

PETROPOLITICS: PETROLEUM DEVELOPMENT, MARKETS AND REGULATIONS, ALBERTA AS AN ILLUSTRATIVE HISTORY

Alan J. MacFadyen and G. Campbell Watkins

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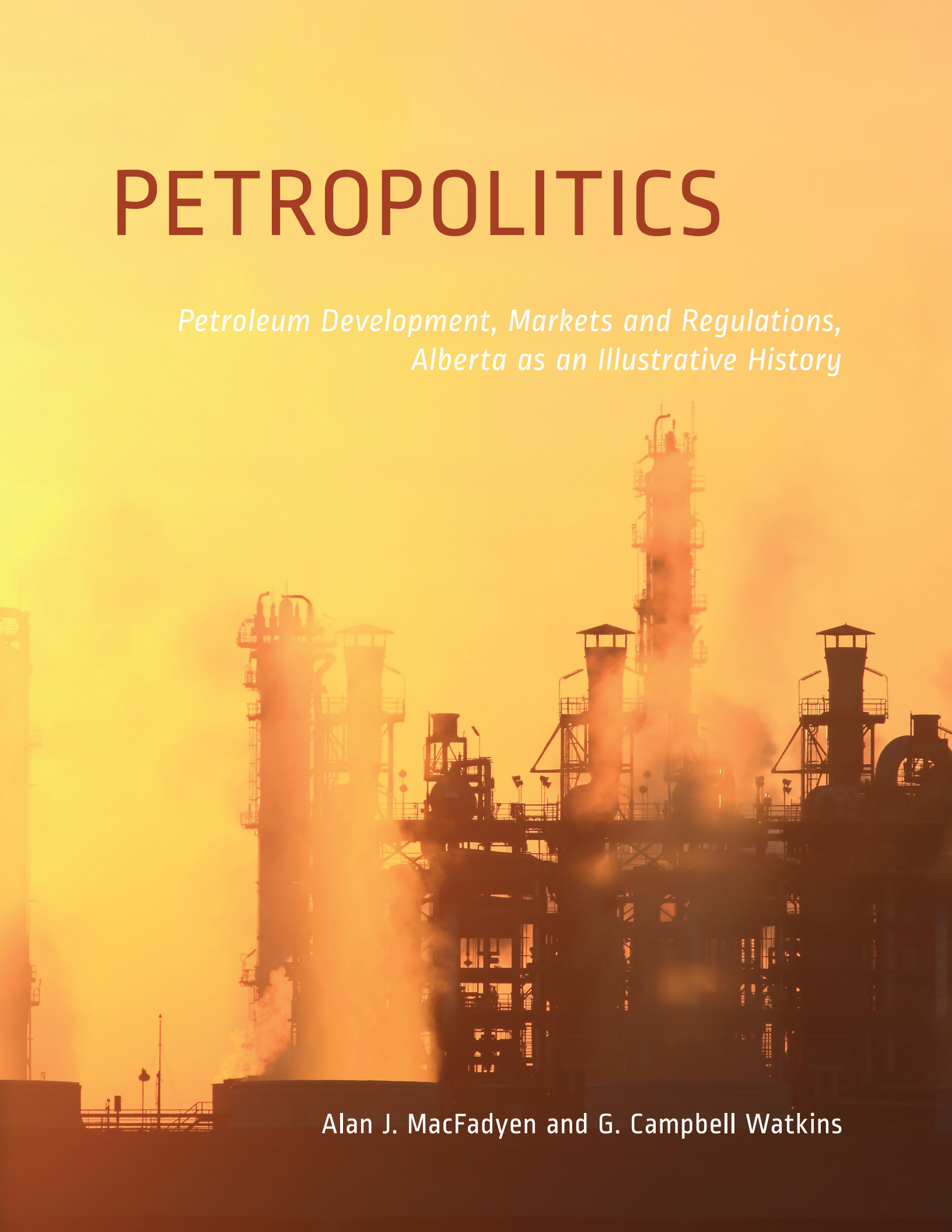
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A photograph of an industrial refinery or petrochemical plant, silhouetted against a bright, hazy orange and yellow sky, likely at sunrise or sunset. The image shows several tall distillation columns and complex piping structures. The overall tone is warm and industrial.

