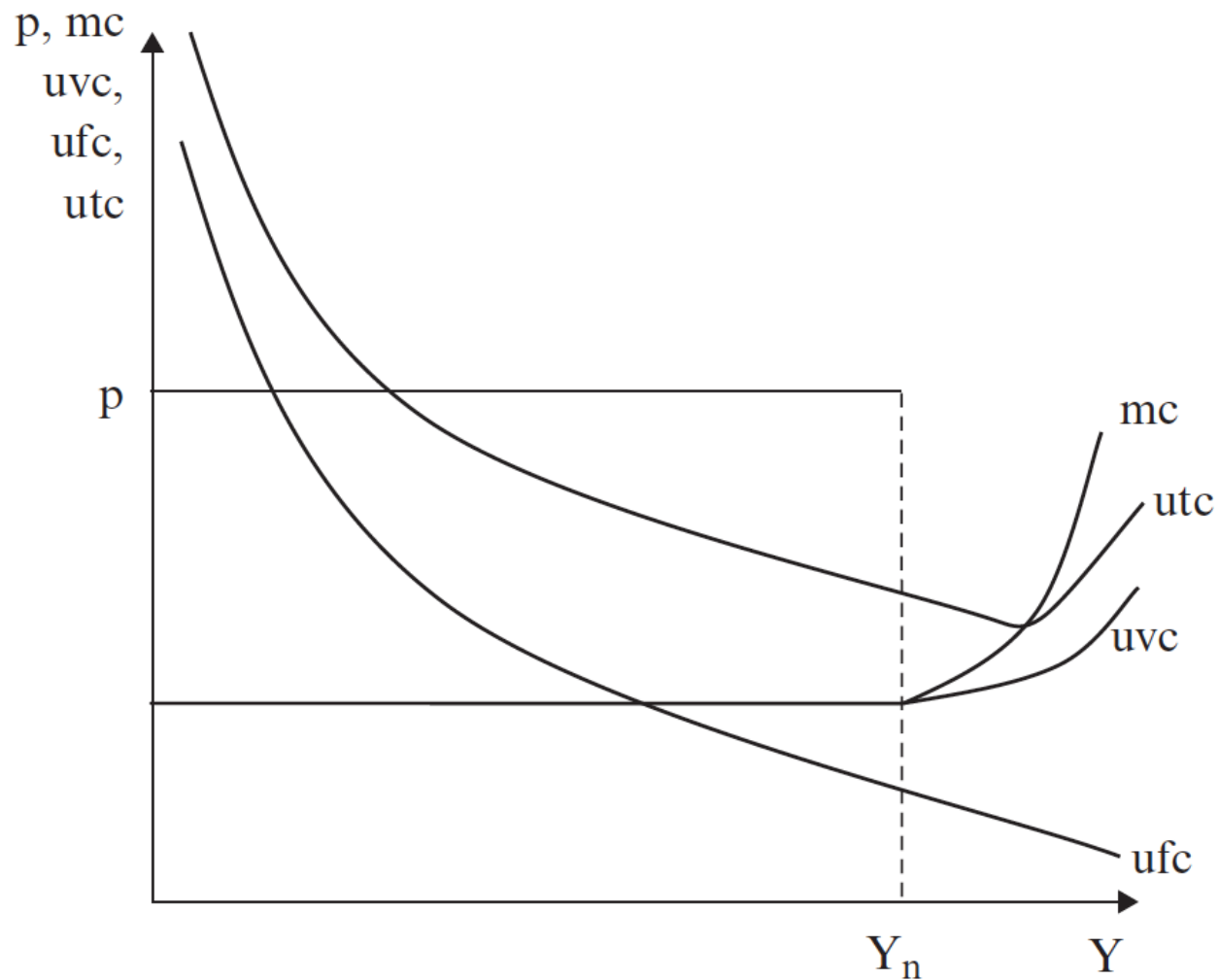
2. Ratio of raw material costs to labour costs

3. Industry or sector composition of the economy

➤ no reason to assume long-run constant functional income distribution



Figure 5.2 Target mark-up pricing given by the target rate of return at some target or normal level of output





5.3 THE DETERMINATION OF PROFITS AND NATIONAL INCOME



$$(5.11) \quad pY = W + \Pi = p_C C_W + p_C C_\Pi + p_K I$$

pY : gross national income, W : wages, Π : profits, $p_K I$: gross investment expenditures, $p_C C_\Pi$: consumption out of profits, $p_C C_W$: consumption out of wages with p , p_C , p_K : price levels for aggregate output, consumption goods, investment goods respectively

$$(5.12) \quad \Pi = p_C C_\Pi + p_K I - S_W$$

S_W : saving out of wages

$$(5.13) \quad W = p_C C_W$$

$$(5.14) \quad \Pi = p_C C_\Pi + p_K I$$



“Now, it is clear that capitalists may decide to consume or to invest more in a given period than in the preceding one, but they cannot decide to earn more. It is, therefore, their investment and consumption decisions which determine profits, and not vice versa.”

(Kalecki 1954, p. 46; 1971, p. 78-79)

“[...] Mr. Kalecki’s theory of profits [...] can be paraphrased by saying that ‘capitalists earn what they spend, and workers spend what they earn’.”

