MARKET STRUCTURE AND ECONOMIC GROWTH: STEINDL'S CONTRIBUTION

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In modern economics market structure issues are microeconomic. The structure of markets affects the allocation of resources, and competition matters because resource allocations would not be optimal in its absence. Since the efficiency of production is the primary issue, the macroeconomic implications of competition receive little attention.

The following takes up the question of the macroeconomic importance of competition. It considers the relation between the competition of firms and their expansion and asks whether expansion is dependent on competition. Does competition “execute” the laws of expansion, sustain growth or increase its pace? These issues are explored through an examination of one of the few works in modern economics that addresses them, Josef Steindl’s Maturity and Stagnation in American Capitalism.

The Growth Problem

Steindl’s work is concerned with the growth problems of capitalist economies and especially with the stagnation tendencies of advanced or “mature” economies. These problems are explained in terms of the market structures that develop with the capitalist economy’s expansion. The investment that expands the economy generates a competition that concentrates industries, and the concentration of industry undermines the conditions that sustain investment.

While investment has both supply and demand conditions, the demand conditions are the critical ones. The expansion of firms is not limited by the real or financial assets available to them, by their “savings” or the “savings” of others. Indeed, firms tend to have more resources than they can use. Rather than being limited by their profits or credit lines, their expansion is limited by the demand for their products.
Product demand depends on the level of investment. The utilization rate of firms’ output capacity increases with the investment that expands capacity. Both the extent of capacity expansion and the extent of its utilization depend on investment. If the demand generated by investment is less than the output capacity created, the Keynesian problem of underutilized resources, “wealth in the midst of poverty,” will materialize.

For firms to invest without reducing the utilization rate of their equipment, their investments in the aggregate must increase demand by the same amount as they increase output capacity. Investment must be at a rate that keeps the growth of demand and output capacity in “equilibrium.” This equilibrium growth rate is, as Harrod (1939) showed, that rate which is “warranted” by savings conditions, the “propensity to save” (s), and production conditions, the “required” or “desired” capital/output ratio (Cr).

If investment grows at the warranted rate (s/Cr), demand will expand at the same pace as output capacity. If, however, the growth rate of investment is less than the warranted rate, the growth of output capacity will outstrip the growth of demand. The actual capital/output ratio will rise above the required ratio; firms will have more productive capacity than their output requires.

Since firms reduce the growth of their productive capacity when they have more than they need, investment will fall when the actual capital/output ratio rises above the required ratio. This fall in investment will reduce the utilization rate of firms’ equipment, pushing the actual capital/output ratio further above the required ratio. Excess capacity will grow rather than shrink.

When investment falls, excess capacity increases, and when excess capacity increases, investment falls. Any fall in the rate of investment below the warranted rate will be cumulative; any growth rate below the warranted rate will bring the growth process to a halt. Implicit in the growth conditions of capitalist economies (in “Harrod’s growth equation”) is a “tendency to stagnation” (Steindl, 1979, p.180).[1]

Stagnation can be avoided if, and only if, the growth rate that savings and production conditions require (“warrant”) can be adjusted to the growth rate that firms “desire.” The equalization of these growth rates depends, in turn, on the possibility of bringing the “propensity to save” in line with the “propensity to invest.” With production conditions (“factor proportions”) given by technol-
ogy, the burden of the adjustment of the warranted growth rate to
the actual rate falls on the savings rate.

Under the savings assumptions of Steindl's growth theory,
which are also Kalecki's, the problem of the reconciliation of sav-
ing and investment propensities is that of the adjustment of the
profit share to the investment rate. Since the firms ("capitalists") do
most, if not all, of the saving, their share of the revenue determines
the percentage saved. Harrod's saving propensity depends on
Kalecki's "mark-up," the price-cost relation or profit margin.

The dependence of the savings rate on the profit share con-
nects the issue of stagnation to that of the mark-up's determination.
The question of the reconciliation of the warranted and actual
growth rates becomes the question of the flexibility of mark-ups
and of the factors that affect mark-ups. When the warranted growth
rate changes with the mark-up, the warranted growth rate adjusts to
the growth rate that firms desire when their profit margins do.

