

CHAPTER 5

Costing, Pricing, and Prices

Costing and Pricing

The process of setting prices within the business enterprise involves two steps. The first involves determining the costs which will be used as the base for setting the price and the second step is the actual setting of the price. The procedures used by the business enterprise employ to determine the costs that will be used in setting the selling price of a product before actual production takes place and hence the actual costs of production are known as costing. Derived from the management accounting procedures used by the enterprise, costing procedures are based on a estimated, normal, or standard volume of output or capacity utilization and can range from determining estimated enterprise average direct costs to determining the normal or standard average total costs which consists of normal average direct costs, average shop expenses, and average enterprise expenses, with average shop and enterprise expenses together being the enterprise's average overhead costs. The relevance of normal or standard capacity utilization in costing is that it enables the price administrators to determine costs. That is, since the enterprise's average direct costs, average overhead costs, and average total costs are different for different degrees of capacity utilization, it is necessary to selected a particular capacity utilization if costs for pricing are to be determined.

Pricing refers to the procedures the business enterprise

uses to set the price of a good before it is produced and placed on the market. That is, starting with the costs determined by its costing procedures, the business enterprise then adds a costing margin to costs or marks up the costs to set the price. Finally, the price is the enterprise's actual selling price which is determined via its pricing procedures and therefore is set before production and exchange takes place.

Besides the distinctions made above, there exists two general types of costing procedures, estimated costing and standard costing. In the former, costs are determined by methods that range from a perfunctory guess to a very careful computation based upon past experience; in either case, past costs are used as the basis to determine the costs of a good that will be produced in the future. In the latter, costs are determined by a process of scientific-fact finding which utilizes both past experience and controlled experiments and in advance of production. However, in spite of the differences, both estimated and standard costing arrive at the costs of producing a good that will be used in setting the price in the same way. Hence in the following discussion, reference will only be made to costing.

The activities of costing and pricing are carried out within the business enterprise by an individual, such as its owner, or by a committee made up of business administrators or managers drawn from different departments and levels of management. In either case, costing and pricing are activities which are administered by the administrators. Consequently, the kind of costing and pricing procedures used within the business

enterprise, including how depreciation and normal output or capacity utilization are calculated, are administratively determined. Moreover, the administratively determined prices are administered to the market, i.e. business enterprises utilize costing and pricing procedures as a method through which they can administer their prices to the market.¹ The administratively determined pricing procedures that will be the focal point of this chapter include mark up, normal cost, and target rate of return pricing.

Mark Up Pricing

Mark up pricing procedures consist of marking up enterprise average direct costs based on normal or estimated flow rate of output to set the price, with the mark up being sufficient to cover shop and enterprise expenses and produce a profit--see Table 5.1.

Table 5.1

Mark Up Pricing

mark up pricing: $[NADC][1 + k] = \text{price}$

where NADC is normal average direct costs;

k is the mark up for overhead costs and profits; and

kNADC is the gross costing margin.

