

AN ABSTRACT OF THE THESIS OF

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Abstract approved: \_\_\_\_\_

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This research is concerned with the current debate among Oregonians on how to improve the standard of living and accelerate economic development in Oregon. The main question is what economic activities make Oregon, and regions within Oregon grow? To find out where Oregon's economic strength and weaknesses lie, first we have to understand the income and employment contributions of different industries in Oregon. Second, decisions for improving Oregon's economic growth may be guided by investment in the production of goods for which Oregon is competitive relative to other goods in domestic and international regions. Third, we can investigate and hypothesize about reasons for strengths and weaknesses of Oregon's industries relative to other industries locally, nationally, and internationally.

To provide a guideline for Oregon economic development, this study first classifies Oregon's economic activities into eight major economic sectors: agriculture, lumber and wood, high-tech, other manufacturing, non-financial private services, financial services, other private services, and government services. In 1995, it is estimated that these sectors generated about \$72 billion in gross state product (GSP) for Oregon's economy, employed over 1.4 million people and provided total payroll of

about \$36.5 billion. Oregon's aggregate service sector, which includes both non-government private services and government services, generated about 76% of Oregon's gross state product (64% and 12% respectively), received about 76% of Oregon's payroll (58% and 18% respectively), and employed about 80% of Oregon's total employment (64% and 16% respectively). The wood sector contributed about 7% to Oregon's GSP, received 6% of Oregon's payroll, and employed about 5% of Oregon's employment. The agriculture sector generated about 7% of Oregon's GSP, received about 4% of Oregon's payroll, and accounted for about 5% of Oregon's employment. The high-tech industries contributed about 5% of Oregon's GSP, received 7% of Oregon's payroll, and employed about 4% of employment.

Oregon exported about \$ 9.43 billion in 1995. High-tech equipment exports were about 46% of Oregon's total exports. The agriculture sector accounted for 26%, of exports, the wood sector exported 15%, and other manufacturing products 13%. While Oregon's recent growth has accrued mostly through aggregate service activities, the trade oriented sectors including agriculture, wood, and high-tech injected nearly nine and half billion dollars of foreign revenue into the state's economy in 1995.

Second, this research utilizes state-level statistics along with "revealed comparative advantage" methodology and computes competitiveness indexes. These are calculated for individual industries in Oregon relative to the Pacific Northwest and the

United States economies to illustrate the strengths and weaknesses of the Oregon economy. The comparison of Oregon's efficiency in the agricultural sector relative to the PNW and U.S. indicates that, in the last seven years, Oregon's comparative advantage in agricultural farm production (crops) has increased but its comparative advantage in food processing has been declining since 1992. In fact, in 1994 and 1995 Oregon exhibited a comparative disadvantage in food products relative to both the PNW and the United States economies. One hypothesis advanced in this study is that such decline may be due to the Oregon's higher labor costs relative to other states in the PNW and U.S. The possibility that Oregon pays higher wages to workers in food production relative to the PNW and U.S., combined with the notion that food production in Oregon is more labor-intensive relative to the PNW and U.S. may account for the fact that Oregon's comparative advantage in food processing has declined in recent years. With regard to the wood sector, Oregon has a comparative advantage in lumber and wood products relative to both the PNW and U.S. economies. In the furniture and fixtures category Oregon holds a clear comparative advantage against the PNW region, however it has a distinct disadvantage compared to the United States economy. In the paper products, Oregon holds a comparative advantage relative to the U.S., however, Oregon is at a comparative disadvantage relative to the PNW (except for 1991 and 1992 when Oregon had a slight comparative advantage). During the 1989-1995 time period, Oregon has

been more competitive relative to the PNW region in industrial machinery and computer equipment. However, the degree of advantage has declined from 157% in 1989, to 105% in 1995. Relative to U.S., Oregon improved its comparative advantage in the production of same goods from -16% comparative disadvantage in 1989, to being +25% more efficient in 1995. Similarly, Oregon held its comparative advantage in the production of electric equipment and measuring instruments relative to PNW during 1989-1995 time period. Relative to U.S., Oregon improved its efficiency in the production of electric equipment from -37% inefficiency in 1989, to +5% of comparative advantage in 1995. Oregon's comparative advantage in measuring instrument varied between 11% and 26% over 1989-1995 time period.

With regard to recent arguments advanced against high-tech industries, the results of this study indicate that Oregon is becoming more efficient (regionally as well as nationally) in manufacture of high-tech products, this may be partially be due to economies of scale associated with this sector. With regards to food processing industries, it may be that costs associated with labor, materials, capital investment, and other inputs are high relative to other regions. Hence, we cannot be competitive in those industries. Alternatively, one may argue that labor productivity in Oregon's food industry is lower than other regions. If this is the case, increasing training and education programs to increase labor productivity, in addition to changing infrastructure, could

improve efficiency in food industries and thereby improve Oregon's economic development.

**STRATEGIC INVESTMENTS IN AGRICULTURAL INDUSTRIES AND  
OREGON'S ECONOMIC DEVELOPMENT**

by

**Dennis T. Koong**

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Dennis T. Koong, Author

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# STRATEGIC INVESTMENTS IN AGRICULTURAL INDUSTRIES AND OREGON'S ECONOMIC DEVELOPMENT

## Chapter 1

### Introduction

The quality of life in Oregon, as in any other region, depends on the people's earnings, employment, job security, quality of environment, high levels of education and health care, and minimum level of crime. Traditionally, Oregon has been specializing in the production of natural resource based products such as timber, wood products, paper, agricultural crops, livestock, and fish products. In the early 1970s, global and nationwide concerns about depletion of natural resources and endangered species alarmed Oregon's development planners to watch for the economic impacts of environmental restriction on Oregon economy and look for alternative industries for diversification.

Currently, Oregonians and the economic development policy decision makers in this state have different views in coping with these environmental policies and providing high standards of living for Oregonians. Some argue for investment in human capital and economic infrastructure (Ed Whitelaw [1990 and 1992]); others advocate and support bringing into state more high-tech manufacturing industries such as computers, semiconductors and electrical measuring instruments (Oregon Economic Development Department, Joseph Cortright [1994]). Still others are asking for expanding the production and export of agricultural and food products (Oregon Department of Agriculture). Loggers and fishermen are lobbying for deregulation of

timber and fish industries while some people stand for status quo (doing nothing and leave it as is). The main question in this debate is what economic activities make Oregon, and regions within Oregon, achieve higher standards of living? More specifically, Oregonians are seeking for optimal strategic investment and planning programs for Oregon's economic development.

This research attempts to resolve this debate by identifying industries for which Oregon possesses comparative advantage compared to the United States and the Pacific Northwest economies. The main emphasis of this study is that decisions for improvement of Oregonians' standards of living and Oregon's economic growth should be based on Oregon's national and international competitiveness (comparative advantage doctrine) in the production of goods and services. Thus, Oregon should invest in the production of products for which it is more competitive than other regions inside the U.S. and abroad.

Modern theories of comparative advantage predict that regions specializing in the production and exports of commodities which utilize that region's most abundant resources (factors of production) will prosper most. In spite of current environmental regulations, Oregon is still endowed with abundant natural resources such as land, water, fish, and timber relative to other states.

### 1.1 Policies Affecting Regional Comparative Advantage<sup>1</sup>

To understand the meaning of comparative advantage we have to acknowledge that each region in the world has different combination of productive factors of production such as land, natural resources, capital, labor and technological expertise. Although all regions may have these factors of production to some degree, the proportions differ. For example, compared to Saudi Arabia, Oregon has a much higher ratio of technological expertise in making computers rather than oil. The doctrine of comparative advantage suggests that both Oregon and Saudi Arabia will be better off by having Oregon specialize in producing computers and exporting it to Saudi Arabia in return for oil from that country. In this example each region has a relative cost advantage in producing one commodity, so it is better off when specializing in producing that commodity and trading that with the other region for the other commodity.

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<sup>1</sup>This part summarizes article by Ronald H. Schmidt. "Regional Comparative Advantage". *Federal Reserve Bank of San Francisco*. Number 93-37, October 29, 1993.



## **1.2 Changing Comparative Advantage: "Trickle-down" and "Trickle-up" Approaches**

To improve a region's economy, policy makers often try to affect the region's comparative advantage by affecting the endowments and quality of productive factors (land, labor, and capital) and therefore affecting the relative factor cost of production for different industries. For example, land can be added by changing swamps into "street of dreams" and hence making the region more attractive. Capital factor could be increased by higher investment in roads, ports, airports to reduce transportation cost and therefore enhance region's comparative advantage. Labor's productivity can be increased by improving labors skill level through better education.

Generally, policy-makers may affect a region's comparative advantage in three ways:

1. the "trickle-down" approach, which attempts to bring specific companies to the region,
2. the "trickle-up" approach, in which the region's comparative advantage is changed through changes in the region's infrastructure such as building hospitals, schools, universities, new roads or transportation facilities, airports, port facilities, and communication centers, and
3. a combination of "trickle-down" and "trickle-up" approaches.

Each approach possesses some advantages and disadvantages.

The main advantage of "trickle-down" approach is that it offers immediate results on creation of new jobs, income, and tax revenue in the region. Also, if the firm is successful, it may attract other businesses in the region, as well as it may improve the labor quality through working with local school. Disadvantages of this approach are that because it is company specific, the success of this strategy depends on the performance of that company regardless of the performance of the industry in which it belongs. Moreover, because this approach usually attracts companies with direct or indirect subsidies such as tax breaks, low (or even free) land prices and other special treatments, if a targeted company is not successful it could burden other businesses in the region in terms of higher taxes, which in turn could decrease their competitive strength. Finally, if the targeted firm relocates to other regions after several years, then the increased population, rents, and other social costs may cause adverse effects on the comparative advantage of the region.

The major advantages of "trickle-up" approach is that it often affects several industries and not only one specific industry. For example, by enhancing educational system all industries which utilize highly skilled workers will benefit from such policy. Institutional changes, such as easing regulations pertaining to businesses, can improve the competitiveness of all businesses. The disadvantages of this approach include the

difficulty of measuring the impacts of policy changes, and the possibility of ineffectiveness of a policy change or new projects on region's comparative advantage. For example, construction of a new airport may increase tax levies on residents but fail to attract new flights.

The main advantage of a hybrid approach is that it allows for both short and long range improvements in a region's economy. However, the adoption of this approach requires a large amount of initial capital.

With regard to economic development and human progress, David Korten, an expert on the issues of environment, development, and economics and a consultant to international development agencies, argues that "economic growth is not the key to human progress. Human well-being depends more on *how* available physical resources are used than on increasing the rates of their extraction and consumption" (Korten, 1991). With regard to bringing in foreign investment into a region for development purposes, Korten, argues that foreign investment is not to be confused with development:

"Attracting free-floating international capital may provide a temporary economic spurt, but this is not to be confused with *development*-which is a process by which a community or country develops the capacity to manage its *own* resources in a sustainable way to meet the needs of its own people. The development success of Japan, Taiwan, and South Korea was based on strong,

protected domestic markets, gaining control over technology, and building a domestic capital base and entrepreneurial capability. They at no time demonstrated an interest in turning their domestic economies over to footloose international capital."

In sum, changing a region's competitiveness is a difficult task. First, it requires identification of existing comparative advantages of the region. Second, it needs a clear interpretation of *economic development*, *economic growth*, and *progress* by the residents of the region. Third, policy-makers should protect region's economic activities against the disadvantages associated with "trickle-down" and "trickle-up" approaches. Finally, in choosing any of the above mentioned approaches, public policies are most effective and productive when such policies are consistent with the region's comparative advantage, and policy-makers should estimate the possible impacts of their policies before implementing such policies.

### 1.3 Objectives of Study

Accordingly the specific objectives of this study are as follow:

1. to define eight economic sectors of agriculture, lumber and wood, high-tech manufacturing, non-high tech manufacturing (other manufacturing), financial services, non-financial private services, and government services for the purpose of this study,

2. to provide a general overview of Oregon's economy in terms of Oregon's gross state product (GSP), exports, and employment,
3. to evaluate the economic importance of Oregon's agricultural sector to Oregon's economy,
4. to measure and analyze the competitiveness of Oregon's industries relative to the United states, and the Pacific Northwest economies,
5. to compare Oregon's agricultural value added sector with the U.S. food processing sector in terms of production, wages and employment, and identify similarities and dissimilarities, and
6. to discuss the policy implications of this study.

#### **1.4. Organization of Study**

To achieve these objectives, the remainder of this study is organized as follows: Chapter 2 classifies Oregon's economy into eight selected economic sectors of agriculture, lumber and wood, high-tech manufacturing, non-high tech manufacturing (other manufacturing), non-financial private services, financial services, "other" non-financial private services, and government services for the purpose of this study. Chapter 3 presents an overview of Oregon's economy in terms of production (value added amount), trade, employment and payrolls associated with each sector. Chapter

4 describes the methodology employed for assessing the competitiveness of individual industries in Oregon relative to other states in the Pacific Northwest and the United States. Chapter 5 specifically focuses on the agricultural value-added industry in Oregon, analyzes the importance of the agricultural value-added sector, and compares its advantageous and disadvantageous relative to the U.S. agricultural value-added industry. Chapter 6 presents research conclusions, policy implications, and guidance for future research.

## **Chapter 2**

### **Classification of Oregon's Economic Sectors**

Oregon's economy may be classified into eight major economic sectors: agriculture, lumber and wood, high-tech, other manufacturing, non-financial private services, financial services, other private services, and government services. This chapter defines industry composition of each sector based on the 2-4 digit SIC (Standard Industrial classification) codes. While the industry composition of most of sectors mentioned above are generally known to economic planners, the agricultural sector's industry coverage remains cumbersome. Accordingly, the main emphasis of this chapter is to define Oregon's agricultural sector, then explain the industry composition of other sectors.

#### **2.1 Oregon's Agricultural Sector: Definition of the Agricultural Sector**

##### **2.1.1 Review of Literature**

The methods in which the scope of the agricultural sector is defined varies widely across states. In reviewing previous state-level studies on the role of agriculture in a state's economy, inconsistencies exist in classifying the activities which make up

the agricultural sector. There are some states that limit their definition of agriculture to a very narrow scope. States such as North Dakota (Coon et al., 1992) and Texas (Amosson, 1992) include only livestock and crop production to determine the role of agriculture in their states' economy.

Other states include broader definitions of the agricultural sector in their studies. Additional activities that are incorporated into the agricultural sector are input production, food processing, food wholesaling and retailing, and agricultural services. For example California's study (Carter and Goldman, 1992) defines the agricultural sector to include farm production (including food, fiber, and ornamental floriculture and nursery products), agricultural services, agricultural manufacturing, and agricultural chemical industries.

