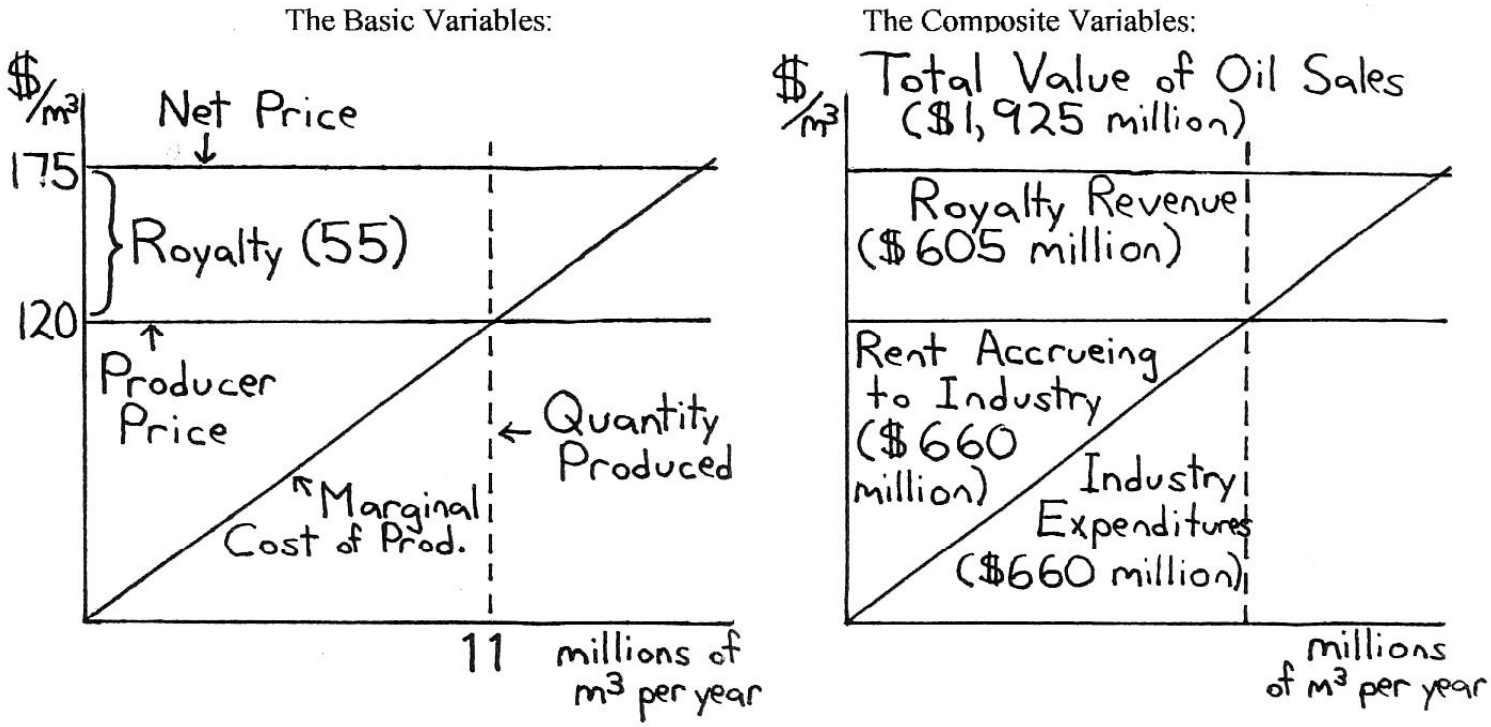
quantities of oil at a negligible marginal cost.

Given the price for which oil can be sold and the marginal cost of producing it, each actor in the model makes a decision. The government sets the oil royalty at a value between zero and the net price of oil. Based on the resulting producer price, the oil industry determines how much oil to produce. The amount of new drilling the industry will undertake is closely related to this.

The combination of these basic variables produces a set of composite variables. The net value of oil produced in Saskatchewan equals the net price multiplied by the quantity produced. Total royalty revenues collected by the Government of Saskatchewan equal the royalty per unit multiplied by the quantity produced. The oil industry's total expenditures in Saskatchewan equal the sum of the marginal costs of each unit of oil produced. The economic rent accruing to the oil industry is the sum of the differences between the producer price and the marginal cost of each unit of oil. The "royalty rate," referred to previously and subsequently in this paper, is equal to the per unit royalty divided by the net price, which is the same as total royalty revenue divided by the net value of production.

Numerical Diagram of Saskatchewan's Petroleum Sector



Note: The numerical values of the variables in this diagram nearly approximate the historical statistics for 1984. The diagrams were drawn by the author.

APPENDIX B: CONCEPTUAL DIAGRAMS COMPARING LOW, MODERATE, AND HIGH ROYALTIES