3 Pricing

Marc Lavoie

Introduction

Pricing in mainstream economics seems to be rather simple. For competitive firms no decision needs to be made; price is set by the market. Competitive firms then decide how much to produce by equating this price to marginal cost. In the case of a monopoly things are barely more complicated; the firm follows two simple rules—equate marginal revenue to marginal cost, and charge as much as demand warrants.

In both cases prices clear the market; everything produced gets sold. Moreover, prices reflect the scarcity of each good. If demand rises, prices rise. This follows from the assumption of diminishing returns; higher outputs induce higher marginal costs, and hence higher prices.

Post Keynesians view pricing as much more complex. Even if firms want to maximize profits, they only have approximate information about demand schedules; and knowledge about consumers is costly to obtain and uncertain. Firms also operate in a world of monopolistic competition and oligopolies. The environment is one of interdependencies; at any time rivals, actual or potential, may change their behavior and employ new strategies. In such an environment, short-run profit maximization is not possible to achieve. Moreover, profit maximization is an inappropriate goal for firms that strive to survive and want some power over their economic environment. Finally, the goals of firms and of their managers are multidimensional; as circumstances change, the weight given to various goals is revised and some goals need to be modified. In this complex world, business executives adopt simple rules, based on accessible data, that allow them to monitor financial results.

Cost-plus pricing is one of these rules. Cost-plus pricing means that firms fix prices based on some measure of costs, rather than as a reaction to demand fluctuations. As John Kenneth Galbraith (1952: 18) succinctly put it, pricing by custom is “an indispensable simplification of what otherwise would be an inordinately complex task.” It allows firms to fix prices according to the purpose at hand.

Cost-plus pricing prevails in most product and service markets. The only exceptions are those industries where output is produced in batches, as in some areas of agriculture, or where output is not easily reproducible, as in the art
market. In these cases, supplies cannot be quickly increased and adjustments are made through prices. In other industries, short-run fluctuations in demand have little effect on prices. An important feature of these markets is that their output is readily reproducible: if more refrigerators are needed, more refrigerators will be forthcoming. Firms usually operate with spare capacity because they want to respond quickly to any surge of demand or change in its composition, thus avoiding the loss of market share.

A related characteristic of markets based on cost-plus pricing is that marginal and average variable costs are approximately constant, while average total costs generally decrease. Greater demand therefore generates no increase in unit costs and creates no inducement for prices to rise. On the contrary, large volumes encourage firms to set lower prices, or at least not increase prices. Because of falling unit costs, there is no optimal firm size. Markets are dominated by a few large oligopolistic firms, around which sometimes gravitate a multitude of smaller firms that try to differentiate their product and acquire some local monopolistic power. More often than not, the large oligopolies will be price leaders, while the smaller firms adjust their cost margins to the prices set by industry leaders.

Varieties of cost-plus pricing

Cost-plus pricing comes in several variants, but these all share a few salient characteristics. First, prices are not indices of scarcity; rather they reflect costs of production. Hence, prices are cost-coverers and not resource-allocators. Second, entrepreneurs fix prices based on what they consider to be normal costs and then add a markup or costing margin. Third, prices are reproductive prices. They are not set as a one-shot profit-maximizing affair; rather, prices are set within a framework of repetitive transactions with purchasers and with the intent of financing future growth (Lee, 1985: 209). Fourth, prices are not market clearing. Costing margins are added ex ante, before the firm can find out what their costs or what the demand conditions really are. Prices are administered and are set before transactions take place. A large share of costs comes from intermediate inputs, whose prices may not be known with certainty when firms set their own prices. This interdependence of prices is another key feature of Post Keynesian pricing.1

The simplest cost-plus pricing procedure is the Kaleckian markup approach. With markup pricing, prices are assumed to depend on unit prime costs, also called "unit direct costs." These are direct labor costs, and the cost of intermediate goods and raw materials. Although there are subtle differences between prime costs and variable costs (variable costs include overhead labor costs, the salaries of supervisors, which could be avoided if a plant were to be closed down), for most purposes one can take variable, direct, and prime costs as synonyms. Since many authors assume that unit prime costs are constant up to or near full capacity, and since most firms try to avoid operating beyond full capacity, the level of capacity utilization at which these unit prime costs are
computed is of little importance. Markup pricing assumes that a gross margin is added to unit prime costs, thus yielding the price of the good.\(^2\)

While markup pricing remains quite popular among Post Keynesian macroeconomists, some authors (notably Lee, 1985; 1994) have argued that markup procedures are becoming less prevalent as a result of increasingly sophisticated accounting techniques. Whereas in the past, accountants had only rough estimates of unit fixed costs or of overhead costs (including depreciation costs), this is no longer the case. Most firms, large firms in particular, have accurate estimates of unit overhead costs and can attribute to each branch or product the overhead costs incurred.