Then there are some states that expand their agricultural scope even further to include natural resource based industries such as fishing, forestry, and mining/extraction. States such as New Jersey (Adelaja, 1988) precisely define their scope of agriculture to include "all activities such as fruit, crop, vegetable, livestock, greenhouse, nursery, forestry, and sod activities which are closely linked to agricultural production; related activities such as fisheries, trapping and equine activities which involve the use of land, water resources and agricultural products to



produce animal outputs; activities such as food manufacturing (processed meat, dairy products, preserved food and vegetables, grain mill products, bakery products, sugar and confectionery products, fats and oil products and beverage products) which involve the use of agricultural and fisheries products in producing food products; activities such as food wholesaling, food retailing, restauranting, meat and seafood sales, and fruit and vegetable marketing which involve the sale of food, fisheries and agricultural products; activities which involve the provision of marketing of goods and services used in agriculture and in food manufacturing; and activities involving the manufacturing of inputs used in agricultural and food production."

Clearly, the definition of agriculture differs widely from state to state.

According to a nationwide survey conducted by Leones, et al.<sup>2</sup> in 1994, which included only studies conducted since 1987, there have been twenty seven-state level studies.

As pointed out by Leones, the lack of common definition, linkages between sectors, and the goals of each individual study reflected differences between state economies.

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<sup>2</sup>Leones, Julie, Gerald Schluter, and George Goldman. Study presented at the 1994 AAEA Meetings in San Diego, CA.

Also, due to these vast differences, it is difficult to compare the agricultural impact on the economy of one state to that of another.

### **2.1.2 The Scope of Oregon's Agricultural Sector**

As discussed previously, there is currently no consensus among scholars regarding components of any state's agricultural sector. The majority of those who have researched the impacts of the agricultural sector on the state level were usually influenced by the fear of not being able to show high agricultural impacts. Consequently, the notion of "agribusiness" wrongly has been chosen as a replacement for agriculture sector. The spectrum of industries which have been included under the agricultural sector ranges from farm crops production (field crops for food and feed, vegetables, fruits and nuts trees); cotton; tobacco; livestock production; food processing; agricultural services and inputs; forestry; fishing, seafood, and aquaculture; hunting; fibers and textile; transportation; wholesale food trade; retail food stores and departments; restaurants and eating and drinking places and farm wines.

The choice of correct and ideal components of the agricultural sector depend on two major factors: the objective of the underlying studies, and data availability. Studies concerned with food and feed demand, competitiveness, comparative

advantage, and sectoral impact analysis for the purposes of regional economic development planning may choose different sub-sectors of agribusiness to conduct their studies. A demand for food study should choose the agricultural sector exclusive of nursery products. The reason being the quantity and prices of nursery products does not belong to consumer's demand functions for food products. In contrast, for agricultural sectoral impact analysis researchers should include only economic activities of soil related products on farm, manufacturing, and wholesale levels related to the production, maintenance, services and marketing of such products.

For Oregon's agricultural sector impact analysis, this study will include the economic activities that are soil related excluding timber, lumber, and forestry. Timber, lumber, and forestry are excluded from the agricultural sector for two reasons. First, their production time span is different from agricultural farm products and second, these industries may exist and be operative even if the region under study is not an agricultural region. For the latter reason, the economic activities such as retail trade related to food stores and restaurants should be excluded from the definition of the agricultural sector.

The lack of consistent state level data on production, processing, transportation, employment, trade, warehousing, and distribution imposes a serious burden on researchers to define an appropriate sector for agricultural activities. Currently,

conflicting values of production (sales), and value added (GSP) data are reported based on 2-4 digit SIC codes by ASM, BEA and OSU. the "origin of movement" trade data for corresponding products are reported based on highly aggregated SIC's (Standard Industrial Classification) by MISER, and disaggregated up to 10-digit U.S. -H.S. (U.S. schedule B, harmonized system) codes by PIERS (Product Import Export Reporting System) based on shippers export declaration zip codes (SEDs). The state level employment data estimated and reported by Oregon's Department of Human Resources for 2-4 digit SIC codes and generally includes only the covered employment.

In this study, as far as Oregon is concerned, the agriculture sector is defined as a sector which is concerned with the production and processing of human food, animal feed, and byproducts of these activities such as wool, hide, feathers, natural fibers, natural dyes, and all activities which would not exist in the absence of farm and food processing production activities. Specifically, Oregon's agriculture sector encompasses economic activities related to farm and food processing production at the farm, manufacturing, wholesale, and services levels, but excluding retail trade. The industry composition of Oregon's agricultural sector is presented in Table 1.

Table 1. Industry Composition of Oregon's Agriculture Sector

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>01</b> 0111 0119 0134 0139 0161 0171 0172 0173 0175 0179 0181 0182 0191	<b>Farm production -Crops</b>	Wheat Cash grains, nec Irish potatoes Field crops, ex. cash grains, nec Vegetables & melons Berry crops Grapes Tree nuts Deciduous tree fruits Fruits & tree nuts, nec Ornamental nursery products Food crops grown under cover General farms, primarily crop
<b>02</b> 0211 0212 0214 0241 0252 0253 0254 0271 0272 0273 0279 0299	<b>Farm Production-Livestock</b>	Beef cattle feedlots Beef cattle, except feedlots Sheep & goats Dairy farms Chicken eggs Turkeys & turkey eggs Poultry hatcheries Fur-bearing animals & rabbits Horses & other equines Animal aquaculture Animal specialties, nec Other Agricultural prod - livestock
<b>07</b> 0711 0721 0722 0723 0741	<b>Agricultural services</b>	Soil preparation services Crop planting & protecting Crop harvesting Crop preparation svcs for market Veterinary svcs for livestock

Table 1, Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
0742		Veterinary svcs, specialties
0751		Livestock svcs, exc. veterinary
0752		Animal specialty services
0761		Farm labor contractors
0762		Farm management services
0781		Landscape counseling & planning
0782		Lawn & garden services
0783		Ornamental shrub & tree services
<b>20</b>	<b>Food and kindred products</b>	
2011		Meat packing plants
2013		Sausages & other prepared meats
2015		Poultry slaughtering & processing
2022		Cheese, natural & processed
2023		Dry, condensed, evaporated prod.
2024		Ice cream & frozen desserts
2026		Fluid milk
2033		Canned fruits & vegetables
2034		Dehydrated fruits, veg., soups
2035		Pickles, sauces & salad dressings
2037		Frozen fruits & vegetables
2038		Frozen specialties, nec
2041		Flour & other grain mill products
2045		Prepared flour mixes & doughs
2047		Dog & cat food
2048		Prepared feeds, nec
2051		Bread, cake, & related products
2052		Cookies & crackers
2063		Beet sugar
2064		Candy & other confectionery prod.
2068		Salted & roasted nuts & seeds
2077		Animal & marine fats & oils
2082		Malt beverages
2084		Wines, brandy & brandy spirits
2086		Bottled & canned soft drinks

Table 1, Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
2087 2091 2092 2095 2096 2097 2099 2099		Flavoring extracts & syrups, nec Canned & cured fish & seafoods Fresh or frozen prepared fish Roasted coffee Potato chips & similar snacks Manufactured ice Food preparations, nec Other Food and kindred products
<b>28</b> 2824 2833 2865 2873 2875 2879	<b>Manufacturing: Chemicals and allied products</b>	Organic Fibers, noncellulosic Medicinals & botanicals Cyclic crudes & intermediates Nitrogenous fertilizers Fertilizers, mixing only Agricultural chemicals, nec
<b>50</b> 5083	<b>Wholesale durable goods</b>	Farm & garden machinery
<b>51</b> 5143 5144 5148 5153 5154 5159 5191	<b>Wholesale nondurable goods</b>	Dairy products, ex dried or canned Poultry & poultry products Fresh fruits & vegetables Grain & field beans Livestock Farm-product raw materials, nec Farm supplies

### **2.1.3 Oregon's Food Processing Industries by Classification**

Traditionally, agricultural products are classified into two major groups: Low Value Products (LVP) and High Value Products (HVP) [USDA-ERS, 1983]. There is limited literature available on the value-added product composition and its high value and low value concepts. Agricultural products have been classified into high and low value raw (bulk) and value-added products by several sources including Burfisher, Mary E., Margaret B. Missiaen, and Allen Blackman [April 1991]; Lee, Jung-Hee, David M. Henneberry, and David Pyles [1990]; USDA-ERS, 1983]; and USDA-FAS [January 1987].

High Value Products (HVP) are often divided into three groups: HVP semi-processed, HVP highly processed, and HVP unprocessed. Low value products (LVP) are broken down into LVP raw (bulk) and LVP semi-processed. The definition of "high value" products in USDA-ERS 1983 study is based on the idea of unit value and the extent of processing activities. In other words, this definition includes all products with value added through processing, as well as products with high unit value but no processing. Products with both low unit value and no processing are excluded from USDA-ERS "high value products" classification.



The USDA-FAS definition of “high value” includes products with value-added components regardless of the magnitude of the unit value. This definition of HVP includes products with both high and low unit value, as long as the product had value-added not only through processing, but also through transport, storage, and marketing. Therefore the FAS definition excludes products with high unit value but no value-added from the “high value” category.

A recent USDA-FAS-BIC study (1993), classifies agricultural products into bulk, intermediate and consumer-oriented groups. This classification implicitly assigns low and high values (in terms of time and net dollar value) to products from consumers points of view based on the readiness of products for consumption. For example, products which require less preparation are classified into high-value class of consumer-oriented products.

Clearly, inconsistencies exist in the classification of value-added agricultural products into high and low value categories. These inconsistencies include products with both high and low unit values that have value added through processing being classified as “high value”, as well as products with high unit value and little value added being classified as “low value”.

For the majority of agricultural products, the interest in value-added activities stems from the fact that such activities create jobs and hence more income for regions

involved in production of processed products. With regard to agricultural products, the magnitude of agricultural value-added activities depends on the extent that raw farm products such as grain and livestock are converted into food products for human and animal consumption. Previous studies that used the notion of high value and low value did not justify what constitutes a product to be classified as high value versus another as low value. Thus these studies are not clear about the criteria for grouping products under such classifications.

This study will attempt to classify the agricultural products based on the level of processing. Three classification will be used: bulk, semi-processed, and processed. Bulk commodities include live animals, all raw products (fresh or chilled), grains, and seeds. Semi-processed products include slaughtered animals and parts of animals, dried, preserved, and fermented products, husks, meal, and flour of grain, frozen products, juices, and oils. Processed commodities include consumer-ready products such as prepared meats, cheese, coffee, frozen or packaged meals, breads snacks, sauces, soft drinks, alcoholic beverages, and animal feed. In this study fish products are classified separately, again, as bulk, semi-processed, and processed fish products. (Appendix, Table 1)

## **2.2 Oregon's Wood Sector**

Oregon's wood sector encompasses three main wood related industries of lumber and wood products (SIC 24), furniture and fixtures (SIC 25), and paper and allied products (SIC 26). The 3-4 digit industry composition of wood sector is shown in Table 2.

## **2.3 Oregon's High-tech Sector**

Oregon's high-tech sector consists of three major industries of industrial machinery and equipment (SIC 35), Electronic and other electric equipment (SIC 36), and instruments and related products (SIC 38). The 3-4 digit industry composition of this sector is shown in Table 3.

## **2-4 Oregon's "Other" manufacturing Sector**

Oregon's "Other" manufacturing sector includes all manufacturing industries not included in agriculture and high-tech sectors. Other manufacturing sector encompasses 3-4 digit industries listed in Table 4.

Table 2. Industry composition of Oregon's Wood Sector

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>24</b>	<b>Lumber and wood products</b>	
2411		Logging
2421		Sawmills & planing mills, general
2426		Hardwood dimen. & flooring mills
2429		Special product sawmills, nec
2431		Millwork
2434		Wood kitchen cabinets
2435		Hardwood veneer & plywood
2436		Softwood veneer & plywood
2439		Structural wood members, nec
2441		Nailed wood boxes & shoo
2448		Wood pallets & skids
2449		Wood containers, nec
2451		Mobile homes
2452		Prefabricated wood buildings
2491		Wood preserving
2493		Reconstituted wood products
2499		Wood products, nec
<b>25</b>	<b>Furniture and fixtures</b>	
2511		Wood household furniture
2512		Upholstered household furniture
2515		Mattresses & bedsprings
2517		Wood tv & radio cabinets
2521		Wood office furniture
2522		Office furniture, except wood'
2531		Public building; related furniture
2541		Wood partitions & fixtures
2542		Partitions & fixtures, ex. wood
2591		Drapery hardware & blinds & shade
2599		Furniture & fixtures, nec
<b>26</b>	<b>Paper and allied products</b>	
2621		Paper mills
2631		Paperboard mills
2653		Corrugated & solid fiber boxes
2657		Folding paperboard boxes
2671		Paper coated & laminated, packag.
2672		Paper coated & laminated, nec
2673		Bags: plastics, laminated & coated
2674		Bags: uncoated paper & multiwall
2675		Die-cut paper & board
2679		Converted paper products, nec
2699		Other Paper and allied products

Table 3. Industry Composition of Oregon's High-tech Sector

SIC Code	Activity	Industry Description
<b>35</b>	<b>Industrial machinery &amp; Equipment</b>	
3511		Turbines & turbine generator sets
3523		Farm machinery & equipment
3524		Lawn & garden equipment
3531		Construction machinery
3532		Mining machinery
3535		Conveyors & conveying equipment
3537		Industrial trucks & tractors
3541		Machine tools, metal cutting types
3543		Industrial patterns
3544		Special dies, tools, jigs & fixt.
3545		Machine tool accessories
3546		Power-driven handtools
3552		Textile machinery
3553		Woodworking machinery
3554		Paper industries machinery
3555		Printing trades machinery
3556		Food products machinery
3559		Special industry machinery, nec
3561		Pumps & pumping equipment
3564		Blowers & fans
3565		Packaging machinery
3566		Speed changers, drives, & gears
3567		Industrial furnaces & ovens
3568		Power transmission equipment, nec
3569		General industrial machinery, nec
3571		Electronic computers
3572		Computer storage devices
3577		Computer peripheral equipment, nec
3578		Calculating & accounting equip.
3585		Refrigeration & heating equipment
3589		Service industry machinery, nec
3593		Fluid power cylinders & actuators
3599		Industrial machinery, nec

Table 3. Continued

SIC Code	Activity	Industry Description
3599		Other Industrial machinery & equipment
<b>36</b> 3612 3613 3621 3625 3631 3641 3643 3645 3648 3651 3661 3663 3669 3672 3674 3677 3679 3691 3694 3699 3699	<b>Electric &amp; Electronic Equipment</b>	Transformers, except electronic Switchgear & switchboard apparatus Motors & generators Relays & industrial controls Household cooking equipment Electric lamps Current-carrying wiring devices Residential lighting fixtures Lighting equipment, nec Household audio & video equipment Telephone & telegraph apparatus Radio & tv communications equip. Communications equipment, nec Printed circuit boards Semiconductors & related devices Electronic coils & transformers Electronic components, nec Storage batteries Engine electrical equipment Electrical equip. & supplies, nec Other Electric & electronic equipment
<b>38</b> 3812 3823 3825 3826 3827 3829 3841 3842	<b>Instruments &amp; Related Products</b>	Search & navigation equipment Process control instruments Instruments to measure electricity Analytical instruments Optical instruments & lenses Measur. & controlling devices, nec Surgical & medical instruments Surgical appliances & supplies

