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The Modelling of Maximum Profit and Its Quantity with High Price in Stock Share on Economics III

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Abstract

The quantity is 833 in maximum profit and the maximum profit is 4166 Yuan. The PR changes from 1000 to 18,000 when Q is from 100 to 1600. TC is parabolic which maximum is 9000 with Q=1600 meantime the TR increases from 0 to 19,000 with Q =0~2600.

Keywords: Maximum profit; Its quantity; Modelling; Economics; Modelling; TR(total revenue); TC(total cost); MR(marginal revenue); AR(average revenue) ; PR(profit) ; MC(marginal cost); High price

Introduction

The economics modelling of maximum and its quantity has been established in order to investigate their intrinsic relationship. Meantime it is important to estimate the maximum of them in an enterprise manufacture and finance. In this study the stock share is searched to try to find the intrinsic relationship. For the sake of modelling the maximum profit and quantity in stock market the data is arranged to solve the constant of linear and parabolic equation. Only we know the price and quantity can the share be certain to do investment correctly. The base data is important to determine the constant to model. It will be discussed in detail because of its scientific method. It will give us convenience and rapidness & correct result to help us to determine the investment [1-8]. In short the maximum profit and quantity on stock market is been built in this study. Only if they are calculated can the further other relationship be drawn to discuss further their relationship. The reasonable and scientific value can be solved and other information can be gained for checking the right and more information.

Calculation Course and Discussions

When the condition has been given as 1000 share with cost 8.6 Yuan and price 15 Yuan the constant and equation will be completed which is exhibited below. The quantity is 830 in maximum profit and the maximum profit is 4166 Yuan according to the modelling equation. 100~1100 and 100~3600 is defined as below Figure 1-6 to discuss in detail. The former is actual condition and the latter is the predicted. They are fit well to modelling equation (Figure 1-3).