A second approach to cost-plus pricing, full-cost pricing, was first presented by Hall and Hitch (1939). Using this approach, firms fix prices by taking into account all their costs and not just direct costs. The full-cost approach depends on actual unit costs.\(^3\) But since unit costs usually decline up to full capacity, full-cost pricing fell into disrepute because it meant that prices had to fall with rising production. As Robinson (1977: 11) notes, “the old full cost doctrine ... appeared to hold that prices of manufactures ... fall when demand increases because overheads are spread over a larger output.” This seemed too surprising to be accepted. In addition, full-cost pricing meant that actual unit costs (prime costs plus overhead costs) had to be known in advance, something thought to be impossible.

The pricing method now accepted is normal-cost pricing, described by Andrews (1949), Brunner (1952), and Andrews and Brunner (1975). Normal-cost pricing emphasizes that firms fix prices by adding a costing margin to unit costs that have been computed at some normal level of output (Lee et al., 1986: 24). Hence prices depend on some conventional measure of costs, the normal or standard cost.

Andrews (1949) presumed a gross costing margin was added to unit direct costs, assessed at some normal output. Andrews and Brunner (1975) recognized, however, that many larger firms would fix prices by adding a net costing margin to total average costs, estimated at normal output. More recently, normal-cost pricing has become associated with the latter rather than with the former view (Rowthorn, 1981: n. 4; Bhaduri, 1986: 76; Lee, 1994). Normal-cost pricing in its modern incarnation thus takes into account both direct and overhead costs, as in the full-cost approach, but computes unit costs at some conventional level of output.\(^4\)

Obviously, if actual unit costs are changing with output levels (in particular, total average costs usually decline with increased output), firms cannot know in advance what unit costs will be. Normal cost must thus be computed for some normal level of output, or some normal level of capacity utilization. Thus, to a certain extent, assessed unit costs are the result of a convention. Costing procedures are facilitated when some trade association sets these procedures, for instance the standard degree of utilization of current capacity that might be used to compute unit overhead costs. Managers need not know the value of unit costs for all output levels. They only need this value for the normal level of
output. In that sense, the exact shape of the various cost curves does not matter; and whether unit direct costs are constant or not becomes immaterial (Lee, 1994: 314).

A variant of the normal-cost approach is target-return pricing. This procedure was identified by Kaplan et al. (1958) in their study of large firms, but was also found to be used by a majority of smaller firms (Shipley, 1981: 430). In the target-return procedure, prices are set (given unit direct and indirect costs) to yield a target rate of profit on the capital assets of the company whenever sales correspond to the output produced at the standard rate of capacity utilization. As Lanzillotti (1958: 923) puts it, “margins added to standard costs are designed to produce the target profit rate on investment, assuming standard volume to be the long-run average rate of plant utilization.” Target-return pricing is thus the most sophisticated approach, for accountants must have a precise idea of the worth of capital or of the value of newly built plants.

Target-return pricing is also close to the Sraffian approach to prices, or what Nell (1988: 195) calls “benchmark prices.” In the canonical Sraffian model, which constitutes the main alternative to mainstream theories of relative prices, it is assumed that best-practice technological coefficients are calculated at standard levels of capacity utilization, and the rates of profit that are imposed upon fixed capital (or variable capital) are assumed to be uniform across industries. With non-uniform rates of profit, which correspond to the differentiated target rates of return of each firm or industry, and assuming that the technological coefficients are those of the firms that act as price-leaders, the Sraffian multisector price model becomes the relative prices version of the target-return pricing approach.  

Boggio (1992) has analyzed the properties of target-return pricing models within a system-wide model. His conclusion is that in these target-return pricing models the convergence of relative prices towards constant values requires few assumptions, in contrast to the conditions required to obtain convergence in standard Sraffian models. Many Post Keynesians, however, dispute the relevance of such studies, since convergence requires a large number of periods, during which time the assumed constant data set (production conditions and target rates of return) will likely change (Lee, 1994).