Table 3. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
3843 3844 3845 3851 3861 3899		Dental equipment & supplies X-ray apparatus & tubes Electromedical equipment Ophthalmic goods Photographic equipment & supplies Other Instruments & related products

Table 4. Industry Composition of Oregon's Other Manufacturing Sector

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>08</b>	<b>Forestry</b>	
<b>09</b>	<b>Fishing</b>	
<b>10</b> 1021 1041 1099	<b>Metal mining</b>	Copper ores Gold ores Other Metal mining
<b>13</b> 1311 1382	<b>Oil and gas extraction</b>	Crude petroleum & natural gas Oil & gas exploration services
<b>14</b> 1429 1442 1459 1481 1499 1499 9999	<b>Nometallic Minerals Excluding Fuels</b>	Crushed & broken stone, nec Construction sand & gravel Clay & related minerals, nec Nonmetallic minerals services Miscellaneous nonmetallic minerals Other Nometallic minerals ex fuels Other Mining
<b>22</b> 2231 2253 2261 2269 2299	<b>Textile mill products</b>	Broadwoven fabric mills, wool Knit outerwear mills Finishing plants, cotton Finishing plants, nec Other Textile mill products
<b>23</b> 2329 2337 2339 2385 2389 2391 2392	<b>Apparel &amp; Other Textile Products</b>	Men's & boys' clothing, nec Women's & misses' suits & coats Women's & misses' outerwear, nec Waterproof outerwear Apparel & accessories, nec Curtains & draperies Housefurnishings, nec



Table 4. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
2393 2394 2395 2396 2399 2399		Textile bags Canvas & related products Pleating & stitching Automotive & apparel trimmings Fabricated textile products, nec Other Apparel & other textile product
27 2711 2721 2731 2732 2741 2752 2759 2761 2771 2782 2789 2791 2796	<b>Printing &amp; publishing</b>	Newspapers Periodicals Book publishing Book printing Miscellaneous publishing Commercial printing, lithographic Commercial printing, nec Manifold business forms Greeting cards Blankbooks & looseleaf binders Bookbinding & related work Typesetting Platemaking services
28 2819 2821  2834 2835 2836 2841 2842 2844 2851 2891	<b>Chemicals and Allied Products</b>	Industrial inorganic chem., nec Plastics materials & resins  Pharmaceutical preparations Diagnostic substances Biological products ex. diagnostic Soap & other detergents Polishes & sanitation goods Toilet preparations Paints & allied products Adhesives & sealants

Table 4. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
2893 2899 2899		Printing ink Chemical preparations, nec Other Chemicals and allied products
<b>29</b> 2951 2952 2992	<b>Petroleum and Coal Products</b>	Asphalt paving mixtures & blocks Asphalt felts & coatings Lubricating oils & greases
<b>30</b> 3011 3052 3053 3061 3069 3081 3082 3083 3084 3086 3087 3088 3089	<b>Rubber &amp; Misc. Plastic Products</b>	Tires & inner tubes Rubber & plastics hose & belting Gaskets, packing & sealing devices Mechanical rubber goods Fabricated rubber products, nec Unsupported plastics film & sheet Unsupported plast. profile shapes Laminated plastics plate & sheet Plastics pipe Plastics foam products Custom compound purchased resins Plastics plumbing fixtures Plastics products, nec
<b>31</b> 3111 3143 3151 3161 3172 3199 3199	<b>Leather &amp; Leather Products</b>	Leather tanning & finishing Men's footwear, except athletic Leather gloves & mittens Luggage Personal leather goods, nec Leather goods, nec Other Leather & leather products

Table 4. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>32</b> 3229 3231 3241 3253 3262 3269 3271 3272 3273 3281 3291 3295 3297 3299 3299	<b>Stone, Clay &amp; Glass Products</b>	Pressed & blown glass, nec Products of purchased glass Cement, hydraulic Ceramic wall & floor tile Vitreous china table & kitchenware Pottery products, nec Concrete block & brick Concrete products, nec Ready-mixed concrete Cut stone & stone products Abrasive products Minerals, ground or treated Nonclay refractories Nonmetallic mineral products, nec Other Stone, clay & glass products
<b>33</b> 3312 3321 3324 3325 3339 3341 3357 3363 3364 3365 3366 3369 3398 3399 3399	<b>Primary Metal Industries</b>	Blast furnaces & steel mills Gray & ductile iron foundries Steel investment foundries Steel foundries, nec Primary nonferrous metals, nec Secondary nonferrous metals Nonferrous wiredrawing & insulat. Aluminum die-castings Nonferrous die-casting ex aluminum Aluminum foundries Copper foundries Nonferrous foundries, nec Metal heat treating Primary metal products, nec Other Primary metal industries

Table 4. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>34</b> 3411 3412 3421 3423 3425 3429 3433 3441 3442 3443 3444 3446 3448 3451 3452 3462 3465 3469 3471 3479 3482 3484 3492 3495 3496 3498 3499 3499	<b>Fabricated Metal Products</b>	Metal cans Metal barrels, drums, & pails Cutlery Hand & edge tools, nec Saw blades & handsaws Hardware, nec Heating equipment, ex. electric Fabricated structural metal Metal doors, sash, & trim Fab. plate work (boiler shops) Sheet metalwork Architectural metal work Prefabricated metal buildings Screw machine products Bolts, nuts, rivets, & washers Iron & steel forgings Automotive stampings Metal stampings, nec Plating & polishing Metal coating & allied services Small arms ammunition Small arms Fluid power valves & hose fittings Wire springs Misc. fabricated wire products Fabricated pipe & fittings Fabricated metal products, nec Other Fabricated metal products
<b>37</b> 3711 3713 3714	<b>Transportation Equipment</b>	Motor vehicles & car bodies Truck & bus bodies Motor vehicle parts & accessories

Table 4. Continued

SIC Code	Activity	Industry Description
3715 3716 3721 3728 3731 3732 3743 3751 3792 3799		Truck trailers Motor homes Aircraft Aircraft parts & equipment, nec Ship building & repairing Boat building & repairing Railroad equipment Motorcycles, bicycles, & parts Travel trailers & campers Transportation equipment, nec
39 3911 3931 3942 3944 3949 3952 3953 3955 3991 3993 3999 9999	<b>Misc. Mfg. Industries</b>	Jewelry, precious metal Musical instruments Dolls & stuffed toys Games, toys & children's vehicles Sporting & athletic goods, nec Lead pencils & art goods Marking devices Carbon paper & inked ribbons Brooms & brushes Signs & advertising specialities Manufacturing industries, nec Other Misc. mfg. industries Other Manufacturing

## **2.5 Oregon's Private Non-financial Service Sector**

For the purpose of this study, Oregon's service industries are classified under four different sectors of non-financial private services, financial services, other private service, and government services. The non-financial private service sector consist of construction services, transportation and utility services, and whole sale and retail trade services. Table 5 lists 2-4 digit SIC code industries comprising this sector activities.

## **2.6 Oregon's Financial Service Sector**

Oregon's financial service sector includes all institutions providing financial services to Oregon's economy. This sector consist of depository and non-depository institutions, insurance services, real estate activities, holding companies and investment services. Table 6 describes 2-4 digit SIC code industries included in this sector.

Table 5. Composition of Oregon's Nonfinancial Private Service Sector

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Composition</b>
<b>16</b> 1611 1622 1623 1629	<b>Heavy construction contractors</b>	Highway & street construction Bridge, tunnel & elevated highway Water, sewer, & utility lines Heavy construction, nec
<b>17</b> 1711 1721 1731 1741 1742 1743 1751 1752 1761 1771 1781 1791 1793 1794 1795 1796 1799	<b>Special trade contractors</b>	Plumbing, heating, air-condition. Painting & paper hanging Electrical work Masonry & other stonework Plastering, drywall & insulation Terrazzo, tile, marble, mosaic wrk Carpentry work Floor laying & floor work, nec Roofing, siding & sheet metal work Concrete work Water well drilling Structural steel erection Glass & glazing work Excavation work Wrecking & demolition work Installing building equipment, nec Special trade contractors, nec
<b>41</b> 4111 4119 4121 4131 4142 4151 4173	<b>Local &amp; interurban transit</b>	Local & suburban transit Local passenger trans., nec Taxicabs Intercity & rural bus trans. Bus charter service, ex local School buses Bus terminal & service facilities

Table 5. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Composition</b>
<b>42</b> 4212 4213 4214 4215 4221 4222 4225 4226	<b>Trucking and warehousing</b>	Local trucking without storage Trucking, except local Local trucking with storage Courier services, except by air Farm product warehousing & storage Refrigerated warehousing & storage General warehousing & storage Special warehousing & storage, nec
<b>44</b> 4412 4424 4449 4489 4491 4492 4493 4499	<b>Water transportation</b>	Deep sea foreign trans. of freight Deep sea domestic trans. - freight Water trans. of freight, nec Water passenger trans., nec Marine cargo handling Towing & tugboat service Marinas Water trans. services, nec
<b>45</b> 4512 4513 4522 4581	<b>Transportation by air</b>	Air transportation, scheduled Air courier services Air transportation, nonscheduled Airports, flying fields, & svcs
<b>47</b> 4724 4725 4729 4731 4741 4783 4785 4789	<b>Transportation services</b>	Travel agencies Tour operators Passenger trans. arrangement, nec Freight trans. arrangement Rental of railroad cars Packing & crating Inspection & fixed facilities Transportation services, nec



Table 5. Continued

SIC Code	Activity	Industry Composition
<b>48</b> 4812 4813 4822 4832 4833 4841	<b>Communication</b>	Radiotelephone communications Telephone communications, ex radio Telegraph & other communications Radio broadcasting stations Television broadcasting stations Cable & other pay tv services
<b>49</b> 4911 4924 4941 4952 4953 4959 4971 9999	<b>Electric, gas and sanitary services</b>	Electric services Natural gas distribution Water supply Sewerage systems Refuse systems Sanitary services, nec Irrigation systems Other Trans., Comm., and Utilities
<b>50</b> 5012 5013 5014 5015 5021 5023 5031 5032 5033 5039 5043 5044 5045 5046	<b>Wholesale durable goods</b>	Automobiles & other motor vehicles Motor vehicle supplies & new parts Tires & tubes Motor vehicle parts, used Furniture Homefurnishings Lumber, plywood, & millwork Brick, stone, & related materials Roofing, siding, & insulation Construction materials, nec Photographic equipment & supplies Office equipment Computers, peripherals & software Commercial equipment, nec

Table 5. Continued

SIC Code	Activity	Industry Composition
5047		Medical & hospital equipment
5048		Ophthalmic goods
5049		Professional equipment, nec
5051		Metals service centers & offices
5063		Electrical apparatus & equipment
5064		Electrical appliances, tv & radios
5065		Electronic parts & equipment
5072		Hardware
5074		Plumbing & hydronic heat. supplies
5075		Warm air heating & air-condition.
5078		Refrigeration equipment & supplies
5082		Construction & mining machinery
5084		Industrial machinery & equipment
5085		Industrial supplies
5087		Service establishment equipment
5088		Transportation equip. & supplies
5091		Sporting & recreational goods
5092		Toys & hobby goods & supplies
5093		Scrap & waste materials
5094		Jewelry & precious stones
5099		Durable goods, nec
<b>51</b>	<b>Wholesale nondurable goods</b>	
5111		Printing & writing paper
5112		Stationery & office supplies
5113		Indust. & personal service paper
5122		Drugs, proprietaries, & sundries
5131		Piece goods & notions
5136		Men's & boys' clothing
5137		Women's & children's clothing
5139		Footwear
5141		Groceries, general line
5142		Packaged frozen foods
5145		Confectionery

Table 5. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Composition</b>
5146		Fish & seafoods
5147		Meats & meat products
5149		Groceries & related products, nec
5162		Plastics materials & basic shapes
5169		Chemicals & allied products, nec
5171		Petroleum bulk stations & terminals
5172		Petroleum products, nec
5181		Beer & ale
5182		Wine & distilled beverages
5192		Books, periodicals, & newspapers
5193		Flowers & florists' supplies
5194		Tobacco & tobacco products
5198		Paints, varnishes, & supplies
5199		Nondurable goods, nec
<b>52</b>	<b>Retail Trade Bldg. material &amp; garden supplies</b>	
5211		Lumber & other building materials
5231		Paint, glass, & wallpaper stores
5251		Hardware stores
5261		Retail nurseries & garden stores
5271		Mobile home dealers
<b>53</b>	<b>General merchandise stores</b>	
5311		Department stores
5331		Variety stores
5399		Misc. general merchandise stores
<b>54</b>	<b>Food stores</b>	
5411		Grocery stores
5421		Meat & fish markets
5431		Fruit & vegetable markets
5441		Candy, nut & confectionery stores

Table 5. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Composition</b>
5451 5461 5499		Dairy products stores Retail bakeries Miscellaneous food stores
<b>55</b> 5511 5521 5531 5541 5551 5561 5571 5599	<b>Auto dealers &amp; service stations</b>	New & used car dealers Used car dealers Auto & home supply stores Gasoline service stations Boat dealers Recreational vehicle dealers Motorcycle dealers Automotive dealers, nec
<b>56</b> 5611 5621 5632 5641 5651 5661 5699	<b>Apparel &amp; accessory stores</b>	Men's & boys' clothing stores Women's clothing stores Women's acces. & specialty stores Children's & infants' wear stores Family clothing stores Shoe stores Misc. apparel & accessory stores
<b>57</b> 5712 5713 5714 5719 5722 5731 5734 5735	<b>Furniture. &amp; home furnishings stores</b>	Furniture stores Floor covering stores Draperies & upholstery stores Misc. homefurnishings stores Household appliance stores Radio, tv, & electronic stores Computer & software stores Record & prerecorded tape stores

Table 5. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Composition</b>
5736		Musical instrument stores
<b>58</b>	<b>Eating and drinking places</b>	
5812		Eating places
5813		Drinking places
<b>59</b>	<b>Miscellaneous retail</b>	
5912		Drug stores & proprietary stores
5921		Liquor stores
5932		Used merchandise stores
5941		Sporting goods & bicycle shops
5942		Book stores
5943		Stationery stores
5944		Jewelry stores
5945		Hobby, toy, & game shops
5946		Camera & photog. supply stores
5947		Gift, novelty, & souvenir shops
5948		Luggage & leather goods stores
5949		Sewing, needlework, & piece goods
5961		Catalog & mail-order houses
5962		Merchandising machine operators
5963		Direct selling establishments
5983		Fuel oil dealers
5984		Liquefied petroleum gas dealers
5989		Fuel dealers, nec
5992		Florists
5993		Tobacco stores & stands
5994		News dealers & newsstands
5995		Optical goods stores
5999		Miscellaneous retail stores, nec

Table 6. Industry Composition of Oregon's Financial Service Sector

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>60</b> 6021 6022 6035 6036 6061 6062 6081 6091 6099	<b>Finance, Insurance &amp; Real Estate</b> <b>Depository institutions</b>	National commercial banks State commercial banks Federal savings institutions Savings institutions, ex federal Federal credit unions State credit unions Foreign bank & branches & agencies Nondeposit trust facilities Functions related to dep. banking
<b>61</b> 6141 6153 6159 6162 6163	<b>Nondepository institutions</b>	Personal credit institutions Short-term business credit Misc. business credit institutions Mortgage bankers & correspondents Loan brokers
<b>62</b> 6211 6221 6282 6289	<b>Security commodity brokers/services</b>	Security brokers & dealers Commodity cont. brokers, dealers Investment advice Security & commodity svcs, nec
<b>63</b> 6311 6321 6324 6331 6351 6361 6371	<b>Insurance carriers</b>	Life insurance Accident & health insurance Hospital & medical service plans Fire, marine, & casualty insurance Surety insurance Title insurance Pension, health, & welfare funds

Table 6. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>64</b> 6411	<b>Finance, Insurance &amp; Real Ins. agents brokers &amp; service</b>	Insurance agents, brokers & svcs
<b>65</b> 6512 6513 6514 6515 6519 6531 6541 6552 6553	<b>Real estate</b>	Nonresidential building operators Apartment building operators Dwelling operators, ex apartments Mobile home site operators Real property lessors, nec Real estate agents & managers Title abstract offices Subdividers & developers, nec Cemetery subdividers & developers
<b>67</b> 6712 6719 6732 6733 6794 6798 6799 6799 9999	<b>Holding &amp; other invest. office</b>	Bank holding companies Holding companies, nec Educational, religious etc. trusts Trusts, nec Patent owners & lessors Real estate investment trusts Investors, nec Other Holding & other invest. offices Other Finance, Insurance & R. Estat

## **2.7 Oregon's "Other" Private Service Sector**

All private service industries not included in two previous sectors are listed under "other private service sector. This sector mainly consists of services related to hotels, personal and business, auto repairs, motion picture, amusement, recreation, health, education, legal, and social activities. The 2-4 digit SIC code industry composition of this sector is shown in Table 7.