(Kaldor 1955/56, p.96)



$$(5.15) \quad p_C C_\Pi = c_\Pi \Pi, \quad 0 \leq c_\Pi < 1$$

c_Π : propensity to consume out of profits,

Insert (5.15) into (5.14):

$$(5.16) \quad \Pi = \frac{p_K I}{1 - c_\Pi} = \frac{p_K I}{s_\Pi}, \quad 0 \leq c_\Pi < 1, 0 < s_\Pi \leq 1$$

s_Π : propensity to save out of profits

Since $h = \Pi/pY$, equation (5.16) becomes:

$$(5.17) \quad pY = \frac{p_K I}{(1 - c_\Pi)h} = \frac{p_K I}{s_\Pi h}, \quad 0 \leq c_\Pi < 1, 0 < s_\Pi \leq 1$$



(5.17) can also be derived from:

$$(5.18) \quad p_K I = S = s_{\Pi} \Pi = s_{\Pi} \frac{\Pi}{pY} pY = s_{\Pi} h pY$$

“In the present conception investment, once carried out, automatically provides the savings necessary to finance it. [...] If investment increases by a certain amount, savings out of profits are *pro tanto* higher.”

(Kalecki 1954, p. 50; 1971, p. 83, emphasis in the original)

- Kalecki uses monetary circuit model with exogenous interest rates and endogenous money and credit
- Kalecki’s approach contains the paradox of saving and the paradox of costs



“There are two elements in Kalecki’s analysis of profits, the share of gross profit in the product of industry is determined by the level of gross margin, while the total flow of profits per annum depends upon the total flow of capitalists’ expenditure on investment and consumption.”

(Robinson 1977, pp. 13-14)



Open economy with a government and positive saving out of wages:

$$(5.19) \quad \Pi^{\text{net}} + W^{\text{net}} + T = p_K I + p_C C_W + p_C C_\Pi + G + p_X X - p_M M$$

Π^{net} : profits net of taxes, W^{net} : wages net of taxes, T : direct and indirect taxes, $p_K I$: investment, G : government expenditure, $p_X X$: exports, $p_M M$: imports

Subtracting wages and taxes from both sides of equation (5.19), we obtain:

$$(5.20) \quad \Pi^{\text{net}} = p_K I + p_C C_\Pi + G - T + p_X X - p_M M - S_W$$



“The above shows clearly the significance of ‘external’ markets (including those created by the budget deficits) for a capitalist economy. Without such markets profits are conditioned by the ability of capitalists to consume or to undertake capital investment. It is the export surplus and the budget deficit which enable capitalists to make profits over and above their own purchases of goods and services.”

(Kalecki 1954, p. 52; 1971, pp. 85-86)



$$(5.21) \quad p_C C_\Pi = c_\Pi \Pi^{\text{net}} = (1 - s_\Pi) \Pi^{\text{net}}$$

$$(5.22) \quad S_W = s_W W^{\text{net}} = s_W (1 - h) Y^{\text{net}} = s_W (1 - h) (W^{\text{net}} + \Pi^{\text{net}}), \quad 0 < s_W < s_\Pi \leq 1$$

Inserting equations (5.21) and (5.22) into equation (5.20) yields the following results for the level of equilibrium profits net of taxes:

$$(5.23) \quad \Pi^{\text{net}} = \frac{p_K I + G - T + p_X X - p_M M - s_W (1 - h) W^{\text{net}}}{s_\Pi + s_W (1 - h)}$$

$$(5.24) \quad p Y^{\text{net}} = \frac{p_K I + G - T + p_X X - p_M M}{h(s_\Pi - s_W) + s_W}$$

- Dualism in Kalecki's distribution theory is no longer generally valid when workers save a part of their income.



The strict dualism in Kalecki's approach would be further weakened if potential effects of changes in income distribution on net exports or on the government's financial balances were taken into account:

“In Kalecki's general model of an open economy with workers' saving, the ‘class struggle’ which is reflected in changing money wages and prices, could affect not only income shares by altering markups in manufacturing industries but also the level of profits because of their effects on the trade balance, the government deficit, and workers' saving.”

Asimakopulos (1988, p. 152)



5.4 ASSESSING KALECKI'S THEORY OF DISTRIBUTION



- Effects of changes in demand on income distribution (demand-determined prices, sectoral composition, saving out of wages, open economy)
- Definition of ‘degree of monopoly’ and mark-up
- Steedman: prices are cost-determined, but costs are price-determined (vertically integrated sectors as way out?)
- Weintraub’s k -Theory of price and distribution



Weintraub's (1979, 1981/82) theory of distribution

$$(5.25) \quad p = k_w \frac{w}{y}, \quad k_w > 1$$

p : general price level, k_w : wage-cost mark-up, w : average nominal wage, y : average labour productivity

$$(5.26) \quad h = \frac{\Pi}{W + \Pi} = \frac{(k_w - 1) \frac{w}{y}}{\frac{w}{y} + (k_w - 1) \frac{w}{y}} = \frac{k_w - 1}{k_w}$$

$$(5.27) \quad (1 - h) = \frac{W}{W + \Pi} = \frac{\frac{w}{y}}{\frac{w}{y} + (k_w - 1) \frac{w}{y}} = \frac{1}{k_w}$$