Since these various cost-plus pricing procedures are quite similar one may wonder which one is best. One answer is to be eclectic. Lee (1998: Ch. 12) constructs a multi-sector model, which he calls the empirical pricing model, with a mix of different pricing procedures: some industries relying on a markup approach, others on various specifications of the normal-cost approach and so on. Most macroeconomists prefer the markup approach because its simplicity allows them to tackle complex macro questions without the mathematics becoming impeded by a complicated pricing procedure. It is possible, however, to construct and run macroeconomic models using target-return pricing procedures, and some macroeconomists have done this, sometimes yielding results that can be distinguished from models based on simple markups (Lavoie, 1996, Lavoie and Ramírez-Gastón, 1997). This is particularly recommended.
Determinants of the markup

While Post Keynesians have long endorsed cost-plus pricing, mainstream economists have recently begun to make use of markup pricing. Mainstream authors using this rule of thumb usually point out that a markup over unit variable costs is consistent with profit maximization—the markup depends on the elasticity of demand and is set to equate marginal cost and marginal revenue. This interpretation can also be found in some earlier works of Kalecki and has been endorsed by Cowling (1982). On this view markup pricing appears to be profit maximization under conditions of imperfect competition, in a trial-and-error disguise.

There are two responses to this claim. First, a number of authors have pointed out that demand elasticities computed in empirical studies are inconsistent with this profit-maximizing interpretation of markup pricing. In particular, Koutsoyiannis (1984) found that for most industries the price-elasticity of demand is below one. This implies that marginal revenue is negative, which contradicts the hypothesis of profit maximization, for marginal costs cannot be negative. Second, accounting studies and economic surveys have shown that the most frequent pricing procedure is normal-cost pricing. But normal-cost pricing, in its modern incarnation, takes unit fixed costs or unit overhead costs into account, and not just marginal or variable costs. Normal-cost pricing and target-return pricing are thus incompatible with profit-maximizing neoclassical theories, since the latter presume that overhead costs or fixed costs play no role in the determination of prices.

If the markup does not depend on profit-maximization considerations, what does determine it? The target-return pricing approach offers the clearest answer to this question. Given unit variable costs, the markup over these direct costs will be higher, the higher the unit fixed costs. These may be broken down into fixed labor costs and fixed capital costs. The latter depend on the rate of capital depreciation, the target rate of profit, and the value of capital per unit of output or per unit of capacity output upon which this target rate of profit is applied. The higher the capital-to-capacity ratio, or the higher the incremental capital-to-capacity ratio (when only new additions to capacity are taken into account), the higher the markup over unit direct costs (Eichner, 1987: Ch. 6).

While there can be little disagreement on the relevance of the capital-to-capacity ratio, the determinants of the target rate of return are more controversial. Post Keynesians have offered three different answers.

A first answer is that the target rate of return is the normal rate of profit that entrepreneurs can hope to achieve as a result of competition among themselves and the power struggle involving labor. The more concentrated
the industry, and the less powerful the labor organizations linked to the industry, the higher the normal rate of profit for the industry. Fear of entry by new competitors is thus a major determinant of the target rate of return (Sylos Labini, 1962; Andrews, 1949). If capitalists identify profit rate differentials, and if they can enter and exit industries at will, these differentials should vanish. But since some degree of monopoly can usually be sustained, profit differentials can last for prolonged periods of time and hence be reflected in cost margins. Cost margins thus reflect class struggle and/or concentration ratios.

A second answer, which was quite popular when the first Guide to Post-Keynesian Economics came out, is that the target rate of return results from a compromise between two forces. On the one hand, to attract new customers, get rid of high-cost competitors, and forestall the entry of new rivals, firms would like the target rate to be as low as possible. On the other hand, capital accumulation cannot be sustained without profits and retained earnings (Steindl, 1952; Eichner, 1987; Wood, 1975; Kaldor, 1985; Capoglu, 1991). As Harcourt and Kenyon (1976) put it, pricing depends on the investment decisions of the firm; greater investment and future growth requires higher prices now. Because there is no optimal firm size, the current and future size of a firm depends on its success in innovating and marketing on the one hand, and on its access to finance for expanding capacity on the other hand. These opposing forces determine the target rate of return. For a given retention ratio, a higher expected secular growth rate should thus induce a higher target rate of return and hence higher costing margins.

This line of thought is consistent with the Cambridge growth models developed by Robinson and Kaldor in the 1950s. In these models, higher growth rates were accompanied by higher realized profit rates – a result of the higher profit margins generated by the improved demand conditions. Within an oligopolistic framework, the higher profit margins are not the result of demand and supply forces in the goods market; rather, they arise from the decisions of the price leaders about costing margins, on the basis of the improved prospects with regard to the secular growth rate.