## **2.8 Oregon's Government Service Sector**

Oregon's public service sector consists of services provided by federal, state, and local governments. Table 8 shows industry coverage of this sector based on 2-4 digit SIC codes.



Table 7. Composition of Oregon's Other Private Service Sector

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>70</b> 7011 7021 7032 7033 7041	<b>Hotels &amp; other lodging places</b>	Hotels & motels Rooming & boarding houses Sporting & recreational camps Trailer parks & campsites Membership-basis organiz. hotels
<b>72</b> 7211 7212 7213 7215 7216 7217 7218 7219 7221 7231 7241 7251 7261 7291 7299	<b>Personal services</b>	Power laundries, family & comm'l Garment pressing & cleaners agents Linen supply Coin-operated laundries & cleaning Drycleaning plants, except rug Carpet & upholstery cleaning Industrial launderers Laundry & garment services, nec Photographic studios, portrait Beauty shops Barber shops Shoe repair & shoeshine parlors Funeral service & crematories Tax return preparation services Miscellaneous personal svcs, nec
<b>73</b> 7311 7312 7313 7319 7322 7323 7331 7334 7335 7336	<b>Business services</b>	Advertising agencies Outdoor advertising services Radio, tv, publisher rep. Advertising, nec Adjustment & collection services Credit reporting services Direct mail advertising services Photocopying & duplicating svcs Commercial photography Commercial art & graphic design

Table 7. Continued

SIC Code	Activity	Industry Description
7338		Secretarial & court reporting
7342		Disinfecting & pest control svcs
7349		Building maintenance services, nec
7352		Medical equipment rental
7353		Heavy construction equip. rental
7359		Equipment rental & leasing, nec
7361		Employment agencies
7363		Help supply services
7371		Computer programming services
7372		Prepackaged software
7373		Computer integrated systems design
7374		Data processing & preparation
7375		Information retrieval services
7376		Computer facilities management
7377		Computer rental & leasing
7378		Computer maintenance & repair
7379		Computer related services, nec
7381		Detective & armored car services
7382		Security systems services
7383		News syndicates
7384		Photofinishing laboratories
7389		Business services, nec
<b>75</b>	<b>Auto repair, services &amp; garage</b>	
7513		Truck rental & leasing, no drivers
7514		Passenger car rental
7515		Passenger car leasing
7519		Utility trailer rental
7521		Automobile parking
7532		Top & body repair & paint shops
7533		Auto exhaust system repair shops
7534		Tire retreading & repair shops
7536		Automotive glass replacement shops
7537		Automotive trans. repair shops
7538		General automotive repair shops

Table 7. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
7539 7542 7549		Automotive repair shops, nec Carwashes Automotive services, nec
<b>76</b> 7622 7623 7629 7631 7641 7692 7694 7699	<b>Miscellaneous repair services</b>	Radio & television repair Refrigeration service & repair Electrical repair shops, nec Watch, clock, & jewelry repair Reupholstery & furniture repair Welding repair Armature rewinding shops Repair services, nec
<b>78</b> 7812 7819 7822 7832 7833 7841	<b>Motion pictures</b>	Motion picture & video production Svcs allied to motion pictures Motion picture & tape distribution Motion picture theat., ex drive-in Drive-in motion picture theaters Video tape rental
<b>79</b> 7911 7922 7929 7933 7941 7948 7991 7992 7993 7996 7997 7999	<b>Amusement &amp; recreation</b>	Dance studios, schools, & halls Theatrical producers & services Entertainers & entertain. groups Bowling centers Sports clubs, managers, & promo. Racing, including track operation Physical fitness facilities Public golf courses Coin-operated amusement devices Amusement parks Membership sports & rec. clubs Amusement & recreation, nec

Table 7. Continued

SIC Code	Activity	Industry Description
<b>80</b> 8011 8021 8031 8041 8042 8043 8049 8051 8052 8059 8062 8063 8069 8071 8072 8082 8092 8093 8099	<b>Health services</b>	Offices & clinics of med. doctors Offices & clinics of dentists Offices of osteopathic physicians Offices & clinics of chiropractors Offices & clinics of optometrists Offices & clinics of podiatrists Offices of health practition., nec Skilled nursing care facilities Intermediate care facilities Nursing & personal care, nec General medical & surg. hospitals Psychiatric hospitals Specialty hospitals ex psychiatric Medical laboratories Dental laboratories Home health care services Kidney dialysis centers Specialty outpatient clinics, nec Health & allied services, nec
<b>81</b> 8111	<b>Legal services</b>	Legal services
<b>82</b> 8211 8221 8222 8231 8243 8244 8249 8299	<b>Educational services</b>	Elementary & secondary schools Colleges & universities Junior colleges Libraries Data processing schools Business & secretarial schools Vocational schools, nec Schools & educational svcs, nec

Table 7. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>83</b> 8322 8331 8351 8361 8399	<b>Social services</b>	Individual & family services Job training & related services Child day care services Residential care Social services, nec
<b>84</b> 8412 8422	<b>Museums, gardens and zoos</b>	Museums & art galleries Botanical & zoological gardens
<b>86</b> 8611 8621 8631 8641 8651 8661 8699	<b>Membership organizations</b>	Business associations Professional organizations Labor organizations Civic & social associations Political organizations Religious organizations Membership organizations, nec
<b>87</b> 8711 8712 8713 8721 8731 8732 8733 8734 8741 8742 8743 8744 8748	<b>Engineering &amp; management</b>	Engineering services Architectural services Surveying services Account., auditing, & bookkeeping Commercial physical research Commercial nonphysical research Noncommercial research organiz. Testing laboratories Management services Management consulting services Public relations services Facilities support services Business consulting, nec

Table 7. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
<b>88</b> 8811	<b>Private households</b>	Private households
<b>89</b> 8999	<b>Miscellaneous services</b>	Services, nec

Table 8. Composition of Oregon's Government Service Sector

SIC Code	Activity	Industry Description
	<b>Federal Government</b>	
	<b>Agriculture, Forestry &amp; Fishing</b>	
0811		Timber tracts
	<b>Trans., Comm., and Utilities</b>	
4311		U.S. Postal Service
4911		Electric services
	<b>Finance, Insu. &amp; Real Estate</b>	
6111		Federal & fed.-sponsored credit
6399		Insurance carriers, nec
6553		Cemetery subdividers & developers
	<b>Services</b>	
7999		Amusement & recreation, nec
8059		Nursing & personal care, nec
8062		General medical & surg. hospitals
8211		Elementary & secondary schools
8399		Social services, nec
8711		Engineering services
8999		Services, nec
	<b>Public Administration</b>	
9199		General government, nec
9211		Courts
9221		Police protection
9222		Legal counsel & prosecution
9223		Correctional institutions
9229		Public order & safety, nec
9311		Fin., taxation & monetary policy
9431		Admin. of public health programs
9441		Admin. of social & manpower prog.
9451		Administration of vets' affairs
9511		Air, water, & solid waste mgmt
9512		Land, mineral, wildlife conserv.
9531		Housing programs
9532		Urban & community development
9611		Admin. of general economic prog.

Table 8. Continued

SIC Code	Activity	Industry Description
9621		Regulation, admin. of trans.
9631		Regulation, admin. of util.
9641		Regulation of ag. marketing
9651		Regulation misc. comm'l sectors
9711		National security
9721		International affairs
	<b>State Government</b>	
	<b>Agriculture, Forestry &amp; Fishing</b>	
0811		Timber tracts
0831		Forest products
	<b>Construction</b>	
1611		Highway & street construction
	<b>Manufacturing</b>	
2752		Commercial printing, lithographic
	<b>Trans., Comm., and Utilities</b>	
4813		Telephone communications, ex radi
4833		Television broadcasting stations
	<b>Finance, Insu. &amp; Real Estate</b>	
6371		Pension, health, & welfare funds
6519		Real property lessors, nec
	<b>Services</b>	
7999		Amusement & recreation, nec
8051		Skilled nursing care facilities
8062		General medical & surg. hospitals
8063		Psychiatric hospitals
8111		Legal services
8211		Elementary & secondary schools
8221		Colleges & universities
8231		Libraries
8322		Individual & family services
8331		Job training & related services
8361		Residential care
8399		Social services, nec



Table 8. Continued

<b>SIC Code</b>	<b>Activity</b>	<b>Industry Description</b>
8611 9111 9121 9199 9211 9221 9222 9223 9229 9311 9411 9431 9441 9451 9511 9512 9532 9611 9621 9641 9651 9711	<b>Public Administration</b>	Business associations Executive offices Legislative bodies General government, nec Courts Police protection Legal counsel & prosecution Correctional institutions Public order & safety, nec Fin., taxation & monetary policy Admin. of educational programs Admin. of public health programs Admin. of social & manpower prog. Administration of vets' affairs Air, water, & solid waste mgmt Land, mineral, wildlife conserv. Urban & community development Admin. of general economic prog. Regulation, admin. of trans. Regulation of ag. marketing Regulation misc. comm'l sectors National security
0782 1611 4111 4119 4491 4493 4899	<b>Local Government Agriculture, Forestry &amp; Fishing Construction Trans., Comm., and Utilities</b>	Lawn & garden services Highway & street construction Local & suburban transit Local passenger trans., nec Marine cargo handling Marinas Other Communication

Table 8. Continued

SIC Code	Activity	Industry Description
4911		Electric services
4931		Electric & other services combined
4941		Water supply
4952		Sewerage systems
4953		Refuse systems
4959		Sanitary services, nec
4971		Irrigation systems
9999		Other Trans., Comm., and Utilities
	<b>Finance, Insu &amp; Real Estate</b>	
6331		Fire, marine, & casualty insurance
6512		Nonresidential building operators
6531		Real estate agents & managers
6553		Cemetery subdividers & developers
6599		Other Real estate
	<b>Services</b>	
7389		Business services, nec
7999		Amusement & recreation, nec
8051		Skilled nursing care facilities
8062		General medical & surg. hospitals
8099		Other Health services
8211		Elementary & secondary schools
8222		Junior colleges
8231		Libraries
8322		Individual & family services
8331		Job training & related services
8399		Social services, nec
8412		Museums & art galleries
8699		Other Membership organizations
9999		Other Services
	<b>Public Administration</b>	
9111		Executive offices
9131		Executive & legislative combined
9199		General government, nec
9224		Fire protection
9229		Public order & safety, nec

Table 8. Continued

SIC Code	Activity	Industry Description
9411		Admin. of educational programs
9511		Air, water, & solid waste mgmt
9512		Land, mineral, wildlife conserv.
9531		Housing programs
9532		Urban & community development
9611		Admin. of general economic prog.
9621		Regulation, admin. of trans.
9631		Regulation, admin. of util.
9641		Regulation of ag. marketing
9999		Other Public Administration

## Chapter 3

### An Overview of Oregon's Economy

#### 3.1. Oregon's Gross State Product (GSP) by Industry

According to the data obtained from the Bureau of Economic Analysis of the U.S. Department of Commerce, Oregon's GSP, which is equivalent to the state's GDP (gross domestic product) amounted to about \$72 billion in 1995 (Table 2).<sup>3</sup> A breakdown of these eight sectors shows the share of each sector in Oregon's economy for 1995: non-financial private sector (wholesale and retail trade, construction, transportation, communications, and utilities) twenty-eight percent, financial services eighteen percent, other private services eighteen percent, government services twelve percent, agriculture seven percent, wood industries seven percent, other manufacturing five percent, high-tech industries five percent (figure 1).

These findings indicate that a major portion of Oregon's economic activities are focused on the service sectors. The private non-financial services sector largely consists of retail and wholesale trade (SIC 50-59). The major contributors to the

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<sup>3</sup>This data is reported based on Standard Industrial Classification (SIC) Codes.

financial services sector are real estate (SIC 65) and depository institutions (SIC 60). In other private services (figure 2) the largest contributors are health services (SIC 80) and business services (SIC 73). Oregon's government services sector, mainly at the state and local level, is also a significant factor in Oregon's GSP. Of the remaining industries, agriculture relies mainly on farm production (SIC 01-02) and processed food and kindred products (SIC 20), wood industries mainly depend on lumber and wood products (SIC 24). Contributions to other manufacturing industries are made mainly by printing and publishing (SIC 27) and metal products (SIC 33-34). Major contributions to high-tech industries are mainly from electronic equipment (SIC 36), industrial machinery (SIC 35), and instrument (SIC 38).