5.5 FURTHER DEVELOPMENTS OF MARK-UP PRICING AND DISTRIBUTION THEORIES: EICHNER, HARCOURT AND KENYON, WOOD, STEINDL, SYLOS-LABINI AND OTHER AUTHORS



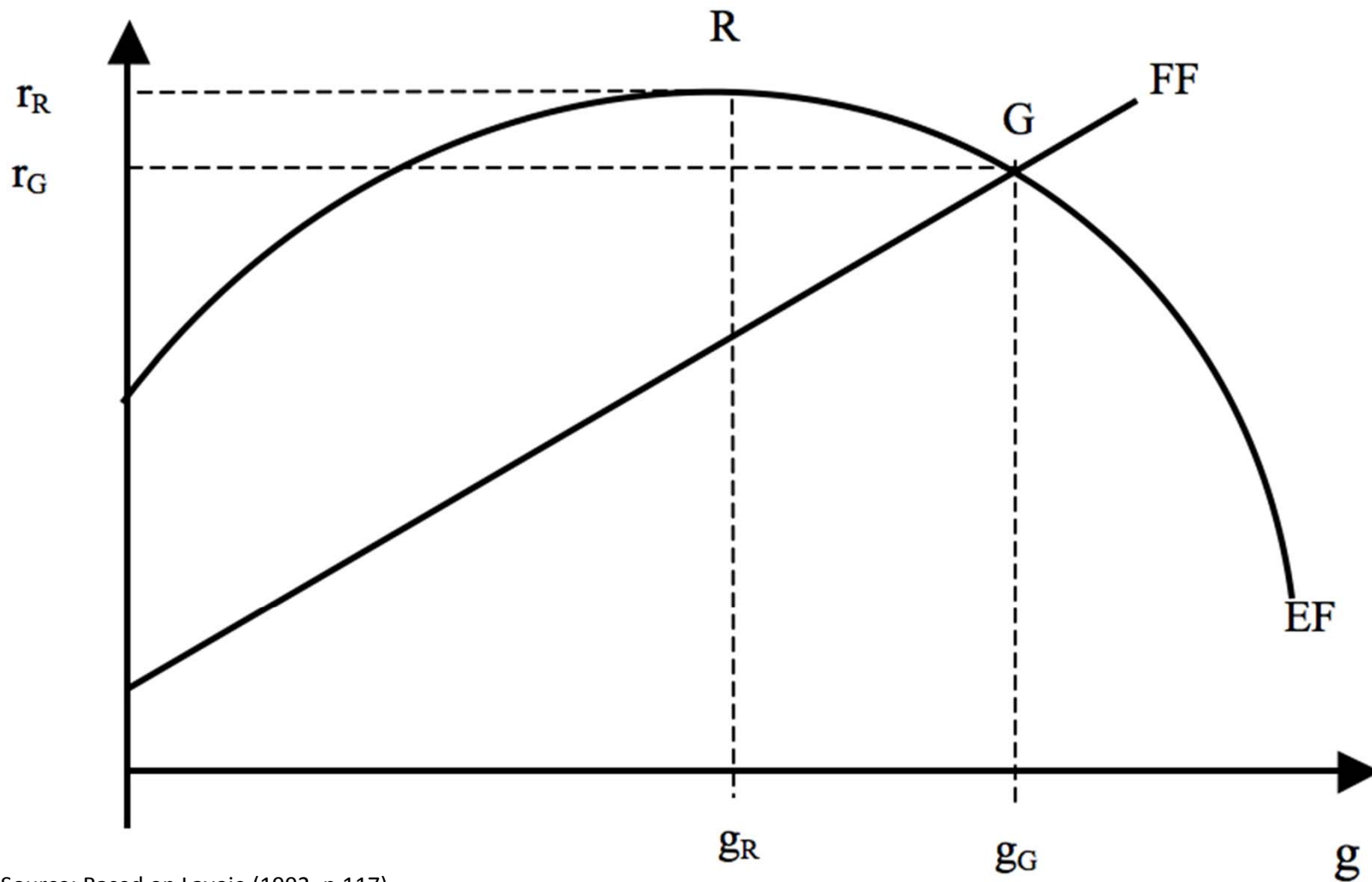
First group

- Deviates from Kalecki's initial approach and relates the mark-up to firm's financing requirements for investment in capital stock in a growing economy

Wood (1975), Eichner (1976), Harcourt and Kenyon (1976):

- Incompletely competitive financial markets (Kalecki's principle of increasing risk)
 - Mark-up is determined by firm's internal finance requirements for investment purposes
- planned investment has a positive effect on the mark-up

Figure 5.3 Maximum rate of profit and maximum rate of growth of the firm



Source: Based on Lavoie (1992, p.117)



Determining the required mark-up

$$(5.28) \quad r = \frac{\Pi}{pY} \frac{Y}{Y^p} \frac{Y^p}{K} = hu \frac{1}{v}$$

r : rate of profit, total gross profits including retained profits, interest, dividends, depreciation of fixed capital and overhead costs, pY : income, Y : real output, Y^p : potential output given by capital stock, K : capital stock, h : profit share, u : rate of capacity utilization, v : capital-potential output ratio

$$(5.29) \quad h = \frac{m}{m+1}$$



$$(5.30) \quad u = u_n$$

u_n : average or normal rate of capacity utilization

$$(5.31) \quad m_G = \frac{1}{\frac{1}{r_G \frac{v}{u_n}} - 1}$$

m_G : mark-up on unit variable costs, r_G : target rate of profit



Second group

- Follows Kalecki in locating the determinants of the mark-up in the competitive environment of the respective firm or industry

- Steindl (1952): In oligopolistic industries firms hold excess capacity

“Thus, a *planned* and deliberate reserve of excess capacity is at all times held by most producers, with good reason from their point of view, even though a part of it, at least, is waste from the point of view of the community.”