The Competition Solution

The conditions under which profit margins change with the
growth rates of firms are examined in the first part of Maturity and
Stagnation in American Capitalism. Here a solution to the growth
problems of the capitalist economy is found in the competition of
firms. Competition links profit margins to expansion, keeping the
warranted growth rate in line with the desired rate. The expansion
of capital is sustained through the competition of capitals.

The most critical condition for the competition of capitals is
differentiation of production costs. Competition works only in in-
dustries where producers' costs differ, and works better the larger
these cost differentials. A competitive industry is one that has a
significant part of its output produced by both large, low cost firms
and small ("marginal"), high cost firms.

The large firms are "progressive." They have the funds that
the expansion and modernization of the industry's productive ca-
pacity requires. The firms on the industry's "margin," those whose
costs make them vulnerable to competition, do not as a group make
any profit. They can neither expand their productive capacity nor
invest in cost reducing innovations. When the industry grows, their
share of its output is maintained through expansion of their num-
bars.[2]
Market Structure and Economic Growth

The progressive firms not only can expand the industry’s productive capacity. They also want to do so. Growth is their objective, and because they prefer investment in existing products over investment in new ones, they will invest their profits in the industry in which they make them.[3]

The growth potential of progressive firms depends on the rate of “internal accumulation,” saving out of profits. The greater the rate at which they accumulate funds, the greater can be the rate at which they invest them. While investment can be financed with outside funds, borrowings are limited by the extent of their own funds (for the reasons given by Kalecki). The growth of their own funds is, in turn, limited by the size of net profit margins. Firms’ growth potential rises with their net profit margins.

A rise in the profit margins of progressive firms not only increases their growth potential. It also accelerates capacity expansion. A rise in profit margins “induces” investment because the growth rate that the progressive firms desire is the highest possible one. They will thus expand capacity at the rate allowed by profit margins as long as doing so is profitable.

If a rise in profit margins brings the growth rate of the progressive firms’ capacity above the growth rate of the industry’s sales, the utilization rate will fall. The fall in utilization will intensify sales efforts, as firms try to pass the excess capacity to their higher cost rivals. While there are always competitive pressures on marginal producers, the acuteness of these pressures depends on the space in the industry for the progressive firms’ expansion.

The growth rate of the progressive firms’ sales cannot rise above the industry’s growth rate unless the growth rate of the marginal firms’ sales falls below it. And the progressive firms’ sales cannot increase more than the industry’s unless the marginal firms’ sales decline. Progressive firms can raise their growth rate above the industry’s only by increasing their market share.

Enlargement of market share is the way that progressive firms enlarge the space for expansion. When their growth potential rises about the industry’s growth rate, they appropriate the markets of marginal firms. Progressive firms eliminate excess capacity by “knocking out” their competitors’ capacity and/or reducing the growth rate of their competitors’ capacity, the marginal firms’ share of the industry’s sales growth.

The market share expansion reduces the progressive firms’
profit margins, for they cannot take markets away from the marginal firms unless they make a "special sales effort." They must cut their products' prices, improve their quality, or increase advertising to get more than their proportionate share of the growth in the industry's sales. Sales promotion increases unit sales costs and product improvement raises unit production costs. Both squeeze net profit margins while price cuts also squeeze gross margins.

Competition in the industry limits net profit margins to a level just large enough for a capacity expansion equal to the industry's growth. For if margins rise above this "critical level," capacity expansion in the industry will exceed sales growth. Excess capacity will develop in the industry, competition will intensify, and the "special sales efforts" will bring the net profit margins down.

The critical level of the profit margins depends on (1) the growth rate of sales, (2) the capital/output ratio, and (3) the progressive firms' gearing (debt/equity) ratios. The first two determine the "equilibrium" investment that keeps the industry's capacity in line with sales, while the third determines the net profit margin that the financing of this investment by the progressive firms requires. If their gearing ratios are given by the degree of indebtedness they desire (or their creditors require), the critical level of their net profit margins will increase with the industry's expansion and/or capital intensification of production.