Table 9. Oregon Gross State Product (Million \$) by 2 digit SIC 1992-1995

SIC Code	Sector/Industry Description	1992	1993			1994		
			current	chain-type q index	chain-type p index	current	chain-type q index	chain-type p index
All	<b>All industries</b>	62724	65797	64104	64355	69624	66362	65860
	<b>Sector Sum</b>		65439	63621	63607	69108	65471	65253
	<b>Agriculture</b>	4532	4715	4634	4608	4937	4785	4676
01-02	Farms	1553	1609	1584	1576	1680	1634	1596
07	Agricultural Services	434	460	444	450	484	454	463
20	Food and Kindred products	1185	1228	1209	1203	1282	1247	1218
28 (Ag)	Chemicals and Allied products	81	84	82	82	87	85	83
50 (Ag)	Wholesale durable goods	191	207	205	193	227	220	197
51 (Ag)	Wholesale nondurable goods	1088	1127	1110	1104	1177	1145	1119
	<b>Wood industries</b>	3963	4304	4253	4015	4712	4558	4098
24	Lumber and wood products	3078	3343	3303	3118	3660	3540	3183
25	Furniture and Fixtures	124	135	133	126	147	143	128
26	Paper and allied products	761	826	817	771	905	875	787
	<b>High-tech industries</b>	2636	2863	2829	2670	3134	3032	2726
35	Industrial machinery and equipment	726	788	779	735	863	835	751
36	Electronic & other electric equipment	1217	1322	1306	1233	1447	1400	1258
38	Instruments and related products	693	753	744	702	824	797	717
	<b>Other Manufacturing</b>	3030	3290	3251	3068	3601	3486	3133
08								
08-09	Forestry & Fishery	878	921.02	897.31701	900.830464	974.59	928.92411	921.8972
10	Metal Mining	4	4	4	4	5	5	4
13	Oil and gas extraction	1	1	1	1	1	1	1
14	Nonmetallic minerals, excluding fuels	64	70	69	65	76	74	66
21	Tobacco manufactures	0	0	0	0	0	0	0
22	Textile mill products	65	71	70	66	77	75	67
23	Apparel and other textiles	71	77	76	72	84	82	73

Table 9. Continued

SIC Code	Sector/Industry Description	1992	1993			1994		
			current	chain-type q index	chain-type p index	current	chain-type q index	chain-type p index
27	Printing and publishing	705	766	756	714	838	811	729
28	Chemical and allied products	107	116	115	108	127	123	111
29	Petroleum and coal products	59	64	63	60	70	68	61
30	Rubber & miscel. plastics products	192	209	206	194	228	221	199
32	Stone, clay and glass products	180	195	193	182	214	207	186
33	Primary metal products	587	637	630	595	698	675	607
34	Fabricated Metal products	487	529	523	493	579	560	504
37	Motor Vehicles and equipment	329	357	353	333	391	378	340
39	Mescel. manufacturing industries	179	194	192	181	213	206	185
	<b>Private Non-Financial Services</b>	17470	18515	17887	18096	19495	18272	18638
15-17	Construction	2540	2692	2601	2631	2835	2657	2710
41	Local & interurban passenger transit	101	107	103	105	113	106	108
42	Trucking and warehousing	1314	1393	1346	1361	1466	1374	1402
44	Water transportation	154	163	158	160	172	161	164
45	Transportation by air	379	402	388	393	423	396	404
47	Transportation Services	220	233	225	228	246	230	235
48	Communications	1508	1596	1542	1560	1681	1575	1607
49	Electric, gas, and sanitary services	1685	1786	1725	1746	1880	1763	1798
50-51	Wholesale trade	3490	3699	3574	3616	3895	3651	3724
52-59	Retail trade	6079	6444	6225	6296	6784	6359	6486
	<b>Financial Services</b>	10997	11656	11259	11395	12273	11505	11733
60	Depository institutions	1686	1787	1726	1747	1882	1764	1799
61	Non-depository institutions	268	284	274	278	299	280	286
63	Insurance carriers	767	813	785	795	856	802	818
64	Insurance agents, brokers, & services	407	431	417	422	454	428	434
65	Real estate	7603	8059	7785	7877	8485	7953	8112

Table 9. Continued

SIC Code	Sector/Industry Description	1992	1993			1994		
			current	chain-type q index	chain-type p index	current	chain-type q index	chain-type p index
67	Holding Co.s & investment services	266	282	272	276	297	278	284
	<b>Other Private Services</b>	11359	12041	11631	11768	12678	11882	12117
70	Hotels and other lodging places	464	492	475	481	518	485	495
72	Personal services	430	456	440	445	480	450	459
73	Business services	2104	2230	2154	2180	2348	2201	2245
75	Auto repair, services, and parking	631	669	646	654	704	660	673
76	Miscellaneous repair services	230	244	236	238	257	241	245
78	Motion picture	110	117	113	114	123	115	117
79	Amusement and recreation services	395	419	404	409	441	413	421
80	Health services	3871	4103	3964	4010	4320	4049	4130
81	Legal services	718	761	735	744	801	751	766
82	Educational services	320	339	328	332	357	335	341
83-86	Social Services organizations	791	838	810	819	883	827	844
88	Private households	82	87	84	85	92	86	87
89	Other services	1213	1286	1242	1257	1354	1269	1294
	<b>Government Services</b>	7813	8054	7875	7987	8277	7957	8128
-	Federal civilian government	1654	1636	1593	1697	1618	1535	1743
-	Federal military government	217	215	209	223	212	201	229
-	State and local government	5942	6203	6073	6067	6447	6221	6156



Table 9. Continued

SIC Code	Sector/Industry Description	1995		
		current	chain-type q index	chain-type p index
All	<b>All industries</b>	72760	67679	67491
	<b>Sector Sum</b>	72511	67240	67449
	<b>Agriculture</b>	5139	4895	4764
01-02	Farms	1746	1671	1623
07	Agricultural Services	510	464	482
20	Food and Kindred products	1332	1275	1238
28 (Ag)	Chemicals and Allied products	91	87	84
50 (Ag)	Wholesale durable goods	237	227	200
51 (Ag)	Wholesale nondurable goods	1223	1171	1137
	<b>Wood industries</b>	4918	4712	4154
24	Lumber and wood products	3820	3660	3226
25	Furniture and Fixtures	154	147	130
26	Paper and allied products	944	905	798
	<b>High-tech industries</b>	3271	3134	2762
35	Industrial machinery and equipment	901	863	761
36	Electronic & other electric equipment	1510	1447	1275
38	Instruments and related products	860	824	726
	<b>Other Manufacturing</b>	3758	3601	3175
08				
08-09	Forestry & Fishery	921.8972	947.35926	944.72766
10	Metal Mining	5	5	4
13	Oil and gas extraction	1	1	1
14	Nonmetallic minerals, excluding fuels	79	76	67
21	Tobacco manufactures	0	0	0
22	Textile mill products	81	77	68
23	Apparel and other textiles	88	84	74

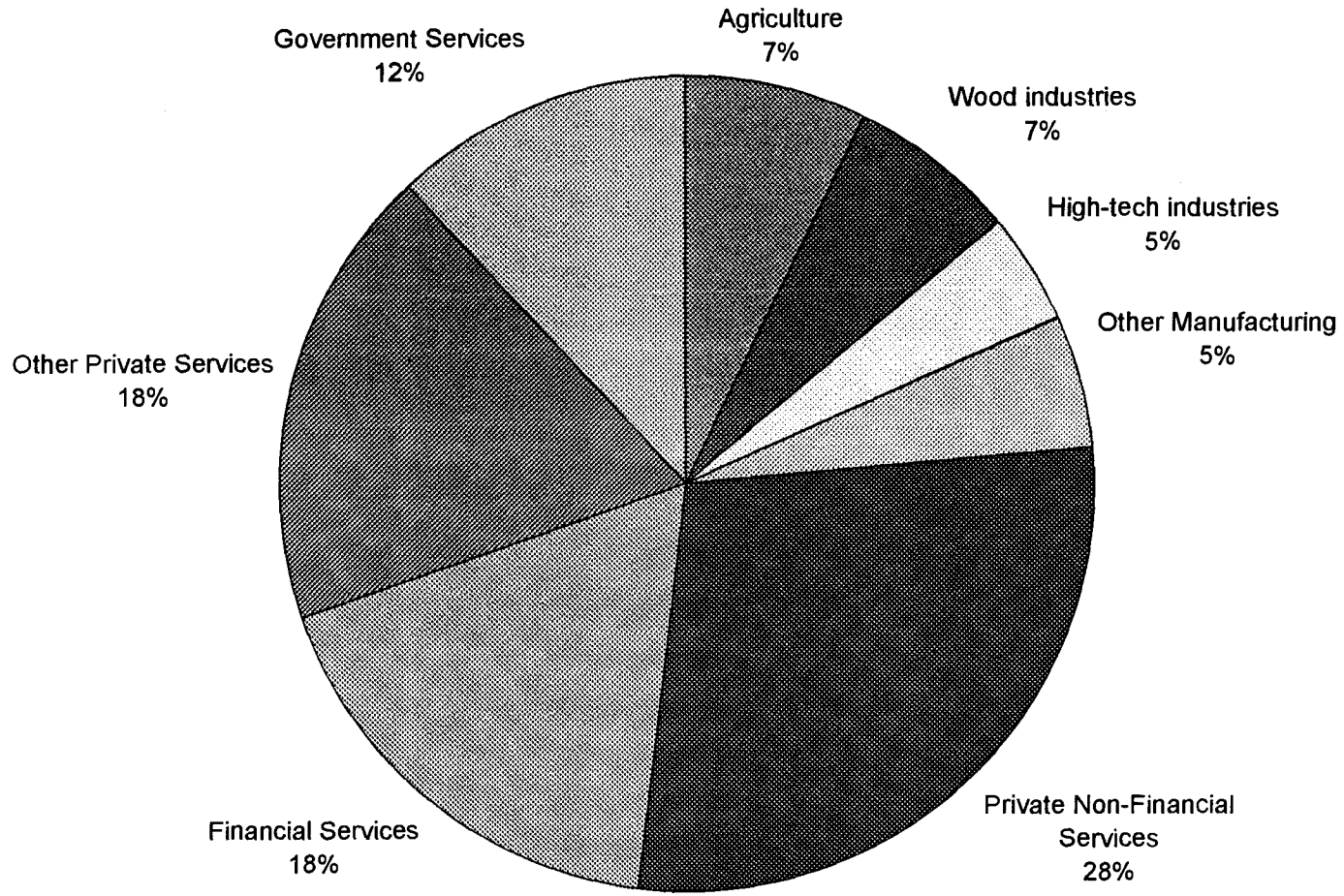
Table 9. Continued

SIC Code	Sector/Industry Description	1995		
		current	chain-type q index	chain-type p index
27	Printing and publishing	875	838	739
28	Chemical and allied products	133	127	112
29	Petroleum and coal products	73	70	62
30	Rubber & miscel. plastics products	238	228	201
32	Stone, clay and glass products	223	214	189
33	Primary metal products	728	698	615
34	Fabricated Metal products	604	579	510
37	Motor Vehicles and equipment	408	391	345
39	Mescel. manufacturing industries	222	213	188
	<b>Private Non-Financial Services</b>	20527	18673	19390
15-17	Construction	2985	2715	2819
41	Local & interurban passenger transit	119	108	112
42	Trucking and warehousing	1544	1405	1459
44	Water transportation	181	165	171
45	Transportation by air	445	405	421
47	Transportation Services	259	235	244
48	Communications	1770	1610	1672
49	Electric, gas, and sanitary services	1980	1801	1870
50-51	Wholesale trade	4101	3731	3874
52-59	Retail trade	7143	6498	6748
	<b>Financial Services</b>	12922	11755	12205
60	Depository institutions	1981	1802	1871
61	Non-depository institutions	315	286	297
63	Insurance carriers	901	820	851
64	Insurance agents, brokers, & services	478	435	452
65	Real estate	8934	8128	8439

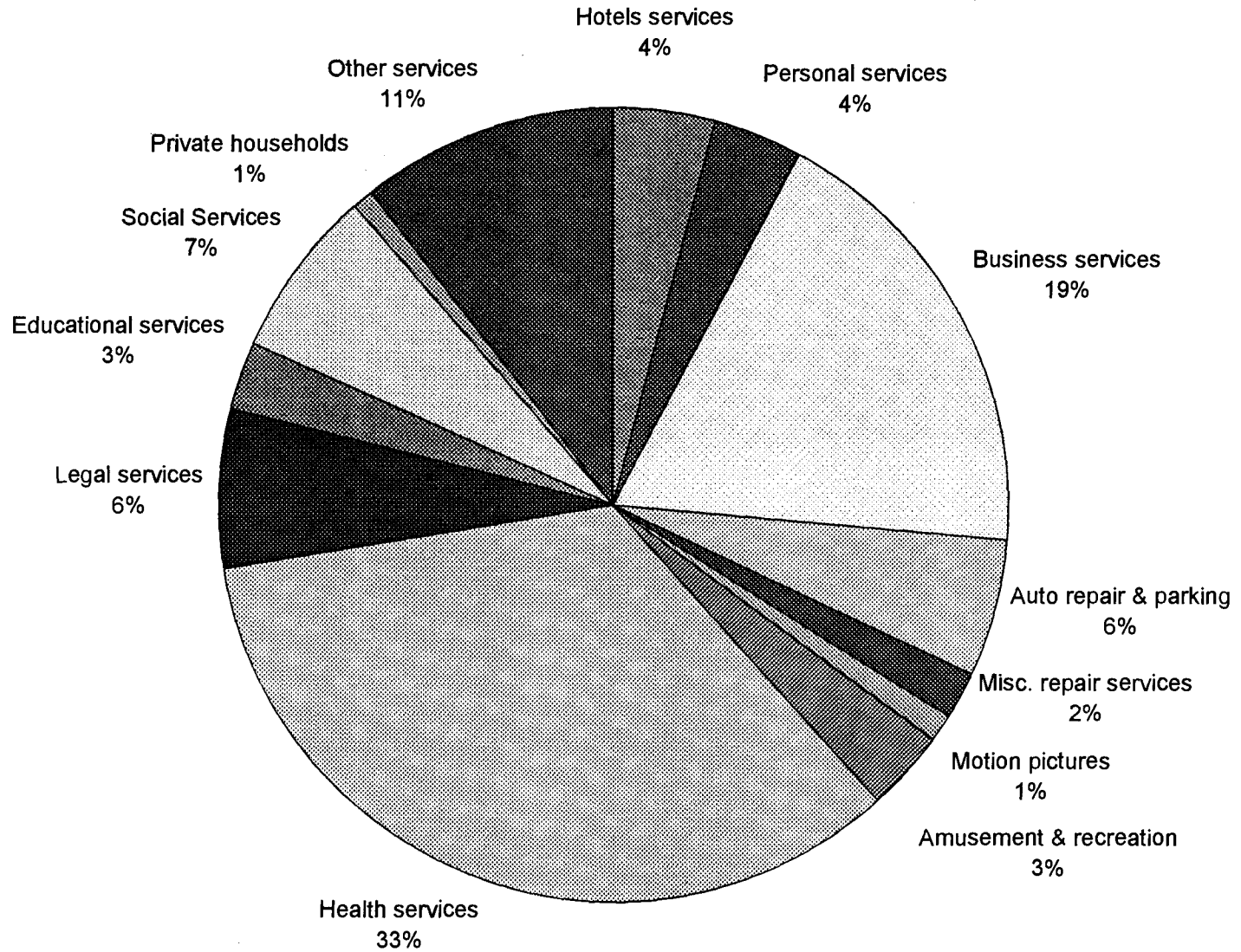
Table 9. Continued

SIC Code	Sector/Industry Description	1995		
		current	chain-type q index	chain-type p Index
67	Holding Co.s & investment services	313	284	295
	<b>Other Private Services</b>	13344	12145	12608
70	Hotels and other lodging places	545	496	515
72	Personal services	505	460	477
73	Business services	2472	2249	2335
75	Auto repair, services, and parking	741	675	700
76	Miscellaneous repair services	270	246	255
78	Motion picture	129	118	122
79	Amusement and recreation services	464	422	438
80	Health services	4548	4138	4297
81	Legal services	844	768	797
82	Educational services	376	342	355
83-86	Social Services organizations	929	846	878
88	Private households	96	88	91
89	Other services	1425	1297	1348
	<b>Government Services</b>	8629	8324	8389
-	Federal civilian government	1619	1480	1811
-	Federal military government	212	194	238
-	State and local government	6798	6650	6340

**Figure 1. 1995 Oregon Economy by Sector Share of GSP**



**Figure 2. 1995 Oregon "Other Private Services"**



### 3.2. Oregon's Exports to the Rest of the World

According to trade data reported by National Trade Data Bank, University of Massachusetts (MISER), Oregon exported about \$ 9.43 billion in 1995 (Table 10). High-tech equipment exports was about 46% of Oregon's total exports. Agriculture sector exported 26%, wood industries exported 15%, other manufacturing products 13% (Figure 3). The top ten importing countries from Oregon are: Japan, Canada, South Korea, Germany, Taiwan, United Kingdom, Malaysia, Hong Kong, and Australia. The 1989-1995 export trends indicate that while agricultural and lumber exports are declining, the exports of high-tech products (industrial and commercial machinery and computer equipment, electric and electrical equipment, measuring and analyzing equipment) are rising.