(Steindl 1952, p. 10, emphasis in the original)

“The degree of utilisation actually obtaining in the long run, we must conclude, is no safe indication of the *planned* level of utilisation.”

(Steindl 1952, p. 12, emphasis in the original)



- Sylos-Labini (1969):
 - Firms hold excess capacity to be able to supply fluctuating demand and to deter market entry
 - Firms set prices in order to allow for minimum target rate of profit which is too low to attract competitors with a higher fixed capital burden
- entry-preventing pricing



Figure 5.4 'Entry-preventing pricing'

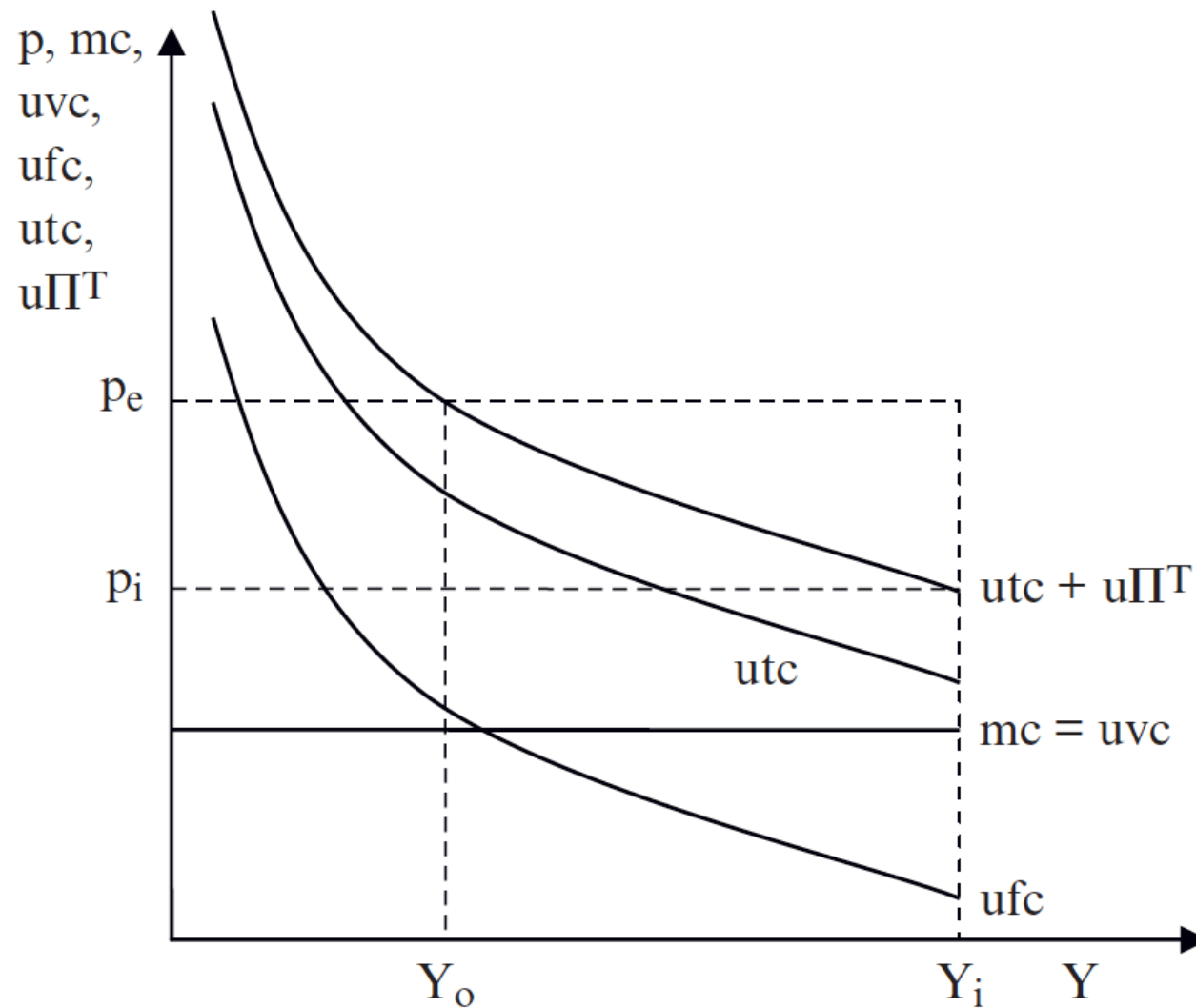




Figure 5.5 Profit rate and growth rate: competition versus oligopoly

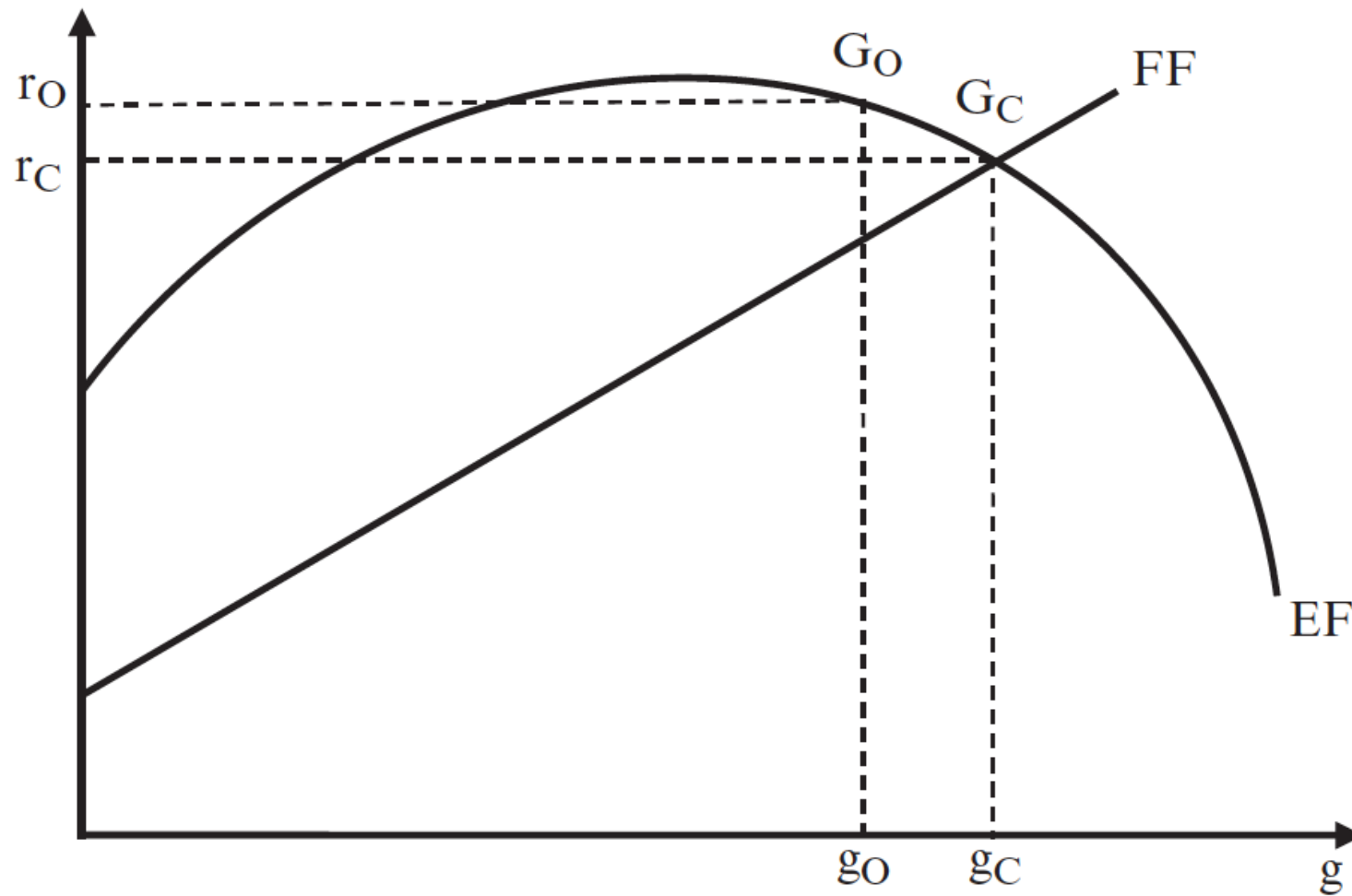


Figure 5.6 Profit rate and growth rate: increasing barriers to entry

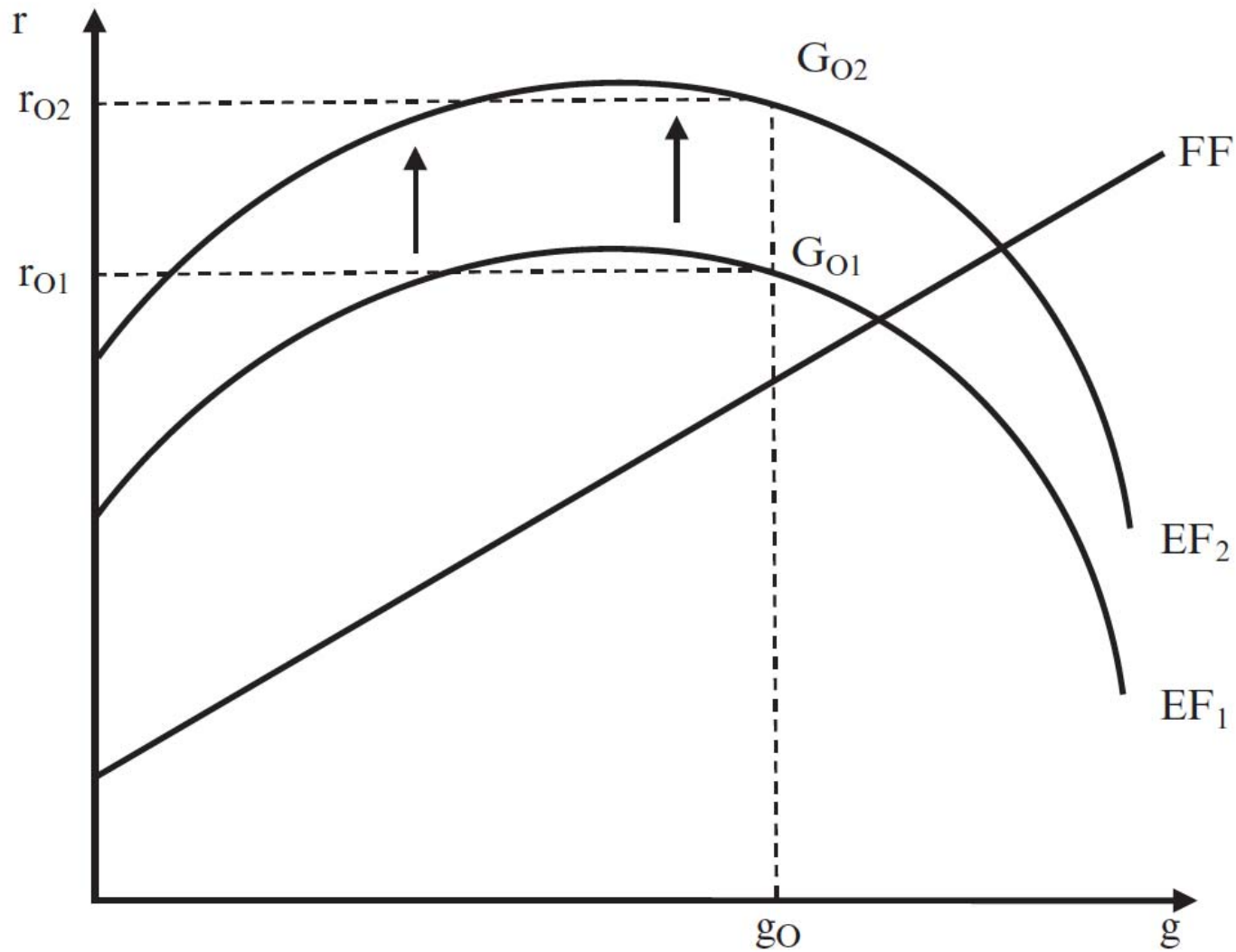
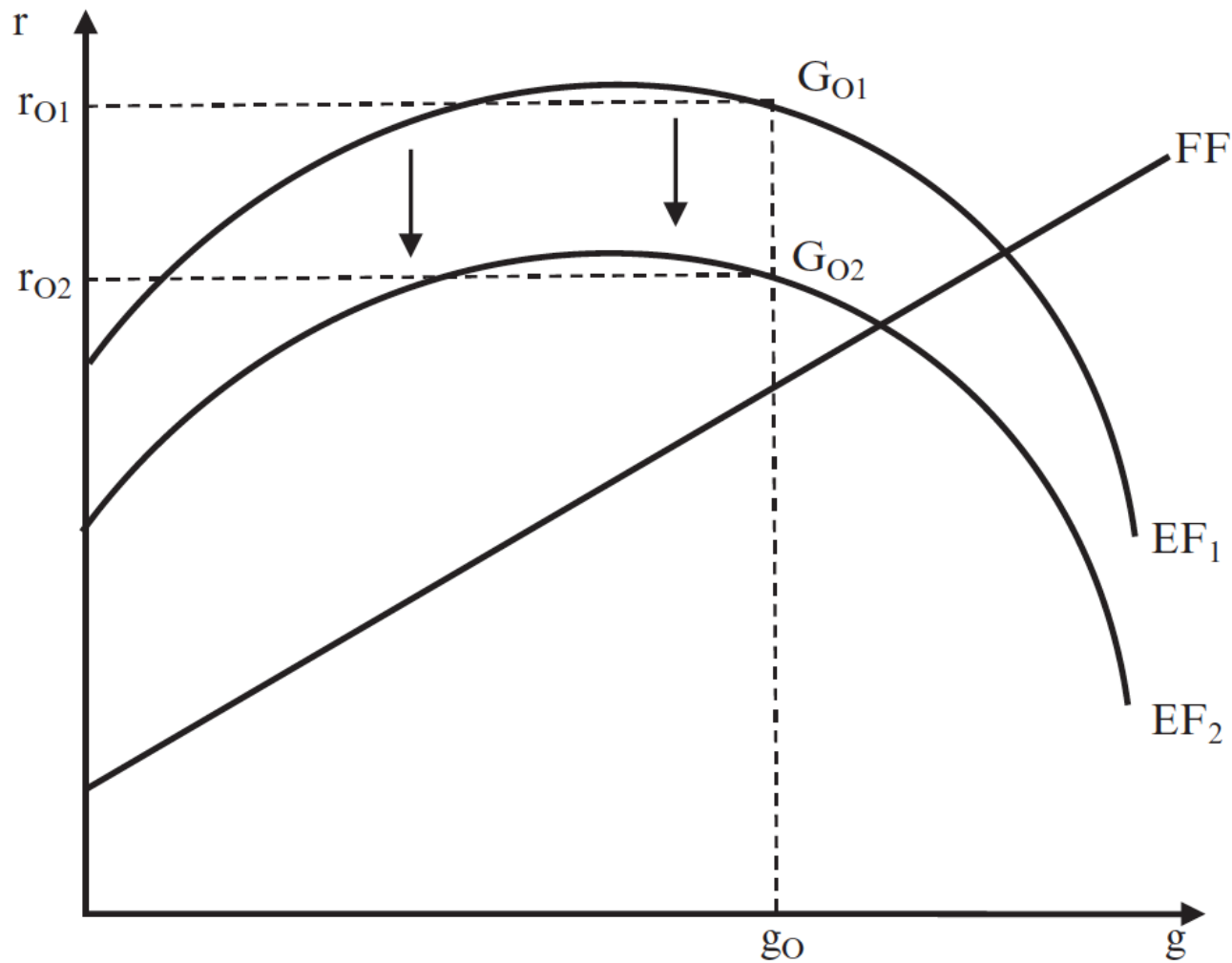