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To our children and, as always, to Heather

TABLE OF CONTENTS

List of Tables xiii

List of Figures and Maps xv

Acknowledgments xvii

Units and Abbreviations xix

Part One Overview 1

Chapter One: Petroleum and the Petroleum Industry: What Are They? 3

1. What Is Petroleum?

2. What Is the Petroleum Industry?

A. What Constitutes 'Upstream' Activity?

1. Exploration and Development

a. Geological and Geophysical Work and Land Acquisition

b. Exploratory Drilling

c. Development Drilling

2. Production (Lifting or Operation)

a. Primary Production Methods

b. Recovery Factor

c. Enhanced Oil Recovery (EOR) Processes

d. 'In Situ' Bitumen Recovery

e. Surface Mining of Oil Sands

f. Lifting of Crude Oil

g. Surface Treatment of Crude Oil and Gathering

B. What Constitutes 'Downstream' Activity?

1. Transportation

2. Refining

3. Marketing (Distribution)

C. How Is the Industry Organized?

3. What Are the Economic Aspects of the Petroleum Industry?

A. What Is the Economic View?

B. How Does the Economic View Reflect Physical Reality?

4. Conclusion

Chapter Two: An Overview of the Alberta Petroleum Industry 19

1. Introduction

2. Before the Boom: 1946

3. Alberta's Upstream Petroleum Industry

A. Exploration

1. Land Acquisition

2. Geophysical and Geological (G&G) Surveys

3. Exploratory Drilling

B. Development

C. Lifting (Operation or Extraction)

D. Government Activities in the Crude Petroleum Industry

1. Government Objectives

2. Government Policies

4. Alberta's Downstream Petroleum Industry

A. Transportation: Industry Activities

- B. *Transportation: Government Activities*
- C. *Refining and Marketing: Industry Activities*
- D. *Refining and Marketing: Government Activities*

5. Conclusions

Chapter Three: Alberta and World Petroleum Markets 35

1. Why World Markets Matter
2. Alberta's Role in the World Oil Market
3. Determination of World Oil Prices: History
4. Major Determinants of World Oil Prices
5. Conclusion

Chapter Four: Economic Analysis and Petroleum Production 53

1. Introduction
2. Supply and Demand
 - A. *Introduction*
 - B. *Supply*
 1. The Supply Curve
 2. Supply and Costs
 3. The Analytical Time Dimension
 4. Elasticity of Supply
 - C. *Demand*
3. Market Equilibrium in Perfect Competition
4. Normative Aspects
5. Market Equilibrium in Imperfectly Competitive Markets
 - A. *Monopoly*
 - B. *Monopsony*
 - C. *Oligopoly*
 - D. *Oligopsony*
 - E. *Bilateral Monopoly*
6. Applications to the Petroleum Industry
 - A. *Interrelations among Markets*
 - B. *Royalties*
 - C. *Production Controls*
 - D. *Export Controls*
 - E. *Price Ceilings*
 - F. *Export Tax*
7. Conclusion

Part Two: Overview 81

Chapter Five: Alberta's Conventional Oil Resources 83

1. The Concept of Reserves
2. Historical Reserves Additions
3. Ultimate Reserves Potential
4. Summary and Conclusions

Chapter Six: Crude Oil Output and Pricing 103

1. Introduction
2. Alberta Oil Production and Prices: The Data
3. Determination of Alberta Crude Oil Output and Prices
 - A. *Tentative Beginnings: Pre-1947*
 - B. *Market Penetration: 1947-60*
 1. Competitive Pricing Patterns
 2. Monopolistic Pricing Patterns
 3. What Pattern Evolved?
 4. The Oligopoly-Oligopsony Case
 - C. *The National Oil Policy and Covert Controls: 1961-73*
 1. The Borden Commission
 2. The National Oil Policy (NOP)
 3. Alberta Crude Oil Prices under the NOP
 4. Alberta Oil Output under the NOP
 - D. *Overt Controls: 1973-85*
 1. Price Controls
 - a. *Alberta Producer (Wellhead) Prices*
 - b. *Alberta Producer Prices: Price Differentials*
 - c. *Purchase Price for Alberta Oil: Domestic Sales*
 - d. *Purchase Price for Alberta Oil: Export Sales*
 2. Production under Overt Controls
 3. Conclusion
 - E. *Deregulated Markets: 1985-*
4. Crude Oil Market Structure
 - A. *Competition in the Alberta Oil Industry*
 - B. *Structure of the Canadian Crude Oil Industry*
 1. Concentration
 2. Foreign Ownership
5. Conclusion