The MISER data is an Origin of Movement (O.M.) series, which allocates exports to the transportation origin of exports. Accuracy of this data set is good when looking at manufactured exports. However, it overstates exports of bulk commodities from states with large ports. (U.S. Department of Commerce, 1996)

A relatively new set of data is the Exporter Location (EL) series. The Department of Commerce claims that this series has advantages in consistency. It allocates exports to the physical location of exporters. In other words it traces the export activity from the initial point of sale. The EL series is a useful tool for export

promotion where the goal is to identify concentrations of international marketing activity, while the Origin of Movement series is useful in transportation planning.

However, for Oregon, we discovered large discrepancies between Oregon farm production of crops (SIC 01) and livestock (SIC 02) and exports reported by the EL series. For example, aggregate production of crops and livestock in Oregon amounted to about \$3.062 billion in 1995 whereas Oregon exports of SIC 01 and 02 reported by the EL series (\$3.253 billion) surpassed Oregon's total production in these categories. In the absence of held over inventories, this discrepancy indicates that the EL data includes pass through exports from other states such as Idaho which are credited to Oregon. Therefore, we rely on MISER Series I export data reported in Table 10.

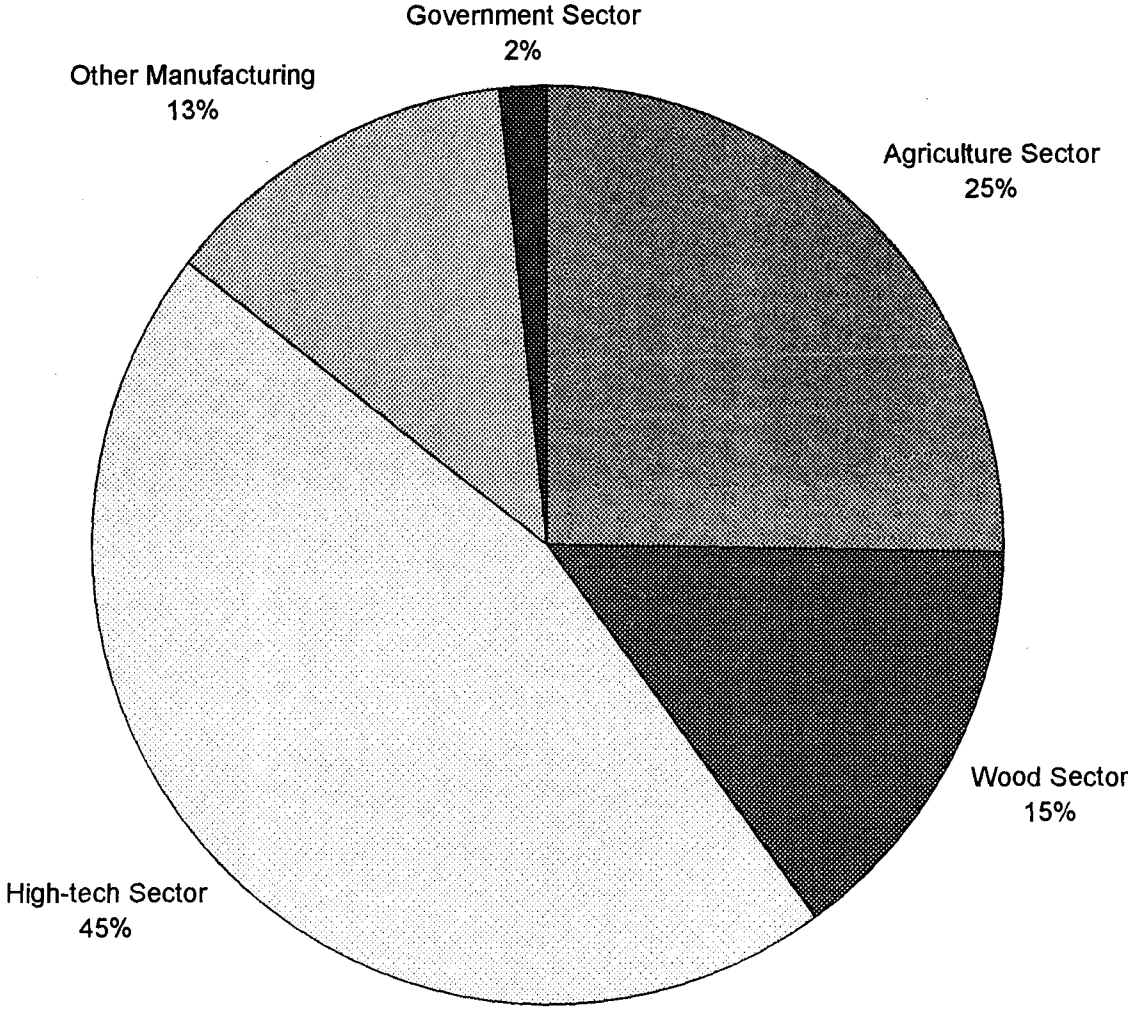
Table 10: The U.S. and PNW exports to the world, by state, by two-digit SIC commodity groups, (\$ U.S.), 1995

SIC Code	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHARE OF U.S.
ALL	ALL COMMODITIES	1,973,287,594	9,436,454,308	24,847,377,699	36,257,119,601	583,030,524,528	6.22%
01	CROPS	74,472,542	2,033,892,392	3,664,486,432	5,772,851,366	30,161,147,301	19.14%
02	LIVESTOCK	5,111,722	1,506,820	76,765,403	83,383,945	960,819,398	8.68%
08	FORESTRY	411,368	4,123,109	25,679,240	30,213,717	297,062,505	10.17%
09	FISHING, HUNTING & TRAPPING	1,800,538	39,506,428	460,850,758	502,157,724	2,952,067,619	17.01%
10	METAL MINING	11,470,804	453,700	171,442,333	29,068,737	1,586,100,710	1.83%
12	COAL MINING	0	998,829	2,289,350	3,288,179	3,573,756,914	0.09%
13	OIL AND GAS EXTRACTION	5,890	9,633	50,384,055	50,399,578	733,557,130	6.87%
14	MINING OF NONMETALIC MINERALS	3,467,055	2,642,521	26,552,981	32,662,557	1,320,632,037	2.47%
20	FOOD & KINDRED PRODUCTS	186,382,240	339,348,831	1,471,778,266	1,997,509,337	27,268,049,546	7.33%
21	TOBACCO PRODUCTS	0	13,249	835,530	848,779	5,300,061,532	0.02%
22	TEXTILE MILL PRODUCTS	194,180	5,345,699	32,802,331	38,342,210	6,115,094,381	0.63%
23	APPAREL	1,020,836	22,736,178	55,043,454	78,800,468	7,655,885,935	1.03%
24	LUMBER & WOOD PRODUCTS	24,599,670	1,106,102,905	2,242,692,172	3,373,394,747	7,832,232,081	43.07%
25	FURNITURES & FIXTURES	2,717,637	14,867,879	21,901,598	39,487,114	3,233,512,864	1.22%
26	PAPER & ALLIED PRODUCTS	188,514,226	278,956,843	1,359,341,460	1,826,812,529	15,730,889,565	11.61%
27	PRINTING & PUBLISHING	4,022,971	29,434,389	72,943,666	106,401,026	4,841,084,887	2.20%
28	CHEMICAL & ALLIED PRODUCTS	81,286,160	86,396,443	328,206,431	495,889,034	60,335,418,848	0.82%
29	PETROLEUM & PRODUCTS	344,382	31,816,691	311,238,637	343,399,710	6,148,122,931	5.59%
30	RUBBER & PLASTIC PRODUCTS	3,088,548	74,564,698	122,177,166	199,830,412	11,725,056,948	1.70%
31	LEATHER & LEATHER PRODUCTS	431,735	77,137,315	17,247,058	94,816,108	1,777,548,258	5.33%
32	STONE, CLAY & GLASS	580,676	52,272,934	43,204,684	96,058,294	5,079,139,916	1.89%
33	PRIMARY METAL INDUSTRIES	2,696,748	240,831,560	655,641,141	899,169,449	21,607,080,715	4.16%
34	FABRICATED METAL EQUIPMENT	22,215,089	105,982,304	183,570,027	311,767,420	16,245,059,417	1.92%
35	INDUSTRIAL & COMMERCIAL EQUIP.	701,976,364	2,142,968,692	1,172,952,588	4,017,897,644	105,947,586,799	3.79%
36	ELECTRIC & ELECTRICAL EQUIP.	584,496,013	1,568,981,941	1,081,082,056	3,234,560,010	92,203,527,655	3.51%
37	TRANSPORTATION EQUIPMENT	40,086,115	357,817,234	10,214,144,599	10,612,047,948	87,722,920,290	12.10%
38	MEASURING INSTRUMENTS	16,786,683	582,092,580	608,844,426	1,207,723,689	32,312,267,532	3.74%
39	MISCELLANEOUS MANUFACTURING	2,918,160	72,121,895	180,719,913	255,759,968	9,934,049,624	2.57%
91	TOTAL EXECUTIVE, LEGISLATIVE & GOV	6,047,616	123,336,585	203,587,044	332,971,245	6,250,757,499	5.33%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAF	940,392	5,350,581	18,182,488	24,473,461	2,218,112,312	1.10%
98	UNIDENTIFIED	3,493,394	12,429,822	60,369,674	76,292,890	1,660,649,227	4.59%
99	TOTAL NONCLASSIFIABLE ESTABLISHM	1,707,840	22,413,628	64,718,838	88,840,306	2,301,272,152	3.86%

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.



**Figure 3. 1995 Oregon's Export to the World, by sector Shares**



### 3.3. Oregon's Employment and Payrolls

According to data obtained from 1995 Oregon Covered Employment published by the State of Oregon Employment Division, Oregon's industries employed over 1.4 million people. The total payroll was about \$36.5 billion (Table 11). The breakdown of Oregon's economy by industry employment is as follows: 36% in private non-financial services, 25% in other private services, 16% in government services, 6% in other manufacturing, 5% in financial services, 3% in agriculture, 5% in wood industries, and 4% in high-tech industries (Figure 4).

The breakdown by payroll followed that of employment very closely: 30% in private non-financial services, 22% in other private services, 18% in government services, 7% in other manufacturing, 6% in financial services, 6% in wood industries, 7% in high-tech industries, and 4% in agriculture (Figure 5).

Table 11. 1995 Oregon Total Payroll and Average Employment

SIC Code	Sector/Industry Description	95 TOTAL Payroll (\$)	95 Average Employment
	All Industries	36,474,339,132	1,411,687
	<b>Agriculture</b>	1,368,763,993	70,253
01	Agricultural production - crops	309,836,514	21,831
02	Agricultural prod - livestock	40,072,532	2,295
07	Agricultural services	179,652,027	11,541
20	Food and kindred products	604,273,009	25,399
28(Ag)	Chemicals and Allied products (AG)	6,601,294	282
50(Ag)	Wholesale Durable Goods	44,480,445	1,607
51(Ag)	Wholesale Nondurable Goods	183,848,172	7,298
	<b>Wood Industries</b>	2,103,297,984	65,952
24	Lumber and wood products	1,593,465,199	53,254
25	Furniture and fixtures	91,013,559	3,687
26	Paper and allied products	418,819,226	9,011
	<b>High-tech Industries</b>	2,458,849,769	57,285
35	Industrial machinery & equipment	817,826,661	21,237
36	Electric & electronic equipment	1,213,007,046	26,691
38	Instruments & related products	428,014,062	9,357
	<b>Other Manufacturing</b>	2,573,891,210	85,600
08	Forestry	93,267,876	4,402
09	Fishing, hunting & trapping	27,550,780	716
10	Metal mining	1,086,985	37
13	Oil and gas extraction	967,474	35
14	Nometallic minerals ex fuels	55,271,457	1,615
22	Textile mill products	38,983,539	1,582
23	Apparel & other textile products	50,438,335	2,904
27	Printing and publishing	455,623,888	16,060
28	Chemicals and allied products	109,531,751	2,807
29	Petroleum and coal products	16,851,801	427
30	Rubber & misc. plastic products	172,723,923	6,535
31	Leather & leather products	9,584,648	459
32	Stone, clay & glass products	135,154,239	4,230
33	Primary metal industries	411,360,075	10,603
34	Fabricated metal products	391,658,184	13,442
37	Transportation equipment	499,978,285	15,147
39	Misc. mfg. industries	103,857,970	4,599