Figure 5.7 Profit rate and growth rate: increasing workers' bargaining power





Third group

- Extended and elaborated on Kalecki's ideas that overhead costs may have an impact on the mark-up and functional income distribution
- Dutt (1990/91), Lavoie (1993), Hein (2006b, 2007, 2008, chap. 13): interest rate or interest payments elastic mark-up
- Neo-Ricardian monetary theory of distribution (Panico 1985; Pivetti 195, 1991)
- Lima and Setterfield (2010): Empirical evidence
- Hein (2012a, chap. 2; 2014), Hein and van Treeck (2010a): Dividend-elastic mark-up



“Of course if the market rate of interest rises considerably and stays up for a substantial period, as it has done recently (1971), that may cause firms to increase the mark-up.”

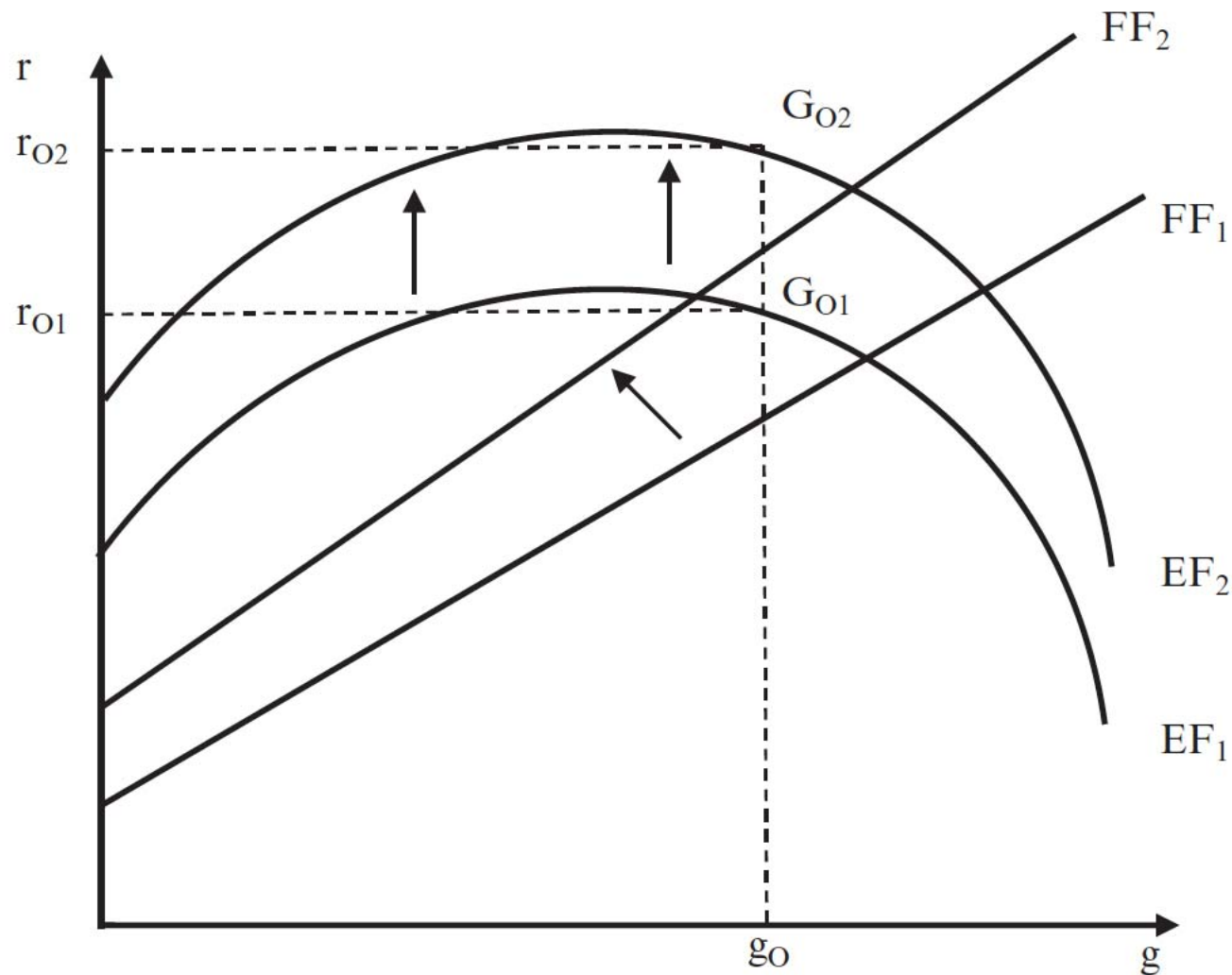
(Harrod 1973, p. 44)

“There is evidence for believing that interest costs are passed on in higher prices in much the same way as wage costs.”