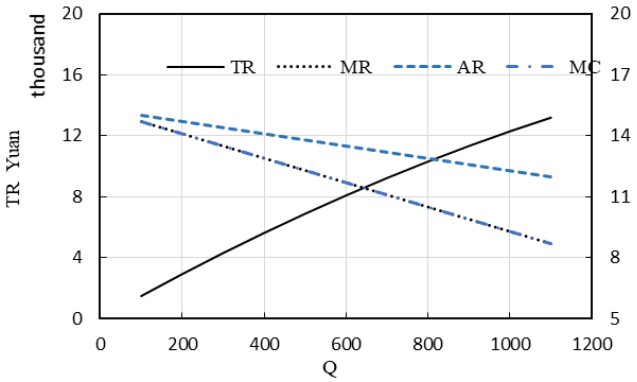

Figure 1: *The graph of TR, AR, MR and MC and Q=100~1100.*

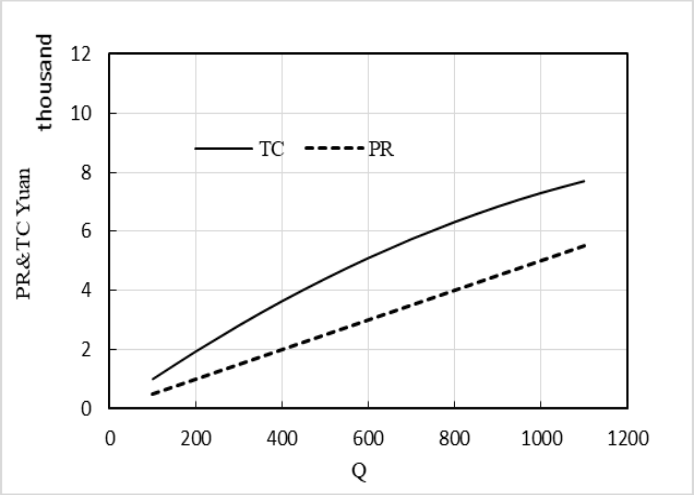

Figure 2: *The graph of Pr and TC & Q=100~1100.*

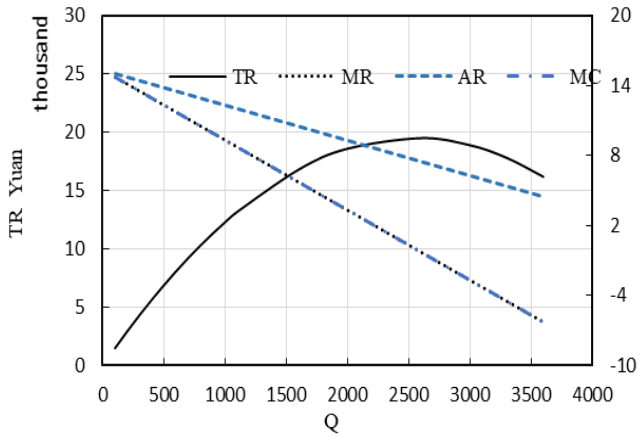

Figure 3: *The graph of TR, MR, AR and MC and Q=100~3600.*

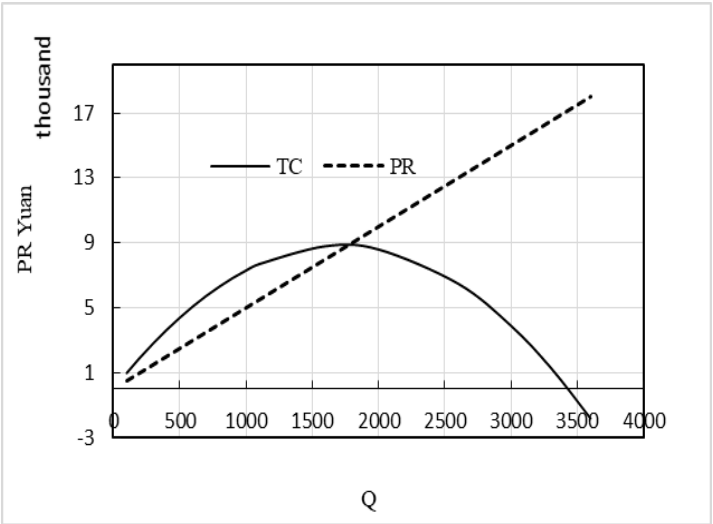

Figure 4: *The graph of PR and TC, Q=100~3600.*

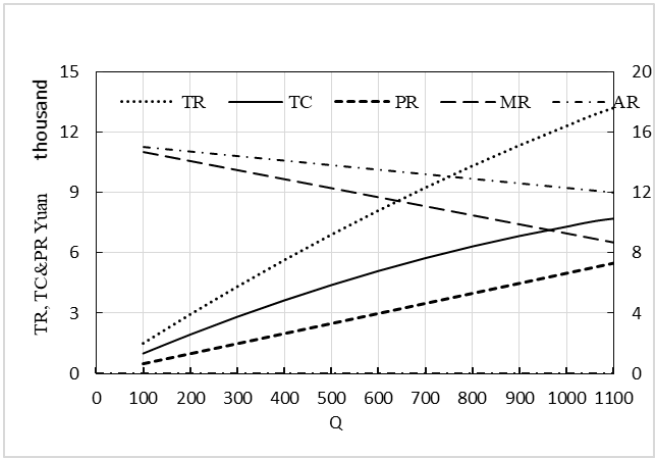

Figure 5: *The graph of TR, TC, PR, MR and AR and Q=100~1000.*

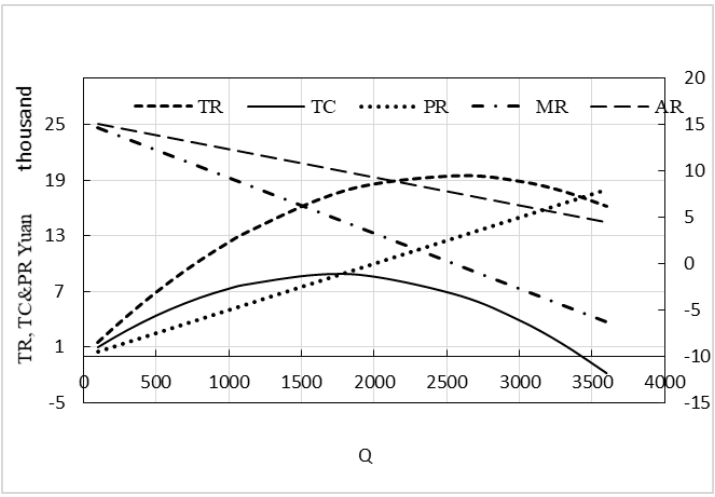

Figure 6: *The graph of TR, TC, PR, MR and AR and Q=100~3600.*

The TR increases when Q increases. TR changes from 1,500 to 13,800 when Q becomes from 100 to 1100. Meantime AR decreases from 15 to 12 when Q becomes the same in Figure 1. At last MR maintains15~9 MC is the same value to MR. from Figure 2 it is known that PR and TC will increase when the Q increases. The PR changes from 500 to 5000 when Q is from 100 to 1000 and TC becomes from 1,000 to 8000 when Q becomes from 100 to 1100. Figure 3 shows when the Q scope is 100~3600 the TR ad AR will increase along parabolic and decrease respectively. The TC attains the summit with 20,000 as Q=2600. Figure 4 shows TC is parabolic which maximum is 9000 with Q=1600 meantime the PR increase from 1000 to 18,000 with Q from 0 to 3600.

The modelling of maximum profit and it's quantity in this study has been built as following. To suppose the product demand function as

$$P = aQ + b \quad (1)$$

It has

$$a = \frac{P_1 - P_2}{Q_1 - Q_2} \quad (2)$$

So $b = p_1 - aQ_1$ (3)

To suppose the total cost function as

$$TC = aQ^2 + bQ + c \quad (4)$$

It has

$$b = \frac{(Q_1^2 - Q_2^2)(TC_1 - TC_3) - (Q_1^2 - Q_3^2)(TC_1 - TC_3)}{(Q_1^2 - Q_2^2)(Q_1 - Q_3) - (Q_1^2 - Q_3^2)(TC_1 - TC_2)}$$

$$a = \frac{-b(Q_1 - Q_2) + TC_1 - TC_2}{Q_1^2 - Q_2^2}$$

And (6)

So $c = TC_1 - aQ_1^2 - bQ_1$ (7)

Here P is the demand, Q is quantity, TC is cost, a、b &a、b、c is the constant.

The Figure 5 and 6 shows that the relationship between TR, TC, PR, MR & AR and Q with the part of 0~1000 and 0~3600. It is known that when Q=2700 the PR will be 19,000 Yuan which is higher than the result above. The extension curve TC, TR & PR will get summit at Q=1750 and 2600 from 8,000 &19,000.

Conclusions

The quantity is 833 in maximum profit and the maximum profit is 4166 Yuan. The PR changes from 1000 to 18,000 when Q is from 100 to 1600. TC is parabolic which maximum is 9000 with Q=1600 meantime the TR increases from 0 to 19,000 with Q =0~2600.

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