Table 11. Continued

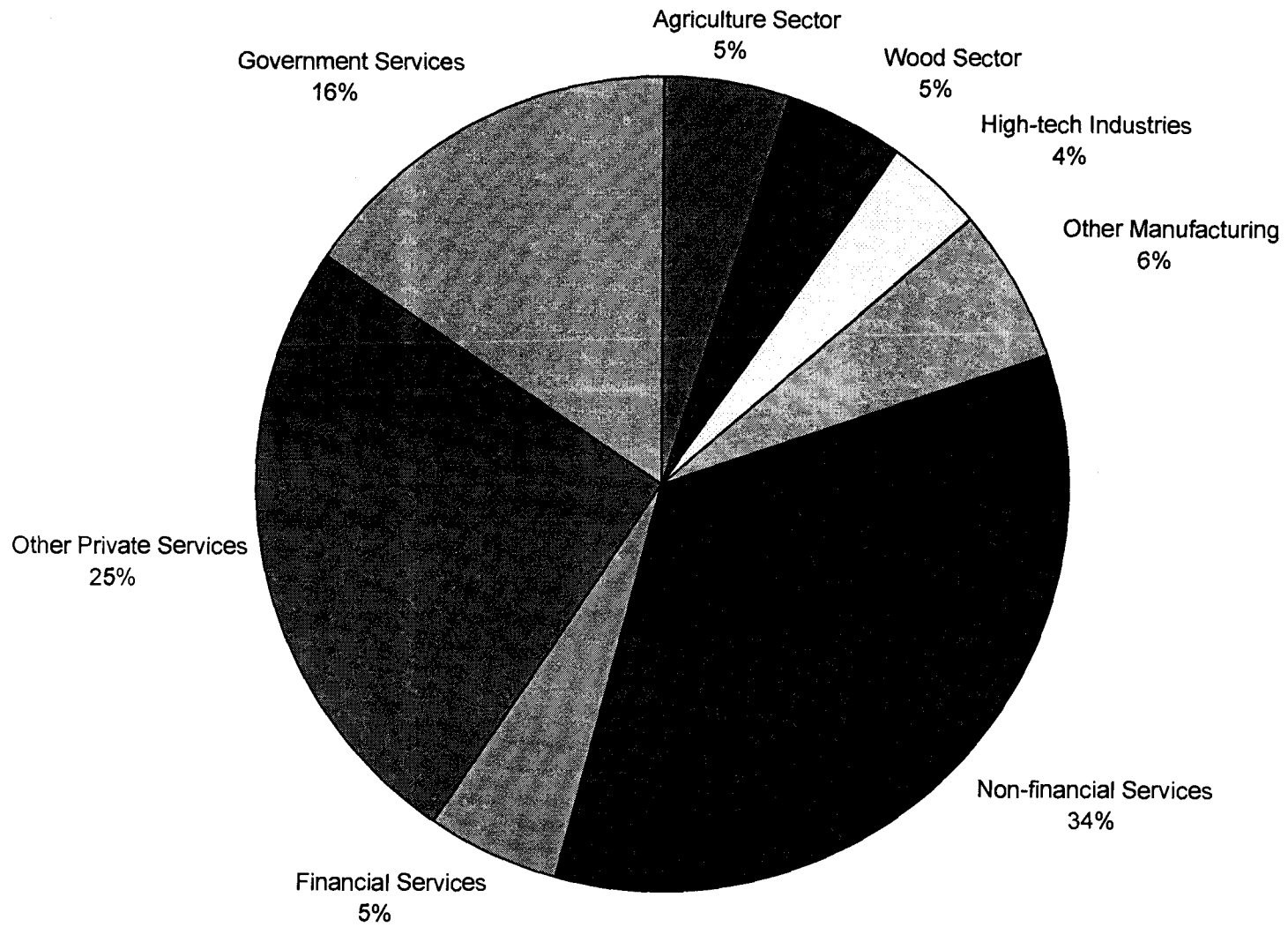
SIC Code	Sector/Industry Description	95 TOTAL Payroll (\$)	95 Average Employment
	<b>Non-financial Services</b>	11,282,521,922	486,118
15	General building contractors	489,782,191	16,712
16	Heavy construction contractors	354,198,777	9,135
17	Special trade contractors	1,274,970,051	42,695
41	Local and interurban transit	61,697,532	4,219
42	Trucking and warehousing	825,160,875	28,805
44	Water transportation	99,661,631	2,246
45	Transportation by air	204,753,796	6,277
47	Transportation services	128,698,452	4,966
48	Communication	486,868,045	12,666
49	Electric, gas and sanitary svcs	415,723,972	9,019
50	Wholesale durable goods	1,775,715,130	48,678
51	Wholesale nondurable goods	1,101,342,336	32,267
52	Bldg. material & garden supplies	254,013,859	11,854
53	General merchandise stores	588,768,657	33,380
54	Food stores	643,482,781	40,099
55	Auto dealers & service stations	794,100,669	31,631
56	Apparel and accessory stores	186,395,426	13,320
57	Furn. & home furnishings stores	223,941,541	11,102
58	Eating and drinking places	924,792,182	98,153
59	Miscellaneous retail	448,454,019	28,894
	<b>Financial Services</b>	2,232,351,896	73,908
60	Depository institutions	602,344,473	22,221
61	Nondepository institutions	193,630,947	5,124
62	Sec. commodity brokers/services	208,872,229	2,988
63	Insurance carriers	512,996,767	14,515
64	Ins. agents brokers & service	260,035,771	7,871
65	Real estate	364,191,313	19,081
67	Holding & other invest. offices	90,280,396	2,108
	<b>Other Private Services</b>	7,946,881,874	350,976
70	Hotels and other lodging places	231,301,225	19,721
72	Personal services	168,375,437	11,444
73	Business services	1,645,204,174	77,275
75	Auto repair, services & garages	284,804,851	13,310
76	Miscellaneous repair services	110,083,229	4,603
78	Motion pictures	88,881,352	5,929

Table 11. Continued

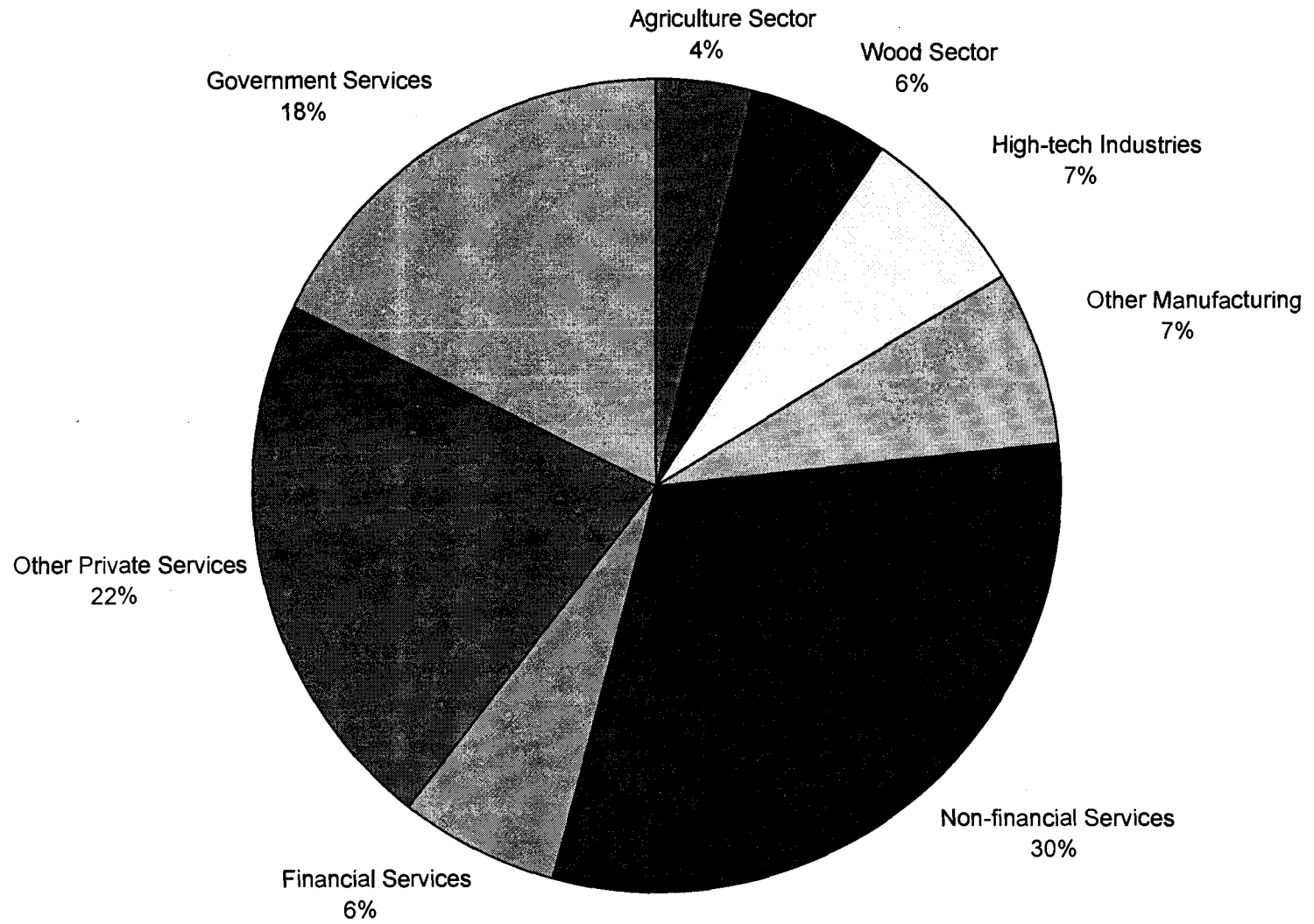
SIC Code	Sector/Industry Description	95 TOTAL Payroll (\$)	95 Average Employment
79	Amusement & recreation services	243,186,152	16,418
80	Health services	2,870,945,518	95,299
81	Legal services	333,032,092	9,310
82	Educational services	263,132,253	12,838
83	Social services	483,188,366	34,133
84	Museums, gardens and zoos	19,126,855	1,120
86	Membership organizations	268,500,784	20,611
87	Engineering & management svcs	887,802,227	25,660
88	Private households	32,654,315	2,811
89	Miscellaneous services	16,662,844	494
	<b>Government Services</b>	6,473,249,250	220,213
	Total Federal Government	1,151,453,090	30,402
	Total State Government	1,601,274,547	52,913
	Total Local Government	3,720,521,613	136,898

Source: 1995 Oregon Covered Employment and Payrolls, State of Oregon, Employment Division

**Figure 4. Employment Contribution of Oregon's Economic Sectors, 1995**



**Figure 5. Payroll Contribution of Oregon's Economic Sectors, 1995**



## Chapter 4

### The Importance of Oregon's Agricultural Sector

#### 4.1 Previous Studies and Their Methods of Measuring The Sectors Economic Importance

Previous studies have utilized several methods to measure the importance of agriculture in a state's economy. These procedures often utilize employment, income, sales, and value-added (or Gross State Product) to estimate the economic impacts. Employment and income can be broken down into their direct and indirect impacts.

The direct effect is the income or employment created within the sector per unit of output. For example, each dollar of output in say farm production generates "X" dollars of income and each million dollars of output generates "Y" number of jobs.

To capture the impacts of indirect employment and income, Input-Output (I-O) models are often used. I-O models measure economic impacts through the use of a mathematical representation of the purchasing and sales patterns within a state or region. An I-O model charts the economic linkages between sectors within the state. The information derived from these models can be used to trace multiplier effects, which describe the economic impact of an industry by following the dollar flow through the economy. To explain the idea of an income multiplier, a portion of income



earned by one industry is spent and becomes income to a second industry. In turn, this second industry spends a portion of that income so that it become income to yet another industry, and so forth. Therefore when expenditures of one sector increase, the income of other sectors will increase by a multiple of the original increment.

Employment multipliers indicate the number of jobs that will result from an increase in demand in a certain sector. These indirect measures are meant to describe the linkages between sectors within the economy and to illustrate the relative importance of each sector to the economy. Also, by modifying I-O models, one can forecast the effects of changes in an industry and thus attempt to predict how these changes will affect the overall economy.

Of the studies that used I-O models to capture indirect effects of employment and income, most used multipliers generated by the U.S. Forest Service Impact Analysis for Planning system (IMPLAN). The IMPLAN system is able to estimate I-O models for any county, state, or region in the U.S. It does this with a large data base, and software and algorithms to estimate regional or sectoral I-O models derived from this data. Nonsurvey I-O models such as IMPLAN are not viewed favorably by many regional researchers unless they are modified to fit a certain region. Researchers recommend collecting and using region-specific data on trade patterns, technical

coefficients and household consumption for the largest sectors in the economy to create a "hybrid" model (Leones).

Sales is another measure that is sometimes used to measure the impact of agriculture on the state's economy. For example, the study on California's food and fiber industry measure the sales impact. The sales impact measures how agricultural purchases influence total private sector sales. For example, California can measure sales linked to anything that farm dollars purchase such as equipment, packaging, and electricity (Carter and Goldman). The multiplier effects calculated using IMPLAN show the aggregate sales effect of the agricultural sectors on the state.

A final measure that reflects the importance a sector has on the state's economy is value-added. Value-added is the value of goods and services sold by a sector of the economy, minus the cost of materials, supplies, fuel, electricity, and contract work. Value-added in agriculture would indicate value added to the economy from farm products, less processing costs, transportation, and other inputs. In other words, value-added measures the "economic value which is added" at a production level<sup>4</sup>.

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<sup>4</sup>Walden, Michael, North Carolina State University. Study Presented at Symposium at the 1994 AAEA Annual Meetings.

There are advantages and disadvantages in each of these methods of measuring the economic importance of a sector. In using direct income and direct employment to measure economic importance the advantage is that public audiences are readily able to comprehend the results. However employment and income may severely understate the importance of a sector such as agriculture. The reason is because direct employment and income measures don't take into account differences in worker productivity. Thus, these measures will diminish the importance of sectors with high productivity. For example, in the manufacturing sector, using employment as the measure of importance would show a 40 year decline in manufacturing, when in reality value of manufactured output has risen continuously and manufactured output as a fraction of all U.S. product and service output is the highest its been in the last 40 years (Walden, 1994).

Indirect measures of employment and income to estimate a sector's economic importance also has advantages and disadvantages. The benefit of using indirect measures is that multipliers are able to analyze marginal impacts. In other words one can analyze the total impact on the economy when the agriculture industry expands by say one million dollars. However, multipliers were not developed to analyze the total impact of the existence of an entire industry. An example given by Walden in the North Carolina study says that if the direct estimate of relative importance of agribusiness in a state is 20% of the gross state product, and if the multiplier for

agribusiness is 2, then it follows that agribusiness is responsible for 40% of the state economy. In further examining this issue, it is unclear as to what would happen if the 20% agribusiness industry disappeared. Would it then be the case that another 20% of the state economy also disappear? Therefore, if the objective is to measure marginal impacts of income or employment on a state's economy, multipliers can be used. However, one should be cautious in using multipliers to retrieve a static estimate of the value of agriculture in a state's economy.

Sales is also very understandable to the public, however using sales as a measure of economic importance has major drawbacks. First is the problem of double counting. The value of an input produced at one level will be counted again at each higher production level. For example multiple counting occurs when a raw product is counted as farm output, then counted in the output of a processing sector, and then counted again at the retail level.

Another problem with sales as a measure of economic importance is that the sales value may include inputs produced outside of the state. For example the sales value of a food processing industry in the state may include the value of raw goods produced in another state. Clearly, there are serious problems in using sales value as a measure of economic importance.

Value-added is the final measure of economic importance. It avoids the problems that other measure encountered. The degree of worker productivity will be accounted for in value-added. Multiple counting of inputs is avoided because only the value which is added at a production level will be attributed to that level. Also, the value of inputs produced from outside the state will not be included in value-added of that state. The disadvantage of value-added is that it is not a concept that is well understood by the public. However the advantages clearly outweigh this drawback in using value-added as a measure of an industry's impact on the state economy.

#### **4.2 Current Data Sources Available on Economic Importance**

Costly and time-consuming surveys can be avoided by using data available in published sources. At the farm level, crop and livestock values are available through the Oregon State University Extension Service publication "Oregon County and State Agricultural Estimates."

At the processing level, value-added numbers are available by Standard Industrial Classification (SIC) and by state from the U.S. Department of Commerce publication "Annual Survey of Manufactures." (ASM) These publications are available with about a three year lag and can be updated to current year by using Producer Price

Index available monthly publications by the U.S. Bureau of Labor Statistics. ASM also contains data on number of employees and income for each manufacturing sector at the national and state level.

