What Drives The Alaska Economy?

Alaska Department of Natural Resources

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Anchorage, Alaska

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Consumer View of Economy
## Descriptive Analysis:
### 2006 Alaska Employment (000)

<table>
<thead>
<tr>
<th>Industry</th>
<th>2006 Employment (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Resources &amp; Mining</td>
<td>13</td>
</tr>
<tr>
<td>Health &amp; Education Services</td>
<td>37</td>
</tr>
<tr>
<td>Construction</td>
<td>18</td>
</tr>
<tr>
<td>Leisure &amp; Hospitality</td>
<td>31</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>13</td>
</tr>
<tr>
<td>Other Services</td>
<td>11</td>
</tr>
<tr>
<td>Trade</td>
<td>42</td>
</tr>
<tr>
<td>Federal Civilian</td>
<td>17</td>
</tr>
<tr>
<td>Transportation &amp; Utilities</td>
<td>22</td>
</tr>
<tr>
<td>State Govt</td>
<td>25</td>
</tr>
<tr>
<td>Finance &amp; Information</td>
<td>22</td>
</tr>
<tr>
<td>Local Govt</td>
<td>38</td>
</tr>
<tr>
<td>Professional &amp; Business</td>
<td>24</td>
</tr>
<tr>
<td>Military Active Duty</td>
<td>23</td>
</tr>
</tbody>
</table>
Structural Analysis: Where Do the $$s Come From?

Structure of the Alaska Economy
Structural Analysis: Where Do the $$s Go?
Industry Characteristics

- Dollar Power
- Links into Economy
- Employment
- Stability
- Environmental Footprint
- Tax Base

Structure of the Alaska Economy
The Alaska Economy!
Traditional Natural Resources
Alaska: The Myth

Structure of the Alaska Economy
Alaska: The Reality

Structure of the Alaska Economy
Alaska Economic Drivers: The Foundation of the Economy

Shares of Personal Income in 2000

- Other: 67%
- Non Pet Resources: 33%
### Traditional Natural Resources: Seafood

#### SEAFOOD: 2005 LANDED VALUE (Million $)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>$1,295</td>
</tr>
<tr>
<td>Salmon</td>
<td>$303</td>
</tr>
<tr>
<td>Groundfish</td>
<td>$660</td>
</tr>
<tr>
<td>Halibut</td>
<td>$169</td>
</tr>
<tr>
<td>Shellfish</td>
<td>$148</td>
</tr>
<tr>
<td>Herring</td>
<td>$15</td>
</tr>
</tbody>
</table>

28 thousand harvesters, 39% non resident. 73% processors, 73% non resident.
## Traditional Natural Resources: Mining

Zinc is used to galvanize steel. Price went thru the roof in 2006.

<table>
<thead>
<tr>
<th>Mineral</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td>$862</td>
<td>$2,003</td>
</tr>
<tr>
<td>Gold</td>
<td>$190</td>
<td>$336</td>
</tr>
<tr>
<td>Lead</td>
<td>$115</td>
<td>$184</td>
</tr>
<tr>
<td>Silver</td>
<td>$85</td>
<td>$130</td>
</tr>
<tr>
<td>Copper</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$1,253</td>
<td>$2,653</td>
</tr>
</tbody>
</table>
New Natural Resources: Tourism

1.5 million tourists in 2006 bring $1.5 billion $$$ with them to Alaska.

Structure of the Alaska Economy
New Natural Resources: Air Cargo

2006 CARGO TRAFFIC (Million Metric Tonnes)

<table>
<thead>
<tr>
<th>City</th>
<th>Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memphis</td>
<td>3.69</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>3.61</td>
</tr>
<tr>
<td>Anchorage</td>
<td>2.80</td>
</tr>
<tr>
<td>Seoul</td>
<td>2.34</td>
</tr>
<tr>
<td>Tokyo</td>
<td>2.28</td>
</tr>
</tbody>
</table>

China Air alone averages 10 flights per day thru Anchorage.

Structure of the Alaska Economy
New Natural Resources: Retirees

52 thousand retirees ages 60+ in 2004. $1.5 billion of retirement and health care $$$$.
Traditional and New Resources: How Big?