Chapter Seven: Non-Conventional Oil: Oil Sands and Heavy Oil 141

1. Introduction
2. Early History
3. Resources, Reserves, Production and Costs
 - A. Resources and Reserves
 - B. Production
 - C. Costs
4. Government Policy in the Oil Sands
 - A. Mineral Rights
 - B. Approvals
 - C. Pricing
 - D. Government Take
5. Conclusion

Chapter Eight: The Supply of Alberta Crude Oil 171

1. Introduction
2. Concepts of Crude Oil Supply
3. NEB Supply Studies
 - A. The NEB Modelling Procedure
 - B. Potential Reserves Additions
 - C. WCSB Crude Oil Producibility
 1. Conventional Light Crude in the WCSB
 2. Conventional Heavy Crude in the WCSB
 3. Synthetic Crude
 4. Bitumen
 - D. Implied NEB Supply Elasticities
 - E. Conclusion
4. Direct Cost Estimation
 - A. Introduction
 - B. Costs of Specific Projects
 - C. Province-Wide Supply Costs
5. Indirect Supply Estimation
 - A. Introduction
 - B. Input Measures: Studies of Industry Expenditures
 - C. Output Measures: Studies of Reserves Additions or Production
 - D. 'Indirect' Estimation of Costs
6. Conclusions

Appendix 8.1: National Energy Board: Western Canadian Sedimentary Basin Oil Supply Forecasts

Part Three: Overview 221

Chapter Nine: Government Regulation: Trade and Price Controls 223

1. Introduction
2. Constitutional Responsibility over Petroleum
3. The National Oil Policy (NOP): 1961-73
 - A. The Policies
 1. Background
 2. The Borden Commission and the National Energy Board (NEB)
 3. The National Oil Policy
 4. The U.S. Oil Import Quota Program (USOIQP)
 - B. Economic Analysis of the NOP
 1. Effects of the NOP
 2. Normative Analysis of the NOP
 - a. Economic Efficiency of Crude Oil Markets
 - (i) Case 1
 - (ii) Case 2
 - (iii) Estimates of the Net Social Benefits (Losses) of the NOP
 - b. Other Effects of the NOP
 - (i) Equity (Distributional) Effects
 - (ii) Macroeconomic Effects
 - (iii) National Security and Resource Depletion
 - C. Conclusion
4. Strict Controls and the National Energy Program (NEP): 1973-85
 - A. The Policies
 1. Background
 2. Introduction of Strict Controls
 3. Strict Controls Before the NEP: 1973-1980
 - a. Price Controls
 - b. Export Controls
 4. The NEP: 1980-85
 - a. The NEP
 - b. 1981 Memorandum of Agreement
 - c. June 1982 Update
 - d. 1983-85
 - B. Evaluation of the Direct Control Period
 1. Effects of Direct Controls

- 2. Normative Analysis of Strict (Overt) Controls
 - a. *Efficiency of Strict Controls*
 - b. *Other Aspects of Strict Controls*

- 5. Deregulation and the Free Trade Era: 1985–
 - A. *Provisions of the Agreements*
 - B. *Implications of the Provisions*

6. Conclusion

Chapter Ten: Government Controls on the Petroleum Industry: Oil Prorationing 269

- 1. Introduction
- 2. Prorationing in Alberta
 - A. *The 1950 Plan*
 - B. *The 1957 Plan*
 - C. *The 1964 Plan*
 - D. *The End of Prorationing*
- 3. Optimum Well Spacing: The 1950 Alberta Proration Plan
 - A. *Well Quota and Profit Functions*
 - B. *Optimum Well Spacing, 1950 Plan*
 - C. *Comparison of Theoretical and Actual Well Spacing, 1950 Plan*
- 4. Optimum Well Spacing: The 1957 Alberta Proration Plan
 - A. *Well Quota and Profit Functions*
 - B. *Optimum Well Spacing, 1957 Plan*
 - C. *Comparison of Theoretical and Actual Well Spacing, 1957 Plan*
- 5. Efficiency of Production under Prorationing in Alberta: Intensive Diseconomies
 - A. *Intensive Diseconomies*
 - B. *Actual Intensive Diseconomies*
 - C. *Hypothetical Intensive Diseconomies*
- 6. Summary and Conclusions
 - A. *Analysis of Prorationing in Alberta*
 - B. *Efficiency of Prorationing in Alberta*
 - 1. Extensive Diseconomies
 - 2. Intensive Diseconomies
 - 3. Market Equilibrium
 - C. *Conclusion*