A third explanation of the target rate of return arose over the last fifteen years, and has been mainly endorsed by a group of Sraffian authors, following suggestions made by Sraffa and Garegnani (Pivetti, 1985). They argue that the target rate of return, or what they call the "normal rate of profit," is determined largely by the real rate of interest that arises from the monetary regime of the central bank. The normal rate of profit is made up of two components – the rate of interest that needs to be paid to lenders, and the net entrepreneurial premium, which is a kind of liquidity premium, designed to compensate for the trouble and risk of engaging in entrepreneurial activity. While the entrepreneurial premium will vary from industry to industry, the rate of interest will be the same for all industries. High real interest rates, as existed during most of the 1980s and 1990s, would thus lead to higher target rates of return. Simply put, interest payments are seen as a cost to the firm, a cost that is incorporated into the target rate of return. Besides being held by
Sraffian authors, this view can also be found in Kaldor (1982: 63), who believed that "interest costs are passed on in higher prices in much the same way as wage costs," and Harrod (1973: 111), who thought that "sustained low rates of interest will presumably in the long run reduce the normal rate of profit."

Of course, there is no reason why we should not try to incorporate all three views of the determinants of the target rate of return into a single model (Lavoie, 1992: 109–18).

**Important complications**

It is evident that different plants and different firms in the same industry face different unit costs. Some firms are less efficient than others because they have older plants, which do not incorporate the latest technological developments. None the less, for products that can be compared, one usually observes fairly homogeneous prices. There is nothing surprising about identical prices under highly competitive conditions. Under oligopolistic conditions prices will tend to be identical because customers who discover that they got a bad deal would most certainly change suppliers (Andrews, 1949).

Since prices are identical while unit costs are not, all firms cannot entertain the same markup or the same target rate of return. There must be some price leader, or a group of leading firms, that sets the price for the industry. The price leader position can stem from greater market share or product innovation, or because its unit costs set the industry standard. Other firms (the followers) must adjust their cost margins and prices to the standard set by the price leaders. Kalecki (1971: 45) has long emphasized that the price set by an individual firm depends both on its unit costs and on the prices of other firms. Similarly, Andrews and Brunner (1973: 31) point out that firms with higher than average costs will not be able to set costing margins that provide a normal profit. The consequence of these cost differentials, as both Steindl (1952) and Kaldor (1985) stressed, is that price competition proceeds by reducing the profits of high-cost firms, thus impeding their ability to finance research and development and capacity-enhancing investments.

The issue of low-cost firms versus high-cost firms is particularly evident in industries open to foreign competition. Does cost-plus pricing still apply? Are prices in local markets still based on domestic unit production costs? Bloch and Olive (1995) show that the cost-plus approach is generally valid even in open economies. In industries with intense domestic competition, or where foreign competition is weak, foreign companies fix their prices based on the prices set by domestic companies. Foreign companies absorb the losses or rake in the profits associated with changes in exchange rates. In other words, domestic companies remain the price leaders. By contrast, in highly oligopolistic industries with strong potential foreign participation, foreign companies tend to "pass through" the changes in their unit costs and in exchange rates. The cost-plus approach must therefore be modified somewhat, with flexible costing margins taking foreign competition into account.
Also, it should be noted that the profit margin determinants outlined in the preceding section apply under normal conditions. What happens in expansion and in recession when there are fluctuations in demand? Two sets of empirical research offer contradictory evidence. At the aggregate level, researchers find evidence showing that demand fluctuations have an impact on inflation rates that goes beyond their impact on unit labor costs; as a consequence, they conclude that markups are pro-cyclical, moving up when demand is strong, as one would expect based on the standard laws of supply and demand (Atesoglu, 1997; Downward, 1999). On the other hand, at the sectoral level researchers find that real wages are pro-cyclical, rising when demand is strong (Bils, 1985; Barsky et al., 1994). They also find that markups and profit margins are counter-cyclical, moving in an apparently perverse manner. Finally, some studies find no significant relationship between demand fluctuations and the cost margins over normal unit costs (Coutts et al., 1978) or between demand variations and real wages (Kniessler and Goldsmith, 1987). How can these paradoxical sets of findings be reconciled?