ALASKA NATURAL RESOURCE PRODUCTION
MARKET VALUE (Billion 2005 $)

Source: ISER
Traditional and New Resources: Modest Economic Growth

ALASKA NATURAL RESOURCE EMPLOYMENT
THOUSANDS


MINING  TIMBER  TOURISM  SEAFOOD
AIRCARGO

Structure of the Alaska Economy
### Alaska’s Non Oil Economic Drivers: Actual Job Growth (Thousands)

<table>
<thead>
<tr>
<th>Activity</th>
<th>1967</th>
<th>2007</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism</td>
<td>1</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Fishing</td>
<td>7</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Mining</td>
<td>&lt;1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Air Cargo</td>
<td>-</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Timber</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
</tbody>
</table>
Traditional Resources: Growth Potential

Real Prices by Commodity Type
1900 = 100, log scale, US GDP deflator

Index

Non-food agriculture
Food
Base metals

Sources: Global Financial Data; Grilli and Yang (1988); IMF; Plaffenzeller et al (2007)
Traditional Resources: Growth Potential

Structure of the Alaska Economy
Traditional Resources: Growth Potential
Alaska Baby Boomers will Drive Growth in Senior Population

BB were born between 1946 and 1964. In 2008 they range in age from 44 to 62.
Federal Spending

Structure of the Alaska Economy
Federal Spending in Alaska 2005
(Billion $)

- Defense--Wages: $1.11 (120%)
- Defense--Procurement: $1.92 (20.8%)
- Transfers: $1.84 (19.9%)
- Grants--Project: $1.47 (159%)
- Grants--Formula: $1.66 (180%)
- Civilian--Wages: $0.74 (8.0%)
- Civilian--Procurement: $0.49 (5.3%)

Source: Consolidated Federal Funds Report

Structure of the Alaska Economy
Alaska Economic Drivers: The Foundation of the Economy

Shares of Personal Income in 2000

- Federal Govt: 34%
- Other: 66%
Federal Spending: Barely Visible
## Largest Civilian Federal Programs in Alaska in 2005 (Million $)

<table>
<thead>
<tr>
<th>Transfers</th>
<th>Grants--Formula</th>
<th>Grants--Project</th>
<th>Civilian Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$1,840</td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>6 Largest</td>
<td>$1,566</td>
<td>6 Largest</td>
<td>6 Largest</td>
</tr>
<tr>
<td>Social Security</td>
<td>$667</td>
<td>Medicaid</td>
<td>Indian Health Service</td>
</tr>
<tr>
<td>Federal Retirement (Civilian and Military)</td>
<td>$325</td>
<td>Highway Construction</td>
<td>Airport Improvement Program</td>
</tr>
<tr>
<td>Medicare</td>
<td>$260</td>
<td>Indian Housing Block Grants (NAHASDA) $129</td>
<td>EPA Special Purpose Grants</td>
</tr>
<tr>
<td>Unemployment Insurance</td>
<td>$114</td>
<td>Impact Aid to Schools $95</td>
<td>Denali Commission</td>
</tr>
<tr>
<td>Veterans’ Compensation</td>
<td>$109</td>
<td>TANF (Temporary Assistance for Needy Families) $67</td>
<td>Section 8 Housing</td>
</tr>
<tr>
<td>Tribal Self Governance</td>
<td>$91</td>
<td>Special Education $32</td>
<td>Alaska Native Education Programs</td>
</tr>
</tbody>
</table>

Source: Consolidated Federal Funds Report and Author’s Estimate

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**Structure of the Alaska Economy**
Federal Grants: #1 Per Capita

Structure of the Alaska Economy
Military Spending: #2 Per Capita

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>Growth 2000 to 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virginia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hawaii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Average</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Structure of the Alaska Economy
Structure of the Alaska Economy

MILITARY PAYROLL AND PROCUREMENT

1995 2000 2005

$0 $1 $2 $3

Procurement  Payroll

$0 $1 $2 $3

Structure of the Alaska Economy
Federal Spending: Growth Potential
Federal Agency Spending: in Alaska