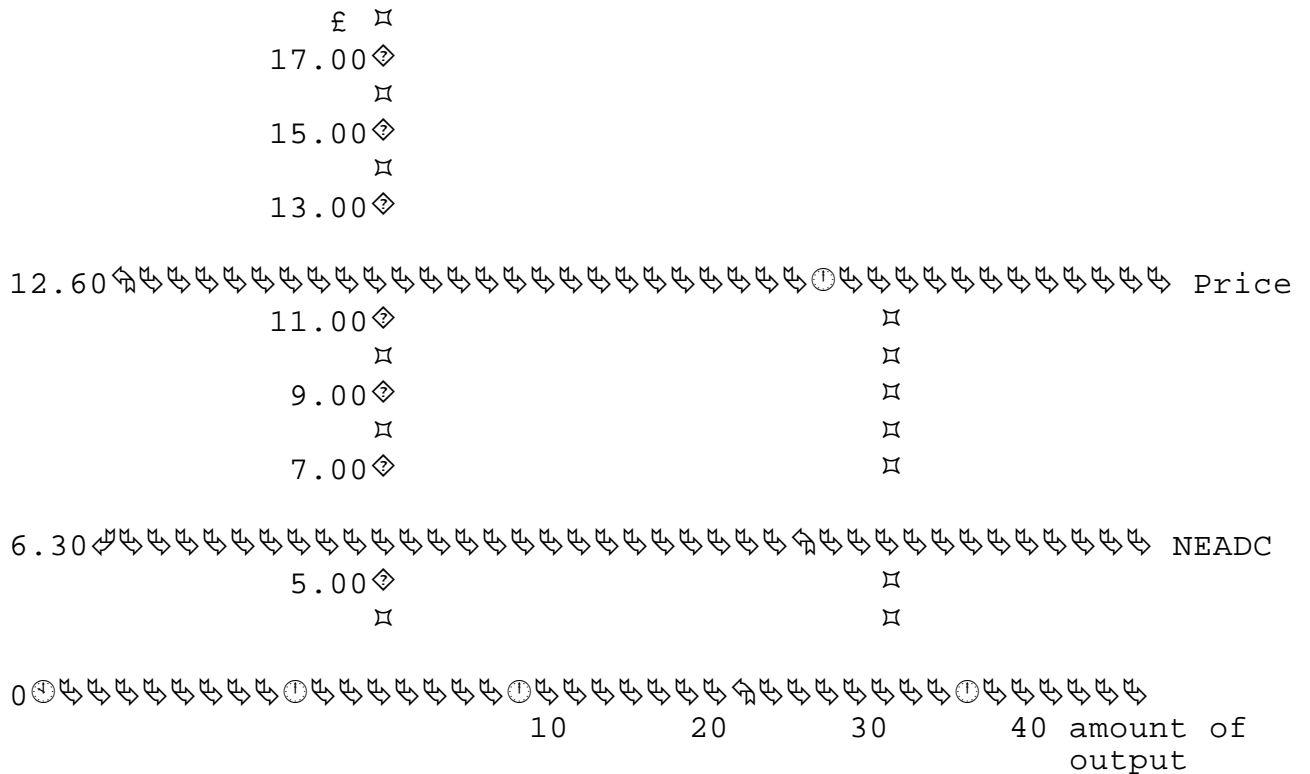
Because the actual output can differ from the normal output, the actual direct costs of production can differ from the normal

¹Not all administratively determined prices are based on costing procedures. In the case of destructive price wars, especially associated with rapid technical change and innovation, administrators frequently set and re-set prices without regard to costs. There are, of course, prices which are not administered, such as those found in auction markets and commodity exchanges.

direct costs and the actual gross profit margin can differ from the gross costing margin used when setting the price. Further, because prices are based on 'normal costs' they do not change when variations in the amount of output produce changes in average direct costs. Therefore, prices based on a 'normal output' approach to costing are designed to remain stable over successive production periods and variations in the actual amount of output. These points are summarized in Figure 5.1.

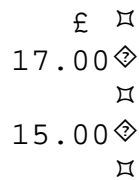
Figure 5.1

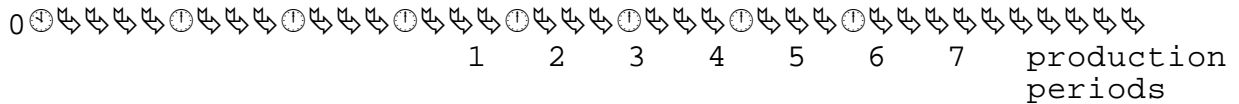
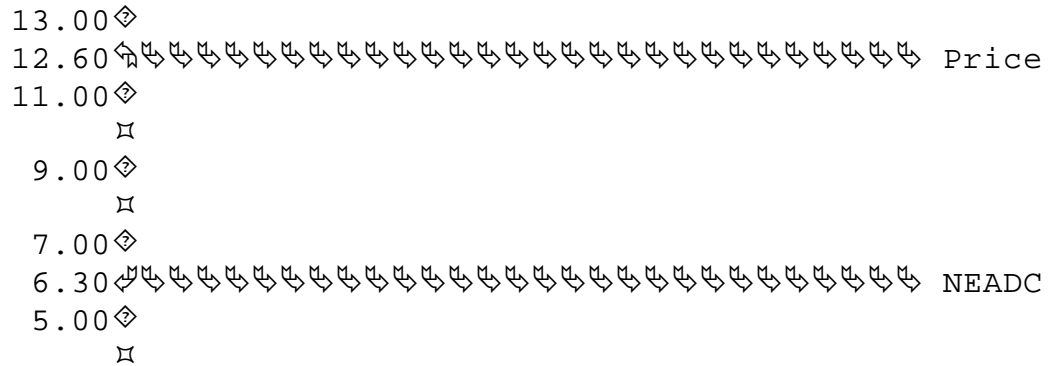
Mark Up Pricing
(a)
Static View



(b)

Sequential Production View





where normal flow rate of output is 30;

normal enterprise average direct costs is £6.30;

k the mark up for overhead costs and profit is 100%;

price = [NEADC][1 + k] = £12.60; and

gross costing margin is k[NEADC] = £6.30.