Appendix 10.1: A Reservoir Investment Model under Proration in Alberta

Chapter Eleven: Economic Rent and Fiscal Regimes 289

- 1. Introduction
- 2. Conceptual Matters
 - A. *Governments and Economic Rent*
 - 1. *Quasi Rents*
 - 2. *Ex Ante and Ex Post Profits*
 - 3. *Allocative Role of Economic Rents*
 - B. *Policy Instruments*
 - 1. *Two Methods Not Adopted*
 - 2. *Financial Instruments Actually Used*
 - a. *Competitive Bonus Bid*
 - b. *Land Rental*
 - c. *Ad Valorem Royalty, Sliding-scale Based on Output*
 - d. *Ad Valorem Royalty, Sliding-scale Based on Price*
 - e. *Corporate Income Tax*
 - f. *Conclusion*
 - 3. *Non-Financial Conditions Attached to Mineral Rights Issue*
 - a. *Acreage*
 - b. *Work Commitments*
 - c. *Duration*
 - d. *Timing of Sales*
 - e. *Open Access and Petroleum Exploration*
 - C. *Conclusions*
- 3. Alberta Government Policy
 - A. *Introduction*
 - B. *Alberta Regulations*
 - 1. *Pre-1930*
 - 2. *1930–47*
 - a. *Royalties*
 - b. *Issuance of Rights*
 - (i) *Leases*
 - (ii) *Exploratory Permits*
 - (iii) *Crown Reserves*
 - (iv) *Bonus Bids*
 - c. *Conclusion*
 - 3. *1948–73*
 - a. *Royalties*
 - b. *Issuance of Rights*
 - (i) *Production Rights*
 - (ii) *Exploration Rights*
 - (iii) *Crown Reserves*
 - (iv) *Bonus Bids*
 - c. *Conclusion*
 - 4. *1974–2012*
 - a. *Royalties*

- b. Issuance of Rights
- c. Incentive Schemes
- d. Conclusion

4. Federal Regulations

A. Pre-1973

B. 1973-1985

1. 1973-1980
2. The NEP: 1980-85
 - a. Incentives
 - b. New Federal Taxes
 - c. Impact of Regulations
3. 1985-2007

5. Conclusion

Appendix 11.1: Alberta Crude Oil Royalty Regimes, 1951-2012

A. Royalty Regulations

B. Comparative Royalty Payments

C. Royalty Inefficiencies

1. Investment Diseconomies
2. Output Timing Inefficiencies
3. Pool Abandonment Inefficiencies

Part Four: Overview 349

Chapter Twelve: The Alberta Natural Gas Industry: Pricing, Markets, and Government Regulations 351

1. Introduction

2. Natural Gas Production and Pricing

A. Resources and Reserves

B. Production and Delivery

C. Prices

1. Market Expansion, 1947-71
2. A Digression on 'Commodity Values'
3. Price Controls, 1972-86
 - a. Domestic Prices
 - b. Export Prices
4. The Deregulated Era, 1986-

3. Alberta and Canadian Natural Gas Protection Policies

A. Development of Alberta Policy

1. The Dinning Commission and Early Alberta Legislation
2. Initial Policy of the Alberta Conservation Board
3. Policy Developments in the 1950s