Source: Consolidated Federal Funds Report

Structure of the Alaska Economy
Federal Spending: Squeeze Part 1
Annual Change in Health Care Jobs

Structure of the Alaska Economy
Federal Spending: Squeeze Part 2
Annual Change in Construction Jobs

Structure of the Alaska Economy
Oil and Gas
Alaska Economic Drivers: The Foundation of the Economy

- OIL AND GAS
  - 33%

- OTHER
  - 67%

Shares of Personal Income in 2000
Alaska Oil Price

Alaska Crude Oil Market Price

Real 2007 $
## Oil Industry Jobs in 2002

<table>
<thead>
<tr>
<th>State</th>
<th>Production</th>
<th>Refining</th>
<th>Transport</th>
<th>Annual Oil Production (Million Barrels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALASKA</td>
<td>8,761</td>
<td>732</td>
<td>1,037</td>
<td>359</td>
</tr>
<tr>
<td>Texas</td>
<td>133,802</td>
<td>20,960</td>
<td>15,455</td>
<td>412</td>
</tr>
<tr>
<td>California</td>
<td>16,441</td>
<td>13,447</td>
<td>Na</td>
<td>258</td>
</tr>
<tr>
<td>Colorado</td>
<td>7,257</td>
<td>372</td>
<td>790</td>
<td>18</td>
</tr>
<tr>
<td>Louisiana</td>
<td>69,009</td>
<td>9,536</td>
<td>2,294</td>
<td>94</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>25,031</td>
<td>2,206</td>
<td>1,625</td>
<td>67</td>
</tr>
<tr>
<td>New Mexico</td>
<td>9,765</td>
<td>611</td>
<td>1,002</td>
<td>67</td>
</tr>
<tr>
<td>Wyoming</td>
<td>9,903</td>
<td>834</td>
<td>610</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: ADOL.

Structure of the Alaska Economy
## Oil and Gas: North Slope Statistics

| 15 Billion Barrels | Production thru 2006  
|                    | (enough to supply total world demand for 6 months) |
| $250 Billion       | Value of production at the wellhead (at time of sale) |
| $113 Billion       | State of Alaska cumulative revenues  
|                    | (purchasing power in 2007 $) |
| $40 Billion        | Alaska Permanent Fund balance |

Structure of the Alaska Economy
## Oil and Gas: Share of the Economy

<table>
<thead>
<tr>
<th>Category</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production value since 1867</td>
<td>90%</td>
</tr>
<tr>
<td>State General Fund revenues</td>
<td>85%</td>
</tr>
<tr>
<td>Market value of resource production</td>
<td>82%</td>
</tr>
<tr>
<td>Industrial property tax base</td>
<td>80%</td>
</tr>
<tr>
<td>Private investment spending (Direct)</td>
<td>60%</td>
</tr>
<tr>
<td>Gross state product (Direct)</td>
<td>33%</td>
</tr>
<tr>
<td>Personal income (Total)</td>
<td>33%</td>
</tr>
<tr>
<td>Jobs (Total)</td>
<td>33%</td>
</tr>
<tr>
<td>Jobs in Oil Sector</td>
<td>3%</td>
</tr>
</tbody>
</table>
Alaska with Oil:
Bigger, Richer, Healthier

• Job Opportunities
• Business Opportunities
• High Incomes
• Low Taxes
• Low Prices
• New People
• Public services
• Public Infrastructure
• Business infrastructure
• Consumer goods and services
Gedankenexperiment

Structure of the Alaska Economy
January 16, 1968

ANOTHER DRY HOLE AT PRUDHOE BAY
Oil Companies Say “We Give Up”
Alaska: The Road Not Taken

I. Production Disappears
II. Squeeze on Resource Sector
III. Squeeze on Support Industries
IV. Squeeze on Federal $$
V. Squeeze on Retirees

A WORK IN PROGRESS
I. No Production

- Oil Patch
- Government Spending
- PF Dividend

Structure of the Alaska Economy
I. No Production--Part 1
The Oil Patch

Job creation
- 41,744 jobs – direct, indirect, induced
  - 4,497 Direct – primary companies
  - 8,410 Indirect – support industry companies providing goods and services
  - 28,837 Induced – jobs created when direct and indirect employees spend their income locally
I. No Production--Part 2

Government Spending

**Petroleum Revenue Spending**

- **State Government Employees**: 16 Thousand
- **Local Government Employees**: 15 Thousand
- **Private Sector Jobs**: 18 Thousand

**Total Jobs = 49 Thousand.**

Assumption: All spent petroleum revenues pay for operations.