Whereas competition in the industry holds net profit margins down, process innovation pushes them up. Innovation is as inevitable as competition, for both come out of the progressive firms' growth drive. Progressive firms increase their expansion funds (growth potential) by investing in cost reducing techniques just as they increase their sales (actual growth rate) by appropriating their competitors' markets. The result of their efforts in both directions is the movement of profit margins towards their critical level, the margins' adjustment to the industry's growth.

The industry's growth depends on the growth of demand in the economy as a whole, and this depends on aggregate investment. The dependence of the profit margins in the industry on its expansion is the dependence of the profit margins on the growth rate that firms desire. When expansion occurs under competitive conditions, the warranted growth rate adjusts to the actual rate. Competition is the capitalist economy's own solution to the stagnation inherent in its growth conditions.[4]
Oligopoly

The problem with the competition solution to stagnation is that the conditions under which it works are undermined by the operation of competition itself. Since the competition that holds net profit margins down shifts sales from the smallest firms to the largest, the longer the time in which competition operates in an industry, the greater will be the degree of concentration. Each bout of competitive warfare will eliminate a number of the marginal firms. It will thus reduce the market share of the small firms and increase the size of the smallest. Eventually none of the firms left in the industry will be "marginal." All will be too large, or the cost differences between them will be too small, for any of them to knock out the output capacity of the others. The result of competition is oligopoly.

When the industry becomes an oligopoly, profit margins lose their center of gravity. The mechanism that depresses margins and ties them to the industry's growth is no longer operative. Profit margins will still approach their critical level from below, for process innovation in the industry will bring unit costs down and the monopolistic practices will push prices up. But nothing will block the profit margins' rise above their critical level, or bring them down to this level when they are at a higher one. The oligopolization of the industry sets profit margins loose from their anchor in the industry's growth.

The unleashing of profit margins ends their downward movement. Profit margins in oligopolistic industries move in one direction only: up. Because they do not fall, they do not come down when investment declines.

Instead of depressing profit margins in oligopolistic industries, a decline in investment depresses capacity utilization rates. "Internal accumulation" (saving out of profits) is adjusted to the fall in investment through reductions in output levels and employment. Whereas a fall in the investment rate in a competitive economy reduces the savings propensity, in an oligopolistic economy it increases excess capacity.

The excess capacity generated by the decline in investment blunts the investment incentive. Excess capacity cannot be knocked out of an oligopolistic industry through the elimination of firms;
there are no marginal firms to eliminate. Reduction of excess capacity through intensification of sales efforts is possible only in a competitive industry. All that firms in an oligopolistic industry can do in the face of an unwanted increase in excess capacity is cut investment.

The result of the decline in investment is another decline, and the result of the second decline is a third one, for the second decline increases the excess capacity generated by the first one. When the oligopolists cut investment, their excess capacity grows, and when their excess capacity grows, they cut investment. In oligopolistic economies investment declines are cumulative.

The competitive economy can adjust to a lower growth rate; the oligopolistic one cannot. The warranted growth rate of an oligopolistic economy does not fall when its growth slows down. Because profit margins are downwardly inelastic, a fall in the growth rate increases excess capacity instead of decreasing the savings propensity. And because an increase in excess capacity in an oligopolistic industry blunts the investment incentive instead of intensifying sales efforts, the increase in excess capacity leads to a further fall in the growth rate. The fall in the growth rate thus pushes the economy off the “knife edge,” sets off the spiral of falling capacity utilization levels, investment and employment that results in stagnation.

Stagnation will develop whenever the growth rate falls, and the growth rate will fall whenever capacity utilization rates fall below their normal levels. While capacity utilization rates need not fall, they tend to do so under oligopoly. They are pushed down by the upward drift of the oligopolists’ profit margins, which increases the savings propensity and thus depresses aggregate demand.

