CHAPTER IX

CONCLUSIONS

The study models that are suitable for the case of gas fields in the Gulf of Thailand have been developed based on real cost, prices, and various geological and engineering data available since the beginning of gas field development in the Gulf of Thailand. Time series method has been used in predicting gas and condensate prices for use in the study. Based on available data, appropriate field sizes, production profile for each field size and development plan for each field size have also been proposed.

The effects of various economic parameters – cost change, cost and price escalation, and capital financing – on return to the concessionaire for each field size have been investigated. The results show that these economic parameters have some impact on the financial return to the concessionaire. Change in costs due to unexpected factor has considerable impact on IRR. From the results of this study, investment on gas fields of various sizes (0.5 TCF up to 2.0 TCF) which are feasible at normal cost become unfeasible when costs increase 25%. Escalation of costs and prices also has some effect on IRR. It is observed that the rate of increase in effect of escalation of costs and prices is lower at higher escalation rate. The study results reveal that means of financing a project has significant effect on IRR, much higher than the previous economic factor. In addition, the effect is more pronounced for larger field size.

From the investigation on the effect of Block Ringfencing concept on financial return to the concessionaire for various combination cases – two blocks and two fields, two blocks and three fields, and three blocks and three fields – the following conclusions can be drawn.

1. IRR's for cases with shorter lag time are higher than IRR's for cases with longer lag time especially for the cases of using Block Ringfencing concept. Effect of Block Ringfencing concept is more pronounced for the cases with longer lag time.

2. Effect of Block Ringfencing concept is more pronounced for the cases with partially financing by loan than for the cases with wholly financing by equity.

3. Effect of Block Ringfencing concept is approximately the same for cases with cost and price escalation rates of 3% and 5%.

4. Effect of Block Ringfencing concept is slightly higher when cost is lowered.

5. Generally, IRR's for the cases of not using Block Ringfencing concept are higher than IRR's for the cases of using Block Ringfencing concept.

The conclusions about effect of Block Ringfencing concept stated above are based on the assumption that royalty is calculated based on field by field basis and SRB is calculated based on the value of K for two blocks or three blocks of $2 \times 150,000$ or $3 \times 150,000$, respectively, for the non Block Ringfencing calculation. However, when SRB is calculated based on the value of K of 150,000 for both two blocks and three blocks cases, the conclusions are considerable different. That is, IRR's for the cases of using Block Ringfencing concept are higher than IRR's for the cases of not using Block Ringfencing concept. This is contrary to the cases that use K of $2 \times 150,000$ or $3 \times 150,000$. In addition, effect of Block Ringfencing concept is more pronounced for shorter lag time than for longer lag time. This is also opposite to the conclusion for

cases with K values of $2 \times 150,000$ and $3 \times 150,000$. From these results, it is expected that K can be used as one of the factors that have influence on IRR. From the result of this study, various recommendations are also given.