Structure of the Alaska Economy
I. No Production—Part 3

The PF Dividend

2008 DIVIDEND BASICS

$3,269 Dividend
611 Thousand Recipients
$2 Billion Distribution
I. Production Squeeze

<table>
<thead>
<tr>
<th>Category</th>
<th>Jobs (000)</th>
<th>Income (BILLION $)</th>
<th>People (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOBS (000)</td>
<td>254</td>
<td>17</td>
<td>477</td>
</tr>
</tbody>
</table>

0% 25% 50% 75%
II. Resource Industry Squeeze

- Light Tax Burden
- Investment in Developmental Infrastructure
- Operations Assistance
- Support Business Development
- Lower Wages

Structure of the Alaska Economy
## II. Resource Industry Squeeze: Actual and Projected Tax Burden

2004 State GF Revenues (Million $):
- Seafood, Tourism, Mining

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Revenue (Million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>$112</td>
</tr>
<tr>
<td>If Oil $ Disappeared</td>
<td>$502</td>
</tr>
<tr>
<td>Incremental Burden, no Oil $</td>
<td>$390</td>
</tr>
<tr>
<td>Increase in Tax Rate</td>
<td>4 X</td>
</tr>
</tbody>
</table>
II. Resource Industry Squeeze

- Jobs (000): 233
- Income (Billion $): 16
- People (000): 442
III. Support Sector Squeeze

- Light Tax Burden
- Cost of Living Decline
- Reduced Seasonality
- Support Business Development
- Lower Wages
- Economies of Scale
- Enhanced Competition
III. Support Sector Squeeze: Household Tax Burden

$13,150 Per Capita in 2006

* Average State Income Tax Rate to Replace Oil Revenues—1970 to 2006.

Structure of the Alaska Economy
III. Support Sector Squeeze: Non Seasonal Petroleum Jobs

- FISHING
- TOURISM
- MINING
- OIL
- GOVT

Index of Seasonality
1968: 32%
2006: 12%

Ratio of July to January Tourist Visitors is 10:1.

Percent job increase July over January.
III. Support Sector Squeeze

- **JOBS (000)**
  - Total: 214
  - 0%: 0
  - 25%: 0
  - 50%: 0
  - 75%: 214

- **INCOME (BILLION $)**
  - Total: 15
  - 0%: 0
  - 25%: 0
  - 50%: 15
  - 75%: 0

- **PEOPLE (000)**
  - Total: 409
  - 0%: 0
  - 25%: 0
  - 50%: 409
  - 75%: 0

---

Structure of the Alaska Economy
IV. Federal Dollar Squeeze

- Population Sensitive Payments
IV. Federal $$ Squeeze

<table>
<thead>
<tr>
<th>Category</th>
<th>Value (000)</th>
<th>0%</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOBS (000)</td>
<td>195</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INCOME (BILLION $)</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEOPLE (000)</td>
<td>377</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Structure of the Alaska Economy
V. Retiree Squeeze

- Tax Free
- PFD
- Public Amenities
V. Retiree Squeeze

<table>
<thead>
<tr>
<th>JOBS (000)</th>
<th>189</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCOME (BILLION $)</td>
<td>12</td>
</tr>
<tr>
<td>PEOPLE (000)</td>
<td>366</td>
</tr>
</tbody>
</table>

Structure of the Alaska Economy
The Road Not Taken: Alaska Growth Since Statehood

- **JOBS (000)**
  - 90

- **INCOME (BILLION $)**
  - 3

- **PEOPLE (000)**
  - 230

0% 25% 50% 75%
The Road Not Taken
The 2/3 Rule

About 2/3 of the economic growth in Alaska since Statehood can be traced to Petroleum.
### The Road Not Taken: Alaska Economic Base

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military</td>
<td>35%</td>
</tr>
<tr>
<td>Federal Civilian</td>
<td>23%</td>
</tr>
<tr>
<td>Tourism</td>
<td>20%</td>
</tr>
<tr>
<td>Fishing</td>
<td>16%</td>
</tr>
<tr>
<td>Mining</td>
<td>3%</td>
</tr>
<tr>
<td>Air Cargo</td>
<td>3%</td>
</tr>
<tr>
<td>Timber</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Structure of the Alaska Economy**
Candidates for Comparison?