The effective demand problems of advanced (“mature”) capitalist economies are rooted in the oligopolistic structure of industries. Savings rates are too high because profit margins are too high. If profit margins were lower, the propensity to save would be lower, and if profit margins fell with investment, the propensity to save would adjust to the propensity to invest. The saving and investment propensities are out of line, not because the individuals that do the saving (consumers) are not the ones that do the investing (entrepreneurs), but because the saving and investing is done in an oligopolistic economy.[5]
Product Development

The competition considered in Steindl's work is the competition within industries. This intraindustry competition is the competition generated by the firm's expansionary drive, and the competition that sustains investment, keeps the capitalist economy off its stagnation course.

While competition within industries is the form of competition traditionally treated in economics, it is not the only kind of competition. There is also competition between industries, between new and old products and between different new ones. Economics does not consider interindustry competition, not because of the prevalence of intraindustry competition, but because the product development that fuels interindustry competition is not recognized. The traditional treatments of competition assume a given industrial structure, and even those that consider the introduction of new techniques do not consider the development of new products.

In the case of Steindl's analysis the abstraction from product development is especially surprising since the process innovations that progressive firms carry out presuppose the development of new producer goods. These innovations are not just changes in the organization of production or the combination of "factors." They are changes in the means of production, and it is because such changes are "embodied" in new plant and equipment that marginal firms cannot undertake them.

The development of new products is not only implicit in the process innovation of Steindl's progressive firms. It is also implicit in the growth objective that determines their actions. Since the markets for new products grow faster than the markets for old ones, the firm can accelerate its growth by developing new goods or diversifying into the industries that produce them. Product development is as much a part of the firm's expansionary dynamic as the process innovation that increases the firm's "internal accumulation."[6]

Unlike intraindustry competition, the interindustry kind is not "clogged" by oligopoly. The products of oligopolistic industries can be displaced ("creatively destroyed") by new goods, and large firms can lose out to small ones when competition is technological.[7] Interindustry competition thus continues after intraindustry competition ends and may ward off the stagnation of the oligopoly stage.
Whether or not it does depends, of course, on how interindustry competition affects the economy’s macrodynamics. And this, in turn, depends on its effect on profit margins and the “incentive to invest.”

The expansionary processes of firms that pioneer new products are similar to those of firms that improve the production of old ones. Like the growth of these “progressive” firms, the growth of the product pioneering firms comes partly at the expense of other firms. Their expansion is, and must be, “aggressive.” They have to develop the markets for their products, and this involves taking markets away from the producers of old products and/or the producers of other new ones.[8]

The success of the new product depends on whether it can get a share of the product sales in the economy, the “aggregate demand.” Its pioneers must siphon off a part of this demand, carve out a space for the product in one or more of the economy’s existing markets. Since the size of the space firms create will determine the extent of their innovation’s success, much, if not all, of their efforts will be directed toward the enlargement of the product’s aggregate demand share.

Competition over the aggregate demand is fought with the same weapons as competition over the demand for individual products. Product innovation, price reduction, and sales promotion are the routes to the expansion of the new product’s share of the aggregate market. Its pioneers widen and solidify its market by (1) improving the product’s operation and extending its uses, (2) bringing its price down to (or below) the prices of its substitute products, and (3) advertising its usages and the technical advances it embodies. The enlargement of the new product’s share of the aggregate market comes at the cost of its profit margin.[9]

The necessity of developing the market for the new product, and the desirability of developing the largest possible market, holds down the mark-up. The level of the mark-up is limited by the market requisites of expansion. Like profit margins in competitive industries, profit margins in new industries are grounded in market growth.[10]

The interindustry competition affects the profit margins in all the industries engaged in the competition, not just the profit margins in the new industries. While this competition does not bring the profit margins in the old industries down to their “critical levels,” it does constrain them. Competition from new products holds down
the price increases on old products and forces innovations in design and operation.