4. Policy Changes in the 1960s

a. 1966 Changes

b. 1969 Changes

5. Policy Changes in the 1970s

a. Natural Gas Pricing and Removals

b. 1976 Changes

c. 1979 Changes

6. Post-1979 Legislative and Policy Resonances

7. The 1987 Alberta Surplus Test

B. Development of Federal Policy

1. The Legal Framework

2. Initial Policy and Policy Changes in the 1960s

3. Policy Changes: The Formula in 1970

4. The 1979 Changes

5. The 1982 Policy Change

6. The 1986 Policy Change

7. Mandated Surplus Test Abandonment, 1987

C. Economic Analysis of Natural Gas

Protection Policies

1. Reserves and Supply

2. Analytics of Gas Export Limitations

3. Impacts of the Gas Protection Policies

4. Price Controls and Other Market Regulations

A. Market Regulations

1. Domestic Pricing

2. Export Pricing

3. Free Trade (FTA and NAFTA)

B. Analysis of Natural Gas Pricing Regulations

1. Domestic Pricing

2. Export Pricing

C. Fiscal Take (Royalties and Taxes)

1. Alberta Crown Royalties

2. Natural Gas and Gas Liquids Tax (NGGLT)

5. Conclusion

Chapter Thirteen: The Petroleum Industry and the Alberta Economy 407

1. Introduction

A. Cyclical Effects

B. Growth Effects

2. Models of Economic Growth

A. Concepts

B. Models of Growth

1. Export Base Models

2. Closed Economy Models

a. Keynesian Models

b. Neoclassical Models

3. Open Economy Models	
4. Natural Resource Models	
a. <i>Boom and Bust Models</i>	
b. <i>Industrial Diversification and the 'Dutch Disease'</i>	
3. The Petroleum Industry in the Alberta Economy	
A. <i>The First Ten Years: Eric Hanson's Dynamic Decade</i>	
B. <i>The Role of the Petroleum Industry</i>	
1. Background and the Alberta Economy	
a. <i>Alberta's Economic Development, 1947-2012</i>	
b. <i>Other Analysts' Descriptions of the Alberta Economy</i>	
2. Petroleum's Contribution to GDP	
3. Petroleum's Contribution to Employment	
4. Conclusion	
C. <i>Diversification</i>	
1. Introduction	
2. The Extent of Economic Diversification in Alberta	
3. Alberta Government Policies	
D. <i>The Macroeconomic Costs of the National Energy Program and Net Provincial Transfers to the Rest of Canada</i>	
E. <i>Economic Equalizers: Migration and Input Price Changes</i>	

F. <i>Government Revenues and Expenditures</i>	
G. <i>The Heritage Fund and Preserving the Income from Depleting Capital Assets</i>	
4. Conclusion	

Chapter Fourteen: Lessons from the Alberta Experience 451

1. Introduction	
2. Factors Related to Physical Aspects of Petroleum	
A. <i>Uncertainty and Exploration</i>	
B. <i>The Reservoir as a 'Natural' Unit</i>	
C. <i>The Significance of Depletability</i>	
3. Factors Related to Petroleum Markets	
A. <i>Second-Best Considerations</i>	
B. <i>Fairness</i>	
C. <i>Macroeconomic Stability</i>	
D. <i>Regional Development</i>	
4. Factors Related to the Sharing of Economic Rent	
5. Conclusions	
Notes and References 463	
Index 479	

LIST OF TABLES

Table 1.1. Petroleum Industry Activities: Physical and Economic Aspects	16
Table 2.1. Selected Statistics for the Alberta Crude Oil Industry	20
Table 2.2. Alberta Government Petroleum Revenues	28
Table 2.3. Sales of Alberta Petroleum by Region	30
Table 2.4. Alberta Oil Refining	32
Table 2.5. Alberta's Primary Energy Consumption by Fuel	32
Table 3.1. World Oil Reserves and Production, 2010	39
Table 5.1A. CAPP Canadian Conventional Established Oil Reserves, 1951–2009	86
Table 5.1B. Canadian Liquid Established Oil Reserves, December 31, 2009	87
Table 5.2. EUB Conventional Crude Oil Reserves and Changes, 1947–2012	89
Table 5.3. Alberta Conventional Oil Reserves by Geological Formation, End of 2007	92
Table 5.4. Alberta Light and Medium Oil Reserves and Potential by Play: GSC 1987	94
Table 5.5. GSC Estimates of Ultimate Crude Oil Potential	99
Table 5.6. NEB Estimates of Ultimate Conventional Crude Oil Potential in Western Canada	100
Table 5.7. ERCB Estimates of Alberta Ultimate Conventional Crude Oil Potential	101
Table 6.1. Alberta Oil Production and Sales, 1914–2012	105
Table 6.2. Alberta Crude Oil Prices, 1948–2013	107
Table 6.3. Crude Oil Prices under Overt Controls, 1973–85	123
Table 6.4. Canadian Crude Oil Exports and Export Taxes, 1973–85	125
Table 6.5. Alberta Netbacks from Foreign Crudes	127
Table 6.6. Concentration in Canadian Crude Oil Output	131
Table 6.7. August Nominations for Alberta Crude Oil	134
Table 6.8. Foreign Ownership and Control in the Canadian Petroleum Industry, 1971–2007	138
Table 7.1. Alberta Oil Sands Production, 1967–2012	149
Table 7.2. Oil Sands Royalties, 1968–2012	165
Table 8.1. Implied Oil Supply Elasticities in NEB Reports, 1984–99	178
Table 8.2. CERl Alberta Oil Model: Forecast Oil Production	181
Table 8.3. NEB Supply Costs for Non-Conventional Oil	185
Table 8.4. Eglington and Nugent Supply Costs for EOR Projects	187
Table 8.5. Eglington and Uffelman Supply Costs of Reserves Additions	188
Table 8.6. McLachlan's CERl Reserves Addition Costs	189