Various answers can be advanced. First, aggregate studies may fail to pick up the pro-cyclical pattern of real wages because, in the upswing, the proportion of well-paid overhead labor is likely to fall while less-skilled labor enters the workforce. Since the latter workers earn relatively lower wages, aggregate data would erroneously give the impression that real wages have fallen or that markups have risen (Lavoie, 1996/97). Another possible answer is that the manufacturing sector, the subject of most studies at the microeconomic level, is more unionized than other sectors. Hence, during booms, labor unions in the manufacturing sector manage to obtain large increases in wages relative to labor productivity, thus leading to falling profit margins, something that may not be achieved in other sectors. In the aggregate, it may thus be observed that profit margins rise during the boom and fall during the recession, although the converse occurs in the manufacturing sector. Finally, Chevalier and Scharfstein (1996) provide another explanation of the counter-cyclical movement of profit margins in the manufacturing sector. They argue that firms rely on retained earnings to finance capital accumulation and feel liquidity constrained during recessions; they raise costing margins to relieve these liquidity pressures. During recessions, rates of capacity utilization are lower than normal and target rates of return are not achieved, thus leaving firms strapped for cash in order to fulfill past obligations and finance new investments.

**Policy implications and future research**

Several important policy implications follow from the Post Keynesian view of pricing. First, the Post Keynesian view of pricing offers an alternative to high unemployment as a means to achieve low inflation rates. Since large corporate firms administer prices anyway, there is no argument against price controls being administered by government authorities. As Galbraith puts in the 1980 introduction of his 1952 book, "it is relatively easy to fix prices that are already fixed."
Second, and this is perhaps the most obvious implication of Post Keynesian pricing theory, prices need not rise during expansions. Where commodities are easily reproducible, more can be produced at a constant unit cost or even at a lower unit cost. In addition, because firms do not necessarily attempt to clear markets, they need not push up costing margins during expansions. The only exception is goods whose production cannot readily be increased, such as raw materials and natural resources. These commodities are often basic goods, required by almost all manufacturing sectors. Raw materials thus constitute the weak point in any expansion, as noted by Kaldor (1976). Both Kaldor and Keynes (1938) proposed new international institutions that would set up buffer stocks and thereby limit fluctuations in world commodity prices. This would help avoid inflationary pressures during expansionary times, and would help governments maintain full-employment policies rather than anti-inflation ones.

To conclude, Post Keynesians rely on a pricing theory with strong links to the real world. Despite the fact that empirical research on pricing has been "stifled by operating within the framework of established theory" (Kaldor, 1985: 54), interviews, surveys, and econometric studies have shown that pricing based on profit maximization and production costs based on diminishing returns are both misguided hypotheses. Rather, firms face approximately constant unit variable costs, and they use cost-plus pricing procedures, often based on some target rate of return.

Future research still needs to ascertain the determinants of these target rates of return over the long haul. In particular, what is the impact of concentration ratios, potential competition, foreign competition, labor unions, productivity growth, secular growth rates in sales, and what is the role of financial variables, such as the rates of interest and debt or liquidity ratios? Field work and econometric research ought to help answer these questions. One reason they have not been provided as yet is that studies on cost margins have been carried out at the level of single products, while the determinants of target rates of return concern the enterprise as a whole.

Notes
1. These features of pricing can be found in the work of many authors who have influenced Post Keynesian economics. See Lee (1998) for the historical origins of these various Post Keynesian price theories.
2. In mathematical form, markup pricing is such that: \( p = (1 + \theta) DC/q \), where \( p \) is the price level, \( \theta \) is the gross cost margin, \( DC \) are direct costs, and \( q \) is the level of output.
3. The full-cost pricing procedure would yield: \( p = (1 + \theta) TC/q \), where \( \theta \) is the net-costing margin, \( TC \) are total costs, and \( q \) is the actual level of output.
4. The normal-cost pricing procedure, in its modern version, would yield: \( p = (1 + \theta) TC/Q \), where \( \theta \) is the net costing margin, \( TC \) are standard or normal total costs, and \( Q \) is the normal level of output.
5. Target-return pricing procedures use the formula already identified in the case of normal pricing, \( p = (1 + \theta) TC/Q \), but the costing margin is now explicitly defined as: \( \theta = r \cdot p/\{(w - r)y\} \), where the target rate of return is \( r \), \( y \) is the standard rate of capacity utilization, and \( v \) is the capital-to-capacity ratio. See Lavoie and Ramírez-Gastón (1997) for the application of such a formula within a two-sector model.
6. The main difficulty in this synthesis is that Sraffians define used capital as a joint production process, whereas most Post Keynesians would rather assume the more standard depreciation allowances (depreciation by evaporation).

7. The third component of the target-return pricing formula is the standard rate of capacity utilization.

8. This paper was presented at the 1998 Eastern Economic Association meetings. I am grateful for the comments received there, and also for those made by Harry Bloch, Paul Downward, Ric Holt, John King, Frederic Lee, Steve Pressman, and Mario Seccareccia. I believe these comments have improved the entry substantially. The usual caveats apply.

References