Gross State Products are available through the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) with about a two year lag. They can also be updated using Producer Price Indexes as described previously. These GSP values are expressed both in constant and current dollar values. The BEA data also includes information on returns to capital and returns to labor in each sector of the economy.

Sales by category and state are available through the federal Census of Wholesale Trade and Census of Retail Trade. These census are published every five years and can be updated using the appropriate consumer or producer price indexes. A problem is that the wholesale and retail values are sales, not value-added (Walden). As Walden explains, these sales can be converted to value-added using margins published in Food Marketing Review.

Current employment and wage data by sector is available through the State of Oregon Employment Department's publication "Covered Employment and Payrolls by Industry and County." Export data is available through the University of Massachusetts, State of Origin of Exports (MISER). MISER contains information on exports from the U.S. and each individual state by two-digit SIC commodity groups.

Other sources of export data include the "Foreign Agricultural Trade of the United States" (FATUS), published by the U.S. Department of Agriculture, Economic Reporting Service.

#### **4.3 The Ideal Data Set Needed to Capture The Impact of Agriculture on Oregon's Economy**

To measure the exact economic importance of agriculture to Oregon's economy there are several requirements needed in the data that are not available now. Without this "perfect" data set, it is difficult to determine how accurate our estimates are with the given data sources.

The two most glaring problems with the data set available for Oregon have to do with: (1) employment and payroll and (2) exports. First, the State of Oregon Employment Division furnishes only data on "covered" employment. "Covered" employment includes only those employees who are covered by Oregon Employment Department Law and by the program of Unemployment Compensation for Federal Employees (UCFE). Excluded from this definition are self-employed workers, agricultural laborers working for a farm with a quarterly payroll of less than \$20,000 or not employing at least 10 persons in each of 20 separate weeks during any calendar year, and some part-time workers. Therefore, this data will underestimate the total

employment in the agricultural sector. During the years 1980 to 1993 it is estimated that the ratio of covered employment to total employment (covered and non-covered), expressed as a percentage has varied between 80.8 percent and 89.4 percent with an average of 85.6 percent. (State of Oregon)

The available data on exports also underestimates the importance of agricultural exports in Oregon's economy. The available data sources contain information on Oregon's exports by commodity groups to all the foreign countries in the world. However if one is interested in Oregon's exports and the impact it has on Oregon's economy, one must also consider the exports to other states within the U.S. In essence, exports to other states should be treated as if they were to foreign countries. Currently there is no data available on Oregon domestic shipments of agricultural products. Therefore, the available export data will tend to underestimate the importance to Oregon's economy.

Finally, value-added data available through the Annual Survey of Manufactures are gross dollar value and gross employment number. However if one wants to look at the relative importance of a sector in Oregon's economy, value-added should be presented relative to a total economic measure for Oregon. For example, a good measure would be agricultural value-added as a percentage of total state value-added. This relative measure is also called Gross State Product (Walden).



#### 4.4 Oregon's Agricultural Sector Performance Based on Different data Sets

##### 4.4.1 Bureau of Economic Analysis (BEA) data

The Agricultural Sector Gross State Product based on data from BEA (U.S. Department of Commerce, 1993) is shown in Table 12. In 1995, the GSP created by agriculture is estimated to be about \$5.1 billion. The most significant contributions come from farm production (SIC 01-02), food and kindred products (SIC 20), and wholesale non-durable goods (SIC 51).

Table 12. BEA Estimates on Oregon Gross State Product (\$Million) in the Agricultural Sector.

SIC Code	Industry Description	1992	1993	1994	1995
	<b>Total Agriculture</b>	<b>4532</b>	<b>4715</b>	<b>4939</b>	<b>5138</b>
01-02	<b>Farms</b>	<b>1553</b>	<b>1609</b>	<b>1680</b>	<b>1746</b>
07	<b>Agricultural services</b>	<b>434</b>	<b>460</b>	<b>484</b>	<b>510</b>
20	<b>Food and kindred products</b>	<b>1185</b>	<b>1228</b>	<b>1282</b>	<b>1332</b>
28(Ag)	<b>Chemicals and allied products</b>	<b>81</b>	<b>84</b>	<b>87</b>	<b>91</b>
50(Ag)	<b>Wholesale durable goods</b>	<b>191</b>	<b>207</b>	<b>227</b>	<b>237</b>
51(Ag)	<b>Wholesale non-durable goods</b>	<b>1088</b>	<b>1127</b>	<b>1177</b>	<b>1223</b>

\*See notes at end of Table 9 for estimation techniques.

#### **4.4.2 Oregon State University (OSU) Data**

The agricultural sector based on Oregon State University data is presented in Appendix, Table 2. In 1995 the Gross State Product in agriculture is estimated to be about \$6.58 billion. In order to make this data comparable to BEA and ASM data some adjustments were needed. At the farm and food processing levels, OSU data was used. However, to completely capture the agricultural sector, GSPs for SIC 07, 28, 50, and 51 (sectors for which OSU does not provide data) were drawn from BEA.

#### **4.4.3 Annual Survey of Manufactures (ASM) data**

The agricultural sector based on ASM data is presented in Appendix, Table 3. Of the activities that are considered to be agriculturally related, ASM provides only data on SIC 20 (Food and Kindred Products). To be complete, GSP for the other activities were taken from BEA data. Completing the table in this manner allows us to compare differences among the different data sources.

The next section examines Oregon Food Processing Industries Performance Relative to the United States. The value-added Oregon's food processing sector according to different data sources is shown in Table 13.

Table 13: Comparison of Oregon's Food Processing Value-added Estimates

Data Source	Value-added by Food Processing (\$ Million)		
	1993	1994	1995
BEA	1,228	1,282	1,332
OSU	1,332	1,442	1,463
ASM	2,085	2,098	2,127
IMPLAN	1,428	NA	NA
USDA	1,699	1,621	NA

Sources: BEA: REIS-CD-ROM.  
 OSU: "Oregon Agricultural Commodities," OSU, EC 1233, July 1994.  
 ASM: The U.S. Department of Commerce, "Annual Survey of Manufactures," 1991.  
 IMPLAN: OSU-College of Forestry.  
 USDA: ERS estimates based on OECD methodology;

#### 4.5 Economic Impact of The Agricultural Processing Sector

In this study, the economic impact of the agricultural processing sector is measured by value-added, employment created per million dollars of value-added, and wage income generated per million dollars of value-added. In 1994, based on the 1994

Annual Survey of Manufactures publication by the U.S. Department of Commerce, Bureau of the Census, value-added in food and kindred products (SIC 20) was about \$1.99 billion according to ASM. This is up from 1993, which was about \$1.55 billion. In terms of employment, in 1994 the processing of food products created 11.6 jobs per million dollars of value-added, which is down from 15 jobs per million dollars of value-added in 1993. In terms of wages, 27 cents of income was generated per dollar of value-added in 1994, down from 29 cents in 1993.

Similar comparisons are made for Oregon's wood and high-tech sectors relative to the PNW and U.S. economies. These results are presented in Appendix Table 4 and Appendix Table 5.

Within the food and kindred products category, preserved fruits and vegetables (SIC 203) ranked highest in 1994 value added with \$693.9 million, followed by dairy products (SIC 202) with \$277.9 million and bakery products (SIC 205) with \$276.8 million. In terms of employment meat products (SIC 201) created 14.9 jobs per million dollars value-added. This is followed by miscellaneous food and kindred products (SIC 209) with 14.7 jobs per million dollars of value-added and preserved fruits and vegetables (SIC 203) with 13.7 jobs per million dollars of value-added. In terms of income, bakery products (SIC 205) provided 34 cents wage generated per dollar of value added, followed by meat products (31 cents) and preserved fruits and

vegetables, grain mill products, and miscellaneous food and kindred products (all with 28 cents per dollar value-added). These results are presented in Appendix Table 4. In 1994 as well as 1993, compared with the United States, Oregon generated more employment and income per dollar of value-added in agricultural processing.

## Chapter 5

### The Competitiveness (Comparative Advantage) of Oregon's Industries

Before choosing any strategic investment policy to improve Oregon's growth prospects, we must identify Oregon's comparative advantage. The purpose of this section is to measure the competitiveness of different industries in Oregon relative to the United States, as well as the inter-regional competitiveness of the Oregon's industries relative to the Pacific Northwest (PNW) states of Idaho and Washington during 1989-1995 time period.<sup>5</sup>

The first section of this part establishes the definition of competitiveness. The second section explains the methodology employed for the measurement of the competitive strength of an export industry in a given state (region) relative to a geographical region or a nation. The third section provides measurements of the export competitiveness of the Oregon's industries relative to similar industries in the U.S. and the PNW region.

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<sup>5</sup> This methodology is completely drawn from Emami, Ali. *The Pacific Northwest Export Competitiveness in International Markets*. Working Paper No. 01-94. Department of Agricultural and Resource Economics, Agricultural Trade and Marketing Program, Oregon State University. pp. 3-7. 1994.

### 5.1 Definition of "Competitiveness"

In recent years the issue of domestic and international "competitiveness" has become an important agenda for firms, industries, and nations. A variety of definitions have been advanced to define and measure "competitiveness" in different dimensions based on:

- a) the level of economic activity, such as the "firm", the "industry", or the "national" level;
- b) the nature of goods and services: homogeneous or differentiated, agricultural or non-agricultural products and services, food or non-food products and services, raw material (bulk), semi-manufactured/semi-processed, manufactured/processed;
- c) the regionality of markets: domestic, international or both; and
- d) the policy prescriptions for enhancement of business profitability, export competitiveness, economic growth, and sectoral productivity.

Depending on the nature of objectives of studies concerned with "competitiveness", different definitions for "competitiveness" and different justifications for factors affecting "competitiveness" have been proposed. Although there is little consensus among definitions, almost all studies recognize the notion of "opportunity cost" (the earning of any resource in its different use). Basically, if

region A produces a product with a cost (relative to the cost of production of other products in the same region) lower than the relative cost in another region (region B), then region A can sell that product at a lower price to region B, provided that adding transportation, insurance, trade barriers, and other costs keeps A's price lower than B's.

In this context, competitiveness can be defined as a nation's or region's ability to produce and market products outside of its borders in return for payments to the resources (labor, land, and capital) employed in the production of those products. These payments must be at least comparable to what those resources could be paid in the production of alternative products or services. Maintaining competitiveness involves a nation's or region's ability to adjust to the changes in the technological production processes (i.e., changes in the mix of resource use); changes in the price paid for resources used in production; changes in the demand for old or new products in import markets; and changes in national, regional and international trade rules, agreements and policies. Countries or regions that have the ability to adjust to these dynamic changes in the production side of their products as well as the changes in the market conditions and national and international policies will be able to sustain their



dynamic competitiveness. This definition of competitiveness is identical to what is commonly referred to as "comparative advantage" or "relative cost advantage".<sup>6</sup>

## **5.2. Measurement of Competitiveness and Comparative Advantage**

### **5.2.1 Measuring Comparative Advantage: Methodology**

In some instances, there may exist factors that would tend to distort relative prices. For example, in many developing countries, social or economic profitability deviates from private profitability because of distortions in the factor and output markets, externalities, and government policy interventions that tend to make relative prices misleading. In a study that assesses the comparative advantage in the Indonesian economy three indicators are used: the net social or economic profitability (NSP), the

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<sup>6</sup>This study employs terms such as competitiveness, comparative advantage, revealed comparative advantage, and efficiency interchangeably.

domestic resource cost (DRC), and the resource cost ratio (RCR).<sup>7</sup> These indicators are defined as follows:

$$\begin{aligned} \text{NSP} &= (P_o^s - \sum a_{oj} P_j^s - \sum b_{ok} P_k^s) \times Y_o \\ &= (P_o^b - \sum a_{oj} P_j^b - \sum b_{ok} P_k^s) \times Y_o \end{aligned}$$

$$\text{DRC} = \frac{\sum b_{ok} P_k^s}{P_{of}^b - \sum a_{oj} P_{if}^b}, \text{ and}$$

$$\text{RCR} = \frac{\sum b_{ok} P_k^s}{(P_{of}^b - \sum a_{oj} P_{if}^b) E^*} = \frac{\text{DRC}}{E^*},$$

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<sup>7</sup>Gonzales, Leonardo A., Faisal Kasryno, Nicostrato D. Perez, Mark W. Rosegrant. *Economic Incentives and comparative Advantage in Indonesian Food Crop Production*. International Food Policy Research Institute, Research Report 93.

where world (border) prices are taken as shadow prices of tradable inputs and outputs,

$P_o^s = P_o^b$  and  $P_j^s = P_j^b$ . The terms are defined as follows:

$P_o^s$  = shadow price of output o;

$P_j^s$  = shadow price of tradable input j;

$P_k^s$  = shadow price of nontradable input k;

$a_{oj}$  = quantity of the jth input needed to produce a unit of output o;

$b_{ok}$  = quantity of the kth input needed to produce a unit of output o;

$Y_o$  = yield per hectare of output o;

$P_{of}^b$  = border - price equivalent of output o in foreign currency, adjusted for transport, storage, distribution, and quality differences;

$P_{jf}^b$  = border - price equivalent of input j in foreign currency, adjusted for transport, storage, distribution, and quality differences; and

$E^*$  = equilibrium nominal exchange rate, taken as the shadow value of the exchange rate.

NSP is calculated on a per hectare basis. It is the difference between gross revenue and total costs expressed in economic prices. A production activity has comparative advantage if the NSP is greater than zero.

The DRC is the “own exchange rate” of a particular production activity, since the numerator is expressed in local currency whereas the denominator is expressed in foreign currency. DRC measures the social opportunity cost of domestic resources employed in earning or saving a marginal unit of foreign exchange. As a measure of comparative advantage, DRC can be used to determine the economic competitiveness of a production activity by comparing it with the shadow exchange rate (SER) of the currency. Thus, an activity is economically competitive if the opportunity cost of earning or saving an incremental unit of foreign exchange is less than the SER. The smaller the DRC relative to the SER, the greater the activity’s comparative advantage. Those activities with the smallest DRCs display the greatest relative comparative advantage.

The RCR is the ratio of DRC to SER. It is a measure of resource use efficiency because market prices used in the calculations have been adjusted net of taxes and subsidies. The criteria for comparative advantage is as follows:  $RCR < 1$  signifies an advantage,  $RCR = 1$  is neutral, and  $RCR > 1$  indicates a disadvantage.

### 5.2.2 Revealed Comparative Advantage Index (RCAI) Methodology

Comparative advantage is expected to determine the structure of exports. The commodity pattern of trade reflects relative cost and the differences in non-price factors. Hence, the trade performance of individual states, regions, or countries in different products can be used to discover information about competitiveness. From patterns of trade which are revealed in the real world, the revealed "relative export performance" (relative export market shares) can be used as an indicator of "revealed comparative advantage" (Balassa, [1965, 1977 and 1978], Vollrath [1985], Hillman, [1980]). The export performance of individual industries in a particular state such as Oregon can be evaluated by comparing the