- Oklahoma
- New Mexico
- South Dakota
  - Wyoming
  - Montana
  - Idaho
- Florida
- Nevada
- Hawaii
Maine Is Not Like Alaska

- Physically attached to Lower 48
- Federal land ownership 1%
- Native American population 1%
- Lobsters instead of crabs
- Unusual accent
- Presidential hangout
Maine and Alaska: Similarities Part 1

- Many moose
- Few humans
- Cold
- Remote
- Independent streak
Maine and Alaska: Similarities Part 2

- Fish / Tourism / Timber / Mining / Agriculture
- Limits on sustainable harvests
- Challenged by globalization
- Small and declining manufacturing
- Dependence on federal $$

- Conflicting visions about use of resources
- “Zero Sum Game” development mentality

- Strategic development planning advice from Brookings Institution
Maine: Economic History

Throughout the second half of the twentieth century, Maine has struggled to find a proper balance between resource-based industrial development and environmental protection. The state has come to rely heavily on tourism, small manufacturing enterprises and defense-related activities and installations for much of its economic base.
Maine Economic Performance: Mediocre

- Gross State Product per capita: 43rd
- Population growth: 46th
- Median age: 1st

- Median Paycheck: 77% as high as Alaska

- Projected population growth = 1/3 US average
### Comparing a Family of 4

<table>
<thead>
<tr>
<th></th>
<th>Maine</th>
<th>Alaska</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wages</strong></td>
<td>$55,641</td>
<td>$72,750</td>
</tr>
<tr>
<td><strong>State Taxes</strong></td>
<td>-$7,077</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Dividend</strong></td>
<td>$0</td>
<td>$6,800</td>
</tr>
<tr>
<td><strong>Public Spending</strong></td>
<td>$29,995</td>
<td>$49,064</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$78,560</td>
<td>$128,614</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+$50,054</td>
<td></td>
</tr>
</tbody>
</table>

*Adjusted for lower cost of living in Maine.*

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**Structure of the Alaska Economy**
No Reason to be Complacent

Daily per capita oil production

1988

TODAY
Actual Performance Since 1990: Jobs vs. Oil Production
(Index: 1990 = 1)

- 104 thousand jobs added
- Production down 2/3
Explaining The Paradox

- Federal $$
- Military Expansion
- Tourism, Mining
- Petroleum Revenues
- Retirees
- Air Cargo

- National Economic Boom
- Increased Labor Intensity of Petroleum Production
- Anticipation of Gas Line, OCS, etc.
- Support Sector Catching Up
- Wealth Accumulation
The Economic Future of Alaska: 50 Years of Statehood Has Not Changed the Challenges

Structure of the Alaska Economy
Alaska Natural Resources: 2005 Market Value (Million $)

- Oil $18,164
- Gas $761
- Mining $1,506
- Seafood $1,392
- Timber $142
- Tourism $1,592

Value determined at point of production except for mining.
Petroleum Resources for a Sustainable Economic Future (Billion Barrels of Oil)

Production History:
- North Slope 15.4
- Cook Inlet 1.3

Reserves Today:
- Central North Slope 5.9
- Cook Inlet 0.1

Potential Additional Reserves (Technically Recoverable—USGS, MMS):
- ANWR 10.4
- NPRA 10.6
- OCS 23
- Central North Slope 4
Resource Curse:
Some Symptoms

- Corruption
- Rent Seeking
- Entrepreneurial Decline
- Overheating Economy
- Economic Distortions
- Public Sector Overexpansion
- Mismanagement
- Underinvestment

Structure of the Alaska Economy