

# **INDUSTRIAL CONCENTRATION AND CROWN CORPORATIONS**

**IN**

**BRITISH COLUMBIA**

**JUNE 1982**

**BY**

**ELMER G. WIENS**

## **Part One: B.C. Industrial Concentration**

### **Summary**

This document analyzes industrial concentration, mergers, and the role of Crown corporations in British Columbia's key industries as of June 1982.

#### **British Columbia's Industrial Concentration Overview**

This study analyzes the levels, causes, and implications of industrial concentration, mergers, and crown corporations in British Columbia, emphasizing their impact on competition, efficiency, and policy.

#### **Objectives and Scope of the Study**

The study aims to quantify industry concentration, assess policy concerns, and examine crown corporations' roles, focusing on manufacturing and resource industries in B.C.

- Investigates mergers, ownership concentration, and policy issues in B.C.
- Focuses on primary resource and manufacturing sectors.
- Measures industry concentration using ratios and structural factors.
- Considers structural components like exports, tariffs, and barriers.
- Highlights data limitations and the need for long-term trend analysis.
- Provides industry-specific concentration data and lists of top firms.
- Examines public and private investment projections over ten years.

- Investigates the residency of directors in crown corporations, noting underrepresentation of B.C. residents.

### **Industry Concentration and Market Power**

Concentration levels influence economic efficiency, prices, and political power, with most industries being competitive or reasonably competitive at broad levels but more concentrated at detailed levels.

- Concentration may lead to higher prices and resource misallocation.
- Political and economic power are often intertwined, affecting legislation and policy.
- Most industries are either competitive or moderately concentrated at the two-digit S.I.C. level.
- At the three-digit level, many industries become more concentrated, including food, paper, and chemical sectors.
- Historical data shows some industries' four-firm ratios declined from 80-100% in 1948 to lower levels by 1958 and 1972.
- Between 1948-1972, 40 industries experienced increased concentration, while 17 declined.
- Factors increasing concentration include efficiency drives, market strategies, mergers, entry barriers, and financial benefits.
- Deterring factors include anti-trust laws, sovereignty concerns, and market growth considerations.
- Overall, concentration-increasing forces tend to outweigh deterrents.

### **Vertical Integration and Industry Efficiency**

Vertical integration involves owning multiple production stages, offering economies of scale and cost savings, especially in resource industries.

- Examples include oil exploration, logging, and pulp/paper mills.
- Economies of scale reduce average costs as production increases.
- Technological economies of scale are significant in pulp and paper industries.
- Vertical integration can improve profits by optimizing input proportions and supply continuity.

- Data on vertical integration patterns across industries will be analyzed.
- Long-term investments in specialized facilities justify upstream and downstream integration.

### **Economies of Scale and Optimal Plant Size**

Large-scale production reduces unit costs, influencing industry concentration and policy.

- Many industries require high minimum efficient plant sizes, often supporting only 8 or fewer firms.
- Efficient plant size estimates vary by industry, with some like bakeries supporting up to 40.8 plants, others like cement supporting 6.6.
- Economies of scale are crucial for competitiveness and cost reduction.
- Factors like market size, stability, and geographic concentration influence actual business sizes.
- Industry concentration ratios will be interpreted using Gorecki's methods.

### **Impact of Tariffs and Trade Policies**

Trade policies shape manufacturing structure and productivity, with tariffs acting as taxes that raise domestic prices and affect resource sectors.

- Canada's tariffs tend to protect domestic industries, raising prices above world levels.
- Removal of trade barriers could boost productivity and market access.
- Freer trade would lower consumer prices and benefit resource sectors.
- Policies may include subsidies for machinery and metal fabrication industries.
- Competition and concentration policies should align with trade policies to enhance efficiency.

### **Provincial Competition Policy and Legal Framework**

Canada's federal government manages competition laws, with provinces lacking their own legislation, raising questions about provincial enforcement.

- The Competition Act prohibits abusive practices like mergers and monopolies.
- Federal legislation is based on criminal law, with enforcement challenges.
- Provinces currently do not have separate competition laws.

- Legislation's constitutionality depends on whether it rests on criminal or other legal powers.
- Federal laws may limit joint ventures and export activities, impacting B.C. industries.
- International examples show efforts to promote exports and competitiveness.
- Strengthening domestic competition policies could support B.C. 's industries in global markets.

### **Constitutional and Legislative Framework for Competition Regulation**

The text discusses Canada's constitutional mechanisms and legal principles governing provincial and federal competition laws, emphasizing the doctrine of paramountcy and the doctrine of pith and substance.

- Federal and provincial legislative powers are divided under the Canadian Constitution Act, 1867.
- The doctrine of paramountcy states federal law supersedes conflicting provincial law.
- Provincial legislation supporting competition policy is primarily industry-specific within B.C.
- The doctrine of pith and substance helps determine whether laws fall under federal or provincial jurisdiction.
- Court reasoning, especially from the K.V. Hoffman – La Roche Ltd. case, is crucial for enforcement legality.
- Federal legislation may create provincial gaps through omissions, leading to federal paramountcy issues.