(Kaldor 1982, p. 63)



Figure 5.8 Profit rate and growth rate: increasing overhead costs triggering a higher mark-up





5.6 DETERMINANTION OF INVESTMENT, ECONOMIC DYNAMICS AND GROWTH IN KALECKI'S APPROACH



“It is interesting to notice that the theory of effective demand, already clearly formulated in the first papers, remains unchanged in all the relevant writings, as do my views on the distribution of national income. However, there is a continuous search for new solutions in the theory of investment decisions, where even the last paper represents – for better or for worse – a novel approach.”

(Kalecki 1971, p. viii)

“Although Kalecki recognized that psychological factors influence investment decisions, he insisted that capitalists do not react solely on expectations, but rather make their decisions on the basis of realized profits, which provide both the finance and the stimuli for investing.”

(Lopez G. 2002, p. 613)



- Early work published in 1933 in Poland (Kalecki 1969a, chap 1.; 1971, chap. 1)

$$(5.32) \quad g = \frac{I}{K} = g\left(\underset{+}{r}, \underset{-}{i}\right)$$

g : rate of capital accumulation, I : investment, K : capital stock, r : rate of profit, i : rate of interest

Since the long-term rate of interest does not vary much over the cycle:

$$(5.33) \quad g = \frac{I}{K} = g\left(\underset{+}{r}\right)$$

Profits are determined by investment:

$$(5.34) \quad g = \frac{I}{K} = g\left(\underset{+}{I}, \underset{-}{K}\right)$$



“The tragedy of investment is that it causes crisis because it is useful.”

(Kalecki 1939, p.149)



Kalecki (1954, chap. 9; 1971, chap. 10):

$$(5.35) \quad g = \frac{I}{K} = g \left(\underbrace{\frac{\Pi_F}{pK}}_{+}, \underbrace{\frac{d\Pi}{pK}}_{+}, \underbrace{\frac{dpK}{pK}}_{-}, \underbrace{TC}_{+} \right)$$

Π_F : retained profits, TC: rate of technical change

“It follows from the above that in our approach the rate of growth at a given time is a phenomenon rooted in past economic, social and technological developments rather than determined fully by the coefficients of our equations as is the case with the business cycle.”

(Kalecki 1968b; 1971, p.174)

Kalecki's demand-led growth approach



- Technological progress and innovation
- Distribution
 - driving investment and consumption demand
- Government deficits
- Net exports
 - ‚external demand‘



Long-run perspectives (Kalecki 1954, chap.15):

- Slowdown in growth because of declining intensity innovations
 - Importance of opening up new sources of raw material will decline
 - Increasing degree of monopoly will suppress introduction of innovations
 - Capital intensity of innovations will decline (‘scientific innovations’)
- Shift from wages to profits due rising degree of monopoly contributes to slowdown in output growth
- Weakening of external demand (net exports, government deficits) will put further downward pressure on growth



5.7 STEINDL'S THEORY OF STAGNATION IN MATURE CAPITALISM



“(1) Oligopoly brings about a maldistribution of funds by shifting profits to those industries which are reluctant to use them. [...]

(2) Oligopoly leads to a decline in the degree of utilization, either by a tendency to increase markups or by a rigidity of the markup in face of a decline in investment.” (Steindl 1976, p. xv)

Further dampening of investment:

- Low rates of utilisation as barrier to entry
- Reluctance of big mature firms to go into debt (decline in animal spirits)

$$(5.36) \quad g = \frac{I}{K} = g \left(\frac{\Pi_F}{pK}, \frac{pK_F}{pK}, u \right)$$

g : accumulation rate, u : rate of utilization of productive capacities,
 Π_F : retained profits, pK_F : capital stock owned by firm



“When I wrote *Maturity and Stagnation*, I wanted to deny all influences of innovations on the accumulation of capital. I think now that this was foolish and I subscribe to Kalecki’s view that innovations are capable of generating a trend.”

(Steindl 1979, p. 7)

Steindl (1964; 1976; 1979; 1981c; 1989) admits that the exhaustion of a long technological wave can contribute to the explanation of stagnation.



Steindl (1979): reasons for golden age

- Public spending increased tremendously after World War II, financed to a great extent by taxes on profits.
- Technological competition between east and west, spilling over from the public to the private sector
- The post-war tensions triggered close cooperation by the western countries under the leadership of the USA (Bretton Woods, Marshall Plan, ...), increase in international trade and competition keeping profit margins down
- European countries benefited from technological backwardness with respect to the USA ('catching-up' factor in economic growth).



Re-emergence of stagnation

- Reduction of tensions between super powers
 - Increased rivalry among capitalist economies, collapse of Bretton Woods
 - Tendencies towards higher capital productivity
 - Rising marginal propensities to save in mature economies
 - Fading out of catching up
 - Increasing environmental and energy problems causing inflation + uncertainty
- Most important: “Stagnation policy” (Steindl 1979)
- Bhaduri/Steindl (1985), Steindl (1989):
Shift of powers in favour of the financial sector and tendency towards ‘financialisation’ of the non-financial firms