A rise in the price of the old product increases the cost competitiveness of the new product and the desirability of trying out the new product's uses. Experimentation with the new product increases when the old product becomes more expensive, and if the new product is, in fact, better than the old product, those that try the new good will switch over to it. Since the rise in the old product's price jeopardizes its market, its producers will not lightly risk a price increase. They will raise the price only when necessary, i.e., when costs rise, and if competition from the new product is especially severe, the price will not be raised even when costs rise.

In the case where the new product is clearly better than the old product, holding down the price of the old product will not keep the new one out of its market. The defense of existing markets will require more than just the tempering of increases in price. If the producers of the old product want to stop the invasion of their markets, they will not only have to hold down price, but also have to increase utility. They will have to carry out innovations that make the quality of their product comparable to that of the new one.

Insofar as the old product cannot be improved without an increase in the expenses of production, its improvement will reduce the net profit margins of its producers. And insofar as producers cannot carry out improvements without significant changes in the layout of their plants or equipment, the product improvement will increase investment in the product. Competition from the new product can heighten the "incentive to invest" in the old product, and squeeze its profit margin from the side of its costs as well as from the side of its price.

Interindustry competition, then, also alleviates the growth problems of the capitalist economy. It reduces profit margins and increases investment in old products. While the macroeconomic importance of this form of competition is not recognized by Steindl, it is suggested by his analysis of the connections between the competition of capitals and their expansion.

Notes

1. Just as a growth rate less than the warranted rate generates stagnation, a growth rate greater than the warranted rate produces infla-
tion. While for Harrod inflation is as likely as stagnation, it is not as likely for Steindl. The stagnation tendency is the dominant one. The reasons for its dominance are discussed below, in the section on oligopoly.

2. New firms enter the industry through the door of its marginal group. The members of this group are the ones whose markets can be invaded with the capital available to new entrants. It is because new entrants can meet the capital requirements of producing at the scale of the industry's marginal firms that the marginal firms earn, as a group, only "normal profits."

3. The preference for investment in their own industry is the result of the fact that investment in a new industry entails the "extra cost" of establishing a market (building "goodwill") and acquiring new technical know-how. This preference will be discussed further below, in note #7.

4. Steindl's determination of the profit margin was the first of a number of attempts to dynamize Kalecki's mark-up theory. It is formally similar to Kaldor's (1955-56) and Robinson's (1966) investment theory of the mark-up and the more recent post-Keynesian theory (see, in particular, Eichner, 1976). The major difference between these theories and Steindl's is the role that competition plays in the mark-up's adjustment to the growth rate of investment. In Kaldor's theory this adjustment occurs not because competition limits the profit margins of firms, but because full employment limits their output levels. The mark-up's adjustment to investment depends on the invariance of capacity utilization rates to changes in effective demand, and in the post Keynesian theory it depends on the presence of the oligopolist ("megacorp").

5. Steindl's work has inspired an extensive Marxist literature on the problems of monopoly capitalism. See Baran and Sweezy (1966) and Foster and Szlezajer (1984).

6. The firm would prefer investment in its own industry only if the industries it could diversify into were all mature industries. Diversification into a new industry not only improves the firm's growth prospects. It is also less difficult ("costly") than diversification into a mature one. For differences in the difficulty and desirability of entry into new and mature industries see Shapiro (1981).

7. See Shapiro (1986).

8. Not all the demand for the new product comes at the expense of the demand for old products. Some, as Levine (1981) emphasizes, comes at the expense of savings, the "uncommitted" portion of consumer or producer incomes. This uncommitted income is what new products compete over. For a discussion of the competition between new products see Levine (1981, pp. 137-145).
9. The progressive firm's "special sales effort" does not expand the market for its product because its product is a mature good. The assumption of a given industry growth rate, like the assumption of the firm's preference for investment in its own industry, holds only if the maturity of products is assumed.

10. For the determination of the mark-ups on new products see Levine (1981, pp. 165-175) and Shapiro (1981).

References


Steindl, Josef (1952), *Maturity and Stagnation in American Capitalism*, Basil Blackwell.