### **Industry Classification and Sector Descriptions**

Industries in British Columbia are classified using the SIC system, focusing on resource extraction and manufacturing sectors, with detailed descriptions provided for each.

- Industries are grouped into resource-based (logging, mineral, fishing) and manufacturing sectors.
- The SIC system was revised in 1987, replaced by NAICS in 1997.
- Key resource industries include logging, mineral extraction, and food processing.
- Downstream industries include paper, plastics, furniture, and machinery.

- Data sources include government publications and Appendix A for industry specifics.

### **Logging Industry Overview and Data**

The logging industry involves felling, bucking, yarding, and transporting round wood, with significant economic contribution.

- 1979 shipments valued at approx. \$3.175 billion; over 60% of Canada's logging activity occurs in B.C.
- Employed over 1,500 workers; 960 interior, 600 coastal operations.
- Employed 24,474 workers; value added approx. \$1.167 billion, averaging \$48,000 per worker.
- Coastal forests contribute more to shipments than interior forests.

### **Mineral Industries and Production Data**

The mineral sector includes metal mines, fuels, non-metal mines, and quarrying, with 1979 production valued at over \$2.7 billion.

- Major mineral products: metals, fuels, structural materials.
- Employed 8,857 workers; total wages approx. \$283 million.
- Top minerals by revenue in 1980: Copper (25%), Coal (20%), Molybdenum (15%), Silver (13%), Zinc (9%).
- Major mines include Highland Valley, Island Copper, and others.
- Concentration exists in copper and zinc production, with the largest companies controlling significant shares.

### **Manufacturing Industry Breakdown**

The manufacturing sector includes food, rubber, textiles, wood, paper, metals, machinery, electrical, and chemical industries, with detailed data on output and employment.

- Food and beverage industry: approx. 1.7% of GDP in 1979; key subindustries include fish, meat, dairy, and baked goods.
- Rubber and plastics: contribute 0.1% of GDP over 20 years.
- Textile industry: employed 261 men and 492 women in 1980; output valued at \$41.6 million.

- Wood industries: employed over 42,000 men; key sectors include sawmills, plywood, and millwork.
- Paper and allied industries: 24 pulp/paper mills, valued at approx. \$2.32 billion.
- Metal industries: primary metals, fabricating, machinery, and electrical products, with concentration ratios indicating varying levels of competition.
- Chemical industries: include plastics, paints, and industrial chemicals, with significant output figures.

### **Industry Concentration and Competition Levels**

Concentration ratios reveal the degree of market dominance by top firms, affecting competition and pricing.

- Industries classified as competitive (<40%), reasonably competitive (40-55%), relatively concentrated (55-65%), and concentrated (>65%).
- Most industries are either competitive or reasonably competitive; exceptions include primary metals and petroleum.
- 2-digit SIC ratios: forestry (48.9%), food (23.6%), primary metals (86%), petroleum (87.6%).
- 3-digit SIC ratios show higher concentration in sectors like logging, paper, and metals.
- Fewer firms dominate in key sectors, with the largest firms controlling significant market shares.

### **Major Firms and Industry Concentration**

The largest firms in key industries are listed, with total output figures and ownership details.

- Top metal companies produce over \$697 million; smelting/refining sector is the largest at approx. \$484 million.
- Major forest products firms include Weyerhaeuser, MacMillan Bloedel, and others, with combined outputs exceeding \$3.87 billion.
- The paper industry includes 24 mills with total output around \$2.32 billion.
- The petroleum sector's top refineries have combined capacity of 137,800 barrels/day, with Husky and Petro-Canada using only B.C. crude.
- Ownership structures and inter-company linkages influence market dynamics and concentration levels.

## **Oil, Gas, and Petroleum Industry Data**

The B.C. petroleum industry exhibits low market power concentration despite major producers' dominance.

- 1977: top 4 oil producers held 34.1% of provincial output; top 8 held 50.4%; top 10, 67.1%.
- 1980: Petro-Canada controlled 36.4%; top four producers 56.3%.
- Oil production is less concentrated; top four produce about 33%.
- Westcoast pipelines dominate natural gas supply with capacity over 80,000 103m<sup>3</sup>/day.
- Total B.C. natural gas supply in 1980: approx. 8.97 million kg; imports from Alberta and NWT total approx. 1.69 million kg.
- Gas distribution is concentrated in Lower Mainland and northeastern regions.
- Major refineries' capacity: Husky (41,200 bbl/day), Imperial (35,000 bbl/day), Shell (22,000 bbl/day), among others.
- B.C. crude supply declined from 52.8% in 1970 to 25.9% in 1980, indicating increased reliance on imports.

## **Tariff and Pricing on Petroleum and Coal**

The effective tariffs on petroleum and coal products are significantly higher than nominal rates, influenced further by N.E.B. crude pricing.