Table 8.7. Quinn and Luthin CERI Reserves Addition Costs by Company Size	191	Table 9.1. Crude Oil Costs under the NOP	235
Table 8.8. Uhler and Eglington Oil Wellhead and Reserves Prices and Development and Operating Costs	195	Table 9.2. Economic Efficiency of the NOP: Two Cases	238
Table 8.9. Estimated Coefficients in the Scarfe/Rilkoff Oil Expenditure Model	196	Table 9.3. Average Annual Prices of Oil in the Overt Control Period	259
Table 8.10. Out of Period Forecast Based on the Scarfe/Rilkoff Model	198	Table 9.4. Efficiency Costs of Overt Controls	261
Table 8.11. Uhler and Eglington: Coefficients of Reserves Additions Equations and Possible Reserves Additions	206	Table 11.1. Alberta Government Revenue from Petroleum, Fiscal years, 1930/31–1947/48	307
Table 8.12. ERCB Oil Reserves by Formation, 1976 and 1999	207	Table 11.2. Payments to the Alberta Government, Fiscal years 1947/8–2011/12	311
Table 8.13. Foat and MacFadyen Model of Oil Discoveries in Nine Alberta Oil Plays	208	Table 11.3. Rental Shares for Two Hypothetical Alberta Oil Pools under Six Different Fiscal Regimes (Copithorne, MacFadyen, and Bell)	335
Table A8.1. National Energy Board Reports: WCSB Potential Reserves Additions	214	Table 11.4. Kemp’s Rental Shares under Different Cost Conditions and Fiscal Regimes	336
Table A8.2. National Energy Board Reports: Productive Capacity of WCSB Conventional Light Crude	215	Table 11.5. Kemp’s Government Rent Shares for a \$5 million Exploration Program under Four Different Fiscal Regimes at High and Low Prices	337
Table A8.3. National Energy Board Reports: Productive Capacity of WCSB Conventional Heavy Oil	216	Table 11.6. Flow Rent Shares under Four Regulatory Regimes, 1974, 1981, and 1986 (Helliwell et al.)	338
Table A8.4. National Energy Board Reports: Production of Synthetic Crude	217	Table 12.1. Alberta Natural Gas Reserves, Production, Deliveries and Prices, 1947–2012	353
Table A8.5. National Energy Board Reports: Production of Bitumen	218	Table 12.2. Regulated Natural Gas Prices, 1975–85	364
Table A8.6. Price Sensitivity Cases	219	Table 12.3. Relationship between Natural Gas and Crude Oil Prices, Toronto, 1970–87	390
		Table 12.4. Natural Gas Export Pricing: Netbacks and Elasticities	401

LIST OF FIGURES AND MAPS

- Fig. 1.1. Types of Petroleum 15
Fig. 1.2. Petroleum in the Economy 17
- Fig. 3.1. International Oil Flows and Prices 36
Fig. 3.2. World Crude Oil Prices, 1861–2010 40
Fig. 3.3. OPEC Share of World Crude Oil Output, 1965–2010 48
- Fig. 4.1. The Supply Curve for Crude Oil 55
Fig. 4.2. The Supply Curve for Reserves Additions 57
Fig. 4.3. Short-, Medium- and Long-run Supply Curves for Crude Oil 57
Fig. 4.4. Crude Oil Supply: One Pool 59
Fig. 4.5. Crude Oil Demand 61
Fig. 4.6. Market Equilibrium 63
Fig. 4.7. Monopoly in the Crude Oil Market 68
Fig. 4.8. The Small Region in International Trade 72
Fig. 4.9. Crude Oil Royalties 74
Fig. 4.10. The Rule of Capture and Prorationing 76
Fig. 4.11. Oil Export Controls 77
Fig. 4.12. Oil Price Control 78
- Fig. 5.1. Alberta Conventional Oil Reserve Additions per Well Drilled, 1950–2009 91
Fig. 5.2. Main Alberta Oil Plays 92
Map 5.1. Six Major Alberta Conventional Crude Oil Plays and Three Oil Sands Areas 93
Fig. 5.3. Leduc Play: Reserves by Year of Discovery 95
- Fig. 6.1. Oil Price Differentials 109
Fig. 6.2. Alberta Crude Oil Market Penetration 112
- Fig. 7.1. Unit Oil Sands Operating Costs and Royalties, 1968–2011 153
Fig. 7.2. Bitumen Price Differentials, Jan 2002–December 2011 163
- Fig. 8.1. Models of Oil Supply 173
Fig. 8.2. Reserves Additions: Discoveries and Effort Approaches 192
- Fig. 9.1. Canadian Oil WORV under the NOP 233
Fig. 9.2. Canadian Oil under the NEP 257
- Fig. 11.1. Petroleum Rent 295
Fig. 11.2. Bonus Bid 296
Fig. 11.3. Land Rental 297
Fig. 11.4. *Ad Valorem* Sliding-Scale Royalty (Output) 298
Fig. 11.5. *Ad Valorem* Sliding-Scale Royalty (Price) 299
Fig. 11.6. Corporate Income Tax 300
- Fig. 12.1. Commodity Pricing of Natural Gas 359
Fig. 12.2. Natural Gas: Economic and Beyond Economic Reach Reserves 384
Fig. 12.3. Natural Gas Supply 384
Fig. 12.4. Natural Gas Export Limitations 385
- Fig. 13.1. Population Growth, 1947–2010 419
Fig. 13.2. Alberta and Saskatchewan Relative Population, 1947–2010 420
Fig. 13.3. Canada, Alberta and Saskatchewan Real GDP, 1951–2009 421