Normal Cost Pricing

Normal cost pricing procedures consist of marking up average enterprise direct costs based on normal output to cover shop expenses which gives normal average factory costs, then marking up normal average factory costs to cover enterprise expenses which gives normal average total costs, and then marking up normal average total costs to set the price, with the mark up producing a desired margin for profit--see Table 5.2. Because the actual

Table 5.2

Normal Cost Pricing

normal cost pricing: [(NEADC)(1 + g)][1 + h][1 + r] = price

[(NAFC)(1 + h)][1 + r] = price

[NATC][1 + r] = price

where NEADC is normal enterprise average direct costs;

NAFC is normal average factory costs;

NATC is normal average total costs;

g is the mark up for shop expenses;

h is the mark up for enterprise expenses;

r is the mark up for profit.

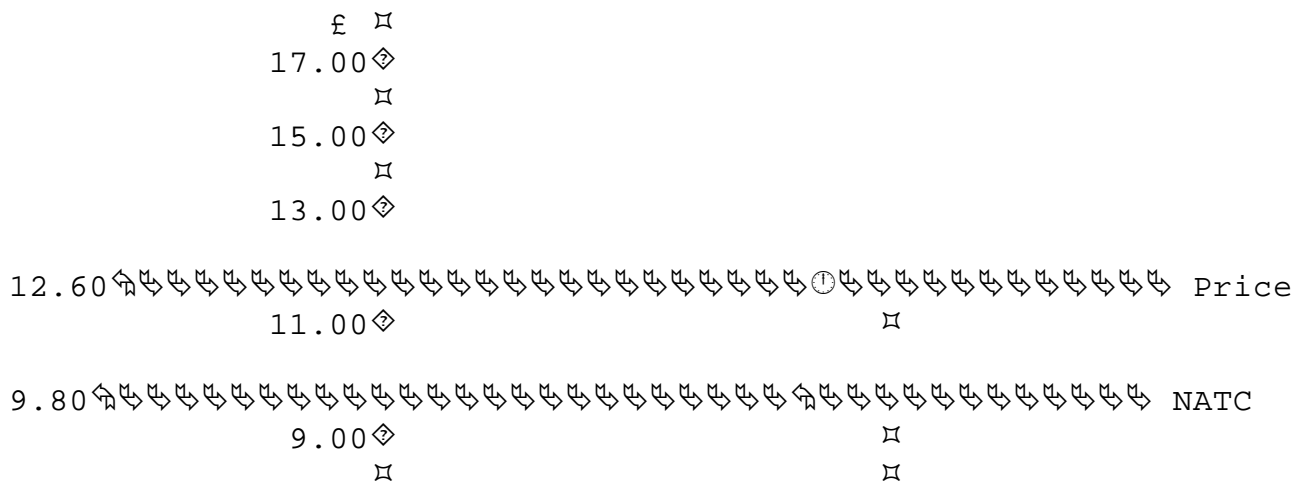
amount of output can differ from normal output, the actual 'costs' of production can differ from the normal 'costs' and the actual profit margin can differ from the costing margin used when setting the price. Further, because prices are based on 'normal costs' they do not change when variations in the flow rate of output produce changes in average direct, factory, or total costs. Therefore, prices based on a 'normal output' approach to costing are designed to remain stable over successive production periods and variations in the actual flow rate of output. These points are summarized in Figure 5.2.