- Nominal tariff on petroleum and coal products is 7.90%.
- Effective tariff is 44.41%.
- Effective tariff increases when considering N.E.B. pricing of crude (domestic and offshore).
- Source: Looking Outward, Economic Council.

## **Retail Gasoline Market Structure**

The distribution of gasoline sales in British Columbia has shifted over time among different outlet types.

- Major Brand Independent and Lease outlets accounted for 92.6% in 1963, decreasing to 62.1% in 1979-80.

- Major Brand Company Operated outlets increased from 2.1% to around 20.9% over the same period.
- Private Brand Distributors grew from 5.3% to 17.0%.
- Total major branch outlets decreased from 3,227 in 1961 to 1,906 in 1979-80.

### **Ownership and Control of Oil and Gas**

Ownership of oil and natural gas assets is concentrated among major companies, with significant foreign and government involvement.

- Petro-Canada holds 1.00%, owned by the Government of Canada.
- Imperial Oil Limited owns 69.5% in 1980, with 76.5% earlier.
- Exxon, Mobil, Union Oil, Dome Petroleum, HBOG, Texaco, and Gulf are major foreign owners, with varying ownership percentages.
- Exxon, Mobil, and Union Oil have majority stakes, with some companies being 100% owned.

### **Non-Resident Ownership in B.C. Oil and Gas**

Foreign ownership of oil and gas production is substantial, with the top majors controlling a significant share.

- Petro-Canada's share is 10.5% of total B.C. production.
- Mobil owns 3.9%, Imperial 12.6%, Dome 3.9%, Union 5.7%, HBOG 3.3%, Texaco 5.3%, Gulf 3.6%.
- Overall, non-resident ownership accounts for approximately 29.7% of production.
- UNRO (Ultimate Non-Resident Ownership) share of gas is 23.4%.

### **Fish Processing Industry Structural Characteristics**

The B.C. salmon industry is structurally uncompetitive, with a large number of fishermen and few buyers.

- Over 5,000 licensed salmon vessels, few buyers for landings.
- Entry barriers are high; vertical integration is extensive.
- Industry bias toward canning over freezing due to market power of large firms.
- Industry contributes to excess canned output relative to fresh/frozen.

## **Industry Concentration in Fish Processing**

Concentration ratios indicate high market dominance by few firms in fish and roe production.

- Four-firm concentration ratios for fish, salmon, and canned salmon range from 56.8% to 87.6% (1960-1980).
- Eight-firm ratios are higher, reaching up to 97.5% in some sectors.
- The largest firms control a significant share, with the top four controlling over 75% of production in recent years.

## **Industry Performance and Productivity Trends**

B.C. industries show mixed growth, with resource industries stable or growing, manufacturing declining.

- Primary resource industries (agriculture, forestry, mining) contribute around 9-9.5% to GDP.
- Manufacturing declined from 22% to below 20% of GDP; employment share dropped from 18.2% to 15.6%.
- Capital stock growth is highest in mining, followed by finance and agriculture.
- Manufacturing industries have low capital formation rates; chemical, food, and wood industries perform better.
- Capital-labor ratios vary, with utilities and mining having high ratios.
- Productivity growth may be inhibited by concentration and technological stagnation.

## **Industry Capital and Labour Ratios**

Capital stock and productivity are uneven across industries, affecting growth.

- Capital per worker is highest in utilities (~\$500,000) and mining.
- Manufacturing industries have relatively low capital formation.
- Capital-labor ratio increased significantly in mining and finance sectors.
- Capital-labor ratio index from 1961 to 1980 shows substantial growth in resource sectors.

## **Industry Structural Changes Over Time**

Structural shifts in GDP and employment reflect resource sector stability and manufacturing decline.

- Agriculture and fishing share decreased; mining increased.
- Manufacturing's share of GDP declined; construction and services grew.
- Employment in manufacturing decreased from 18.2% to 15.6%, despite raw material abundance.
- Policy questions arise on productivity, demand, and investment incentives.

### **External Trade and Tariffs**

B.C. exports about 55-60% of its production value, with tariffs impacting trade.

- Main export sectors: mineral ores, concentrates, coal, crude petroleum, wood chips, and processed products.
- Effective tariffs are higher than nominal, with estimates around 9.5% for some products.
- Major export products include fabricated materials, machinery, and end-products.
- Imports are heavily concentrated in machinery, transportation equipment, and consumer goods.
- Top import commodities in 1979-80 include cars, parts, alumina, trucks, coffee, aircraft, and sugar.
- Total imports in 1980: ~\$6.3 billion; exports: ~\$15 billion.

### **Trade Through B.C. Ports**

B.C. ports facilitate significant international trade, with detailed data on imports and exports.

- Major export commodities include metals, chemicals, and wood products.
- Imports are dominated by vehicles, machinery, and consumer goods.
- Trade tariffs vary, influencing competitiveness and trade patterns.
- 1980 trade data highlights the importance of B.C. ports in global commerce.