- Fig. 13.4. Unemployment Rates: Canada, Alberta and Saskatchewan, 1947–2012 422
- Fig. 13.5. Relative Per Capita GDP, PI and PDI: Alberta and Saskatchewan, 1947–2010 422
- Fig. 13.6. Canada and Alberta % Change in Real GDP, 1952–2009 424
- Fig. 13.7. Industry Shares in Alberta GDP, 1961–1971 426
- Fig. 13.8. Alberta Industry Shares in GDP, 1971–2008 426
- Fig. 13.9. Shares in Alberta Manufacturing, 1971–2002 427
- Fig. 13.10. Indices of Real Oil and Gas Prices and Output, 1947–2011 428
- Fig. 13.11. Alberta % Changes in Population and Real GDP, 1949–2011 440
- Fig. 13.12. GDP Change and Net Migration, 1971–2011 440
- Fig. 13.13. Alberta Population Change and per capita GDP, 1947–2011 441

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It is difficult when writing the acknowledgments for a jointly authored volume falls, of necessity, on one of the authors alone. At the time of Campbell's death, we had reasonably complete drafts of the first thirteen chapters of this book, and he had just provided his comments on the final chapter. Campbell was a pre-eminent Canadian petroleum economist, so his expertise, not to mention his energy and wit, were sorely missed during the lengthy updating, rewriting, and final editing. However, there can be no doubt that *Petropolitics* is truly a co-authored study.

Campbell first proposed this book many years ago. We were both trained as economists (Campbell going on to consult in energy economics, and I to join the Department of Economics, University of Calgary, as their first energy economist). So it is not surprising that we agreed that our discipline brought the most useful framework for understanding the functioning of the petroleum industry. While the subject matter might appear to be specific to the Alberta crude petroleum industry, it was agreed from the beginning that the book would be directed at a much wider audience than Alberta petroleum economists. This broader perspective has both professional and geographical dimensions: the oil industry has ramifications for society at large and for many professions beyond energy economics, and Alberta is far from alone in facing the opportunities and challenges of developing oil and natural gas resources.

Our intent in writing *Petropolitics* was to place the history of the development of Alberta's crude petroleum within the larger contexts of natural resource

economics and public policy formation. Framed in this way, the example of the Alberta experience can be applied anywhere petroleum is being developed. Consequently, this is a lengthy volume, which readers may wish to approach in a selective manner. For example, someone with training in economics may find little that is new in Chapter Four but require the description of industry activity found in Chapter One; conversely, someone employed by the oil industry may already be familiar with the material in the first chapter but have no familiarity with the tools of analysis used by economists as set out in the fourth chapter. Conscious of the difficulties involved in providing reasonably refined economic analysis and detailed descriptions of government regulations while maintaining narrative flow, we provide a brief "Readers' Guide" at the start of each chapter to aid in deciding which parts might prove of most interest. In addition, there are numerous summary and conclusion sections, should the fine technical detail be of less interest to any specific reader. It was also decided that if material was of interest it should be included in the main text rather than in lengthy appended footnotes as is common in many academic studies.