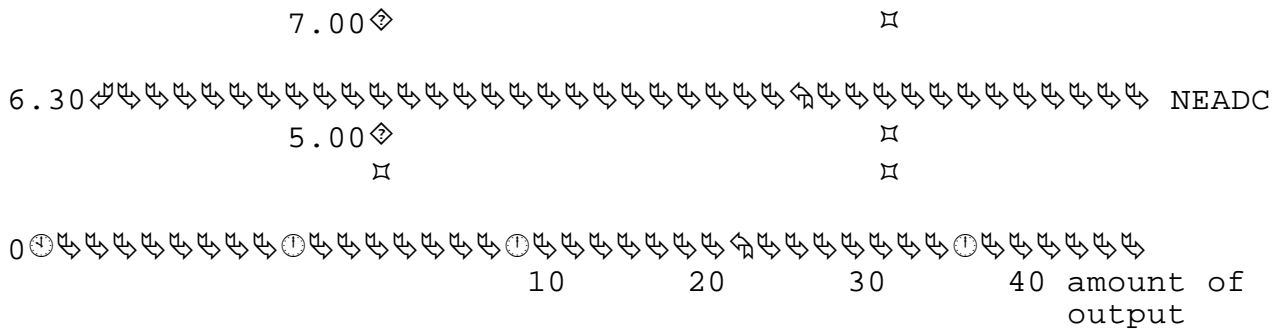
Figure 5.2

Normal Cost Pricing

(a)

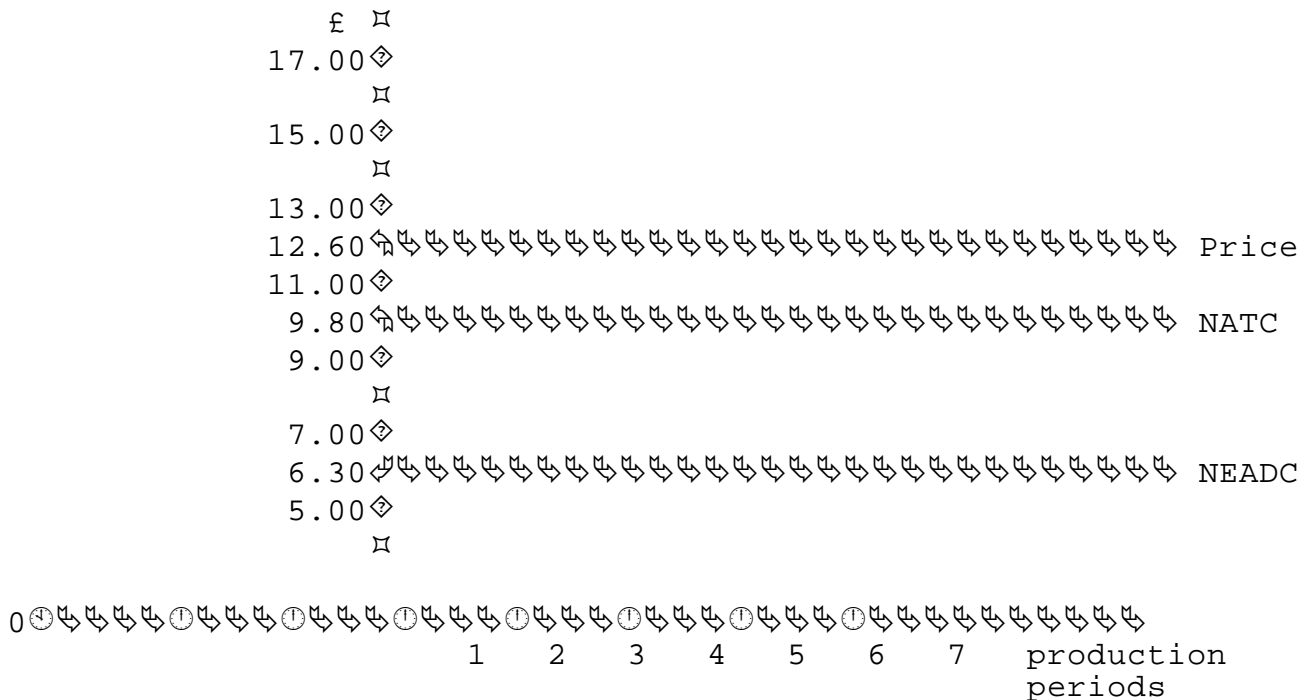
Static View





(b)

Sequential Production View



where normal flow rate of output is 30;

normal enterprise average direct costs is £6.30;

normal average total costs is £9.80;

r the mark up for profit is 28.6%;

price = [NATC][1 + r] = £12.60; and

costing margin is $r[\text{NATC}] = £2.80$.

Target Rate of Return Pricing

Target rate of return pricing procedures consist of marking up standard average total costs (which include shop and

enterprise expenses) by a certain percent that will generate a volume of profits at normal output which will produce a specific rate of return with respect to the value of the enterprise's capital assets connected with the production of the product. That is, given the value of the capital assets (VCA) associated with the production of the product, the pricing administrators are looking for a target rate of return (TRR) on those assets for the accounting period. Therefore, the amount of profits required over the accounting to meet the target rate of return is $TRR \times VCA = \text{target profits } P_t$. To incorporate the target profit figure into the price it is first necessary to divide P_t by the number of production periods f to get the targeted profits for each production period, p_t ; secondly to divide p_t by the normal output to the targeted costing margin, cm_t ; and then finally dividing cm_t by standard average total costs to get the targeted profit mark up, t --see Table 5.3. Given the targeted profit mark up, if the business enterprise produces at the normal

Table 5.3

Target Rate of Return Pricing

target rate of return pricing: $[SATC][1 + t] = \text{price}$

$$[SATC][1 + TRR \times VCA / f q_n SATC] = \text{price}$$

where SATC is standard average total costs;

t is the mark up for profit which will produce the target rate of return with respect to the value of the enterprise's capital assets; and

q_n is normal output.

output throughout the accounting period, enough profits will be

generated to attain the desired target rate of return on the capital assets. Since actual output can differ from normal output, the actual average total costs of production can differ from the standard average total costs and the actual profit margin can differ from the targeted costing margin used when setting the price. Consequently, business enterprise may not always achieve their target rate of return, sometimes being above it and other times being below it. Further, because prices are based on standard costs they do not change when variations in output produce changes in average total costs. Therefore, prices based on a normal output approach to costing are designed to remain stable over successive production periods and variations in the actual output.

Pricing and Cost Curves

Mark up, normal cost, and target rate of return pricing procedures have been used by large and small business enterprises under various competitive market conditions since before the 1930s; in fact, mark up and normal cost pricing procedures have been in used since the 1700s. However, since the 1930s normal cost and target rate of return pricing are the pricing procedures most used by business enterprises.² Still, whatever pricing procedures are used by the business enterprise, the implication is that the shape of the enterprise average direct cost curve or

²Costing and pricing studies indicate that many of the enterprises which utilized mark up pricing procedures restricted their usage to secondary pricing decisions and special cases, such as pricing by-products, sub-contracting, disposing of obsolete and out-dated products, and determining price floors in extreme price-cutting situations.

the average total cost curve for the product (in a static sense) is immaterial for pricing purposes. That is, the costs used for pricing are determined prior to production and are based on a normal output. Consequently, the shape of the enterprise average direct cost curve or average total cost curve is not important for price setting purposes. Instead what we have is a normal average total costs on which the price is based and actual average total costs varying around it as actual output varies around the normal output--see Figure 5.2 (b).

Pricing and Prices

Research has established that, in the United States, prices of most industrial and retail goods remain unchanged for extended periods of time and for many sequential transactions. Similar data for the United Kingdom economy--see Table 5.4--shows that prices of

Table 5.4

Frequency of Price Changes for U.K. Manufacture Products

for the period July 1987 to December 1991

	7/87-6/88	8/88-2/90	4/90-12/91
average number of products per month	9906	9443	10335
total possible number of price changes	118875	179420	217035
total number of actual price changes	17172	31194	33260
average number of months a product's price remains unchanged	6.9	5.8	6.5

UK manufactured products remain unchanged for extended periods of time. This result is further reinforced by various case studies

of business enterprises and industries where we find, for example, Lever maintaining the same retail price of his Sunlight soap for the period 1896 to 1906; and for the years 1896 to 1915 and 1920 to 1939, the price of sunlight soap changed only fourteen times or on average only once every thirty-two months. Other supporting evidence can be found in journalist publications where they report, for example, "a pledge from Marks & Spencer yesterday that most prices in its shops this autumn will be the same as, or lower than, last year laid down a high street marker for rivals" (The Guardian, 18 July 1992: 35). Finally, supporting evidence can also be garnered from one's daily activities, such as buying a national newspaper whose price has not changed for months and many millions of transactions or using a local launderette whose price for a wash has changed only once over an eighty month period.

Studies on pricing by business enterprises show that enterprises which used mark up, normal cost, and target rate of return pricing procedures adopted policies designed to maintain prices for the selling season and in face of fluctuations in sales. Thus, an essential facet of mark up, normal cost, and target rate of return pricing procedures is that enterprises use them to set prices that they intended to maintain for periods of time and many sequential transactions. One feature of stable, cost-based prices is that they are determined before transactions take place and are administered to the market, hence their name of administered prices. Consequently, markets which have stable, cost-based prices are not organized like auction markets or like

the early retail markets and oriental bazaars where the retailer engages in individual price negotiation for each transaction. Rather, enterprises which desire to enter these markets must first announce a price for its product and then enter into direct buyer-seller interaction to obtain sales. Since buyer-seller interactions take place both simultaneously and through time, business enterprises have found that stable prices are cost-efficient in terms of selling costs, reduce the threat of price wars, and facilitate the establishment of good-will relationships with customers. Moreover, in many instances, the competing enterprises establish institutions, such as trade associations, and press for changes in the legal system which would support their desire for market price stability, as also noted in the next section.³

A second feature of administered prices is they are set largely without reference to an inverse price-sales relationship. That is, in various studies of price determination, business enterprises stated that variations in their prices within practical limits, given the prices of their competitors, produced virtually no change in their sales and that variations in the market price, especially downward, produced little if any changes in market sales in the short term. Moreover, when the price change is significant enough to result in a non-insignificant

³In case of price wars, administered prices become more exchange-specific, as are prices in auction markets and before the one-price plan when retail prices were individually negotiated. However, it must be noted that price wars generally affects only a small part of the transactions and volume of sales in any particular market and the reduction in price is not very large.

change in sales, the impact on profits has been negative enough to persuade enterprises not to try the experiment again. The absence of any significant market price-sales relationship in the short term has been noted as well in various industry studies. Consequently, business enterprises do not utilize an inverse price-sales relationship when making pricing decisions and nor do they set their prices to achieve a specific amount of output for a single production period. Instead the prices they set are maintained for a variety of amounts of output over time. Rather, enterprises believe that sales are almost entirely a function of buyer income, level of aggregate economic activity, government demand for armaments, population growth, product design, and perhaps advertising.

The third feature of administered prices is that they change over time. As the evidence indicates, business enterprises maintain pricing periods of three months to a year in which their administered prices remained unchanged; and then at the end of the period, they decide on whether to alter them. The factors which are most important to the enterprises in this regard are changes in labor and material costs, changes in the mark up for profit, and changes in normal output that are based on expected future sales. Factors prompting the enterprises to alter their mark ups for profit include short-term and long-term competitive pressures, the stage at which the product has reached in its life cycle, and the need for profit. Consequently, administered prices can change from one pricing period to the next in any

direction, irrespective of the state of the business cycle.⁴ However, evidence does suggest that within short periods of time (such as two-year intervals), change in costs will dominate the price changes, whereas over longer periods of time changes in the mark up will play a more important role. The final feature of administered prices which is of interest is its role in the reproduction of the business enterprise--but this will be discussed in Chapter 7.

Terms

costing
 normal output/capacity utilization
 pricing
 costing margin
 estimated costing
 standard costing
 mark up pricing
 normal cost pricing
 normal cost pricing
 target rate of return pricing
 administered price
 gross costing margin
 profit margin
 exchange-specific price

Exercises and Questions

1. Data

	output	PCP
plant 1	12	£20.00
plant 2	10	£25.00
plant 3	8	£24.00
plant 4	8	£28.00
plant 5	5	£27.00

shop expenses per production period = £50.00

⁴Since the figure for the normal output is administratively determined, it is possible for business enterprises to alter it over the business cycle, resulting in the costed average total costs increasing in the downturn and decreasing in the upturn. If the mark ups for profit remain constant, then enterprises would be setting counter-cyclical or 'perverse' prices.

enterprise expenses for the accounting period = £75.00

value of the business enterprise's capital assets =
£2000.00

of production periods in the accounting period is 5

Questions

- (1) assuming the normal volume output is 30, determine the following: standard enterprise average direct costs, standard average shop expenses, standard average enterprise expenses, and standard average total costs.
 - (2) assuming that the business enterprise's target rate of return on its capital assets for the accounting period is 10%, determine the enterprise's price.
 - (3) assume that actual production in the first production period is 22, determine the enterprise's profit margin.
 - (4) assume that actual production for the business enterprise over the accounting is 22, 43, 38, 12, and 30 for a total of 145, determine the enterprise's actual rate of return.
 - (5) in making its pricing decision for the next accounting period, state how the enterprise would alter its price when faced with the following circumstances:
 - (a) increase in wage rates;
 - (b) decrease in prices of the material inputs;
 - (c) Congress permits enterprises to use an accelerated rate of depreciation;
 - (d) a recession is forecasted;
 - (e) the enterprise wants additional funds for investment; and
 - (f) the normal volume output is reduced to 22.
 - (6) assume a new plant comes on line whose output is 8 and technical cost of production is £10.00. Answer the following questions:
 - (a) assuming that the value of the enterprise's capital assets, shop expenses, and business enterprise expenses remain the same, what is the new price?
 - (b) given this new price, what will the enterprise do with the plant segment 5 and why.
2. Compare and contrast mark up pricing procedures, normal cost pricing procedures, and target rate of return pricing procedures. Also explain why the business enterprise would use such pricing procedures.
 3. Assuming increasing enterprise average direct costs and

decreasing average total costs, explain the role of normal output in establishing stable prices.

4. What is the difference between the costing margin and the profit margin? Under what conditions will the profit margin differ from the costing margin?
5. Compare an administered price and a exchange-specific price. Why does the exchange-specific price undermine the business enterprise's ability to reproduce itself?
6. What is the difference between costing and pricing?

7. Data

	output	PCP
plant 1	200	£300.00
plant 2	175	£325.00
plant 3	125	£275.00
plant 4	100	£275.00
plant 5	75	£250.00

shop expenses per production period = £400.00

enterprise expenses for the accounting period = £300.00

of production periods in the accounting period is 5

Questions

- (1) assume that the normal output is 500 and that $k = 2.167$, use mark up pricing to derive the price. In this case what is the gross costing margin. If actual output is 600, what is actual enterprise average direct costs and what is the gross profit margin and the net profit margin?
- (2) assume that production for the business enterprise over the accounting period is 500, 675, 375, 375, and 600, and working with the price in question (1), determine's the enterprise's gross profit margin and net profit margin at the end of the accounting period. Graph the variations in the enterprise's actual enterprise average direct costs vs. its normal enterprise average direct costs over the accounting period, and graph the variations in the enterprise's gross profit margin vs. its gross costing margin over the accounting period. Do the same for, average enterprise expenses, and average total costs for the accounting period.
- (3) assume that the normal output is 500 and that $r = 70\%$, use normal cost pricing procedures to derive the price. In this case what is the costing margin. If actual output is 375, what is actual average total costs and what is the net profit margin?

8. Data

plant	output	PCP
1	1	£ 5.00
2	1	£ 5.00
3	1	£ 8.00
4	1	£ 8.00
5	1	£ 8.00
6	1	£ 8.00
7	1	£14.00

shop expenses per production period = £30.00

enterprise expenses for the accounting period = £60.00

value of the business enterprise's capital assets = £440.00

of production periods in the accounting period is 4

normal output is 5

target rate of return is 10%

Questions

- (1) determine the enterprise's standard average total costs.
 - (2) determine the enterprise's price.
 - (3) if the enterprise's actual output declines to 4 units, what happens to the enterprise's profit margin? Why?
 - (4) if the enterprise's actual output increases to 7 units, what happens to the enterprise's profit margin? Why?
 - (5) in making its pricing decision for the next accounting period, state how the enterprise would alter its price when faced with the following circumstances:
 - (a) decrease in wage rates;
 - (b) increase in the prices of the material inputs;
 - (c) a recession is forecasted;
 - (d) the normal output is reduced to 4.
 - (6) if the enterprise wants to internally generate additional funds to be used to finance an increase in investment by £22.00, what must its new target rate of return be and how much will it have to raise its price?
9. Compare the costing and pricing procedures of normal cost pricing to the procedures used in neoclassical price theory to set the price. In what ways are normal cost prices

different from neoclassical prices?

Readings

1. Lee, F. S. 1994. "From Post-Keynesian to Historical Price Theory, Part I: Facts, Theory and Empirically Grounded Pricing Model," Review of Political Economy 6 (July): 303 - 336.
2. Lee, F. S. 1995. "From Post Keynesian to Historical Price Theory, Part II: Facts, Theory, and Empirically Grounded Pricing Model," Review of Political Economy 7 (January): 72 - 124.
3. Lee, F. S. 1998. The Foundation of Post Keynesian Price Theory. Cambridge: Cambridge University Press.