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over the years: anyone involved in the academic world knows it is impossible to overstate the importance of critical discussion in developing and refining any line of argument.

Finally, I would like to extend special thank to my wife, Heather. While she must have wondered when

this project would ever end, she has been endlessly supportive.

Canmore, Alberta
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UNITS AND ABBREVIATIONS

Units and Conversions

Oil

b (or bbl.)	barrel
b/d	barrels per day
m ³	cubic metre
1 b	= .159 m ³
1 m ³	= 6.293 b

Natural Gas

Mcf	thousand cubic feet
Tcf	trillion cubic feet
m ³	cubic metre
1 Mcf	= .028 m ³
1 m ³	= 35.5 Mcf

Numbers

10 ³	thousands
10 ⁶	millions
10 ⁹	billions
10 ¹²	trillions

Acronyms and Abbreviations

AGTL	Alberta Gas Trunk Limited
AIOC	Anglo-Iranian Oil Company
AOSTRA	Alberta Oil Sands Technology and Research Authority
API	American Petroleum Institute

APMC	Alberta Petroleum Marketing Commission
AUC	Alberta Utilities Commission
Btu	British thermal unit
CAPM	Capital asset pricing model
CAPP	Canadian Association of Petroleum Producers
CERI	Canadian Energy Research Institute
CCA	Capital consumption Allowance
CNRL	Consolidated Natural Resources Limited
COR	Canadian Ownership ratio (federal)
COSC	Canadian Ownership Special Charge
CPA	Canadian Petroleum Association
CPSG	Canadian Society of Petroleum Geologists
EIA	Energy Information Administration (of the U.S. Department of Energy)
EMR	Energy Mines and Resources (federal government department)
EOR	Enhanced oil recovery
EORV	East of the Ottawa River valley
ERCB	Energy and Resources Conservation Board (Alberta)
EUB	Energy and Utilities Board (Alberta)
FIRA	Foreign Investment Review Agency (federal)
FPC	Federal Power Commission (U.S.)
FTA	Free Trade Agreement (Canada and U.S.)
GATT	General Agreement on Tariffs and Trade
G&G	Geological and geophysical
GCOS	Great Canadian Oil Sands (company)
GPP	Good production practice
GSC	Geological Survey of Canada

ha	hectare	OPEC	Organization of Petroleum Exporting Countries
HFO	Heavy fuel oil	P&NG	Petroleum and Natural Gas
IEA	International Energy Agency	PCC	Petroleum Compensation Charge
IORT	Incremental Oil Revenue Tax (federal)	PGRT	Petroleum and Gas Revenue Tax
IPAC	Independent Petroleum Association of Canada	PIP	Petroleum Incentive Payment
IPL	InterProvincial Pipeline Company	PNGCB	Petroleum and Natural Gas Conservation Board (Alberta)
ISPG	Institute of Sedimentary and Petroleum Geology	PUB	Public Utilities Board (Alberta)
LDC	Local distribution company (natural gas)	R/P	Reserves/Production ratio
LNG	Liquefied natural gas	RPP	Refined petroleum products
LPG	Liquefied petroleum gases	RSSC	Resource stock supply curve
LTRC	Long term replacement cost	RTPC	Restrictive Trade Practices Commission (federal)
MBP	Market-based pricing (natural gas)	SAGD	Steam assisted gravity drainage (bitumen)
MPR	Maximum permissive rate	SCC	Special Compensation Charge
NAFTA	North American Free Trade Agreement (Canada, U.S. and Mexico)	SOOP	Special Old Oil Price
NARG	North American regional gas model	SPR	Strategic Petroleum Reserve
NEB	National Energy Board (federal)	STRC	Short term replacement cost
NEP	National Energy Program	TCPL	TransCanada Pipeline Company
NGGLT	Natural Gas and Natural Gas Liquids Tax	TOP	Take-or-Pay (natural gas)
NGL	Natural Gas Liquids	USOIQP	United States Oil Import Quota Program
NFFB	Net federal fiscal balance	VRIP	Value Related Incentive Price (natural gas)
NOC	National oil company	WCSB	Western Canadian Sedimentary Basin
NOP	National Oil Policy	WGML	Western Gas Marketing Ltd.
NORP	New Oil Reference Price	WORV	West of the Ottawa River valley
OEB	Ontario Energy Board	WTI	West Texas Intermediate
OGCB	Oil and Gas Conservation Board (Alberta)	WTO	World Trade Organization
OGSP	Official Government Selling Price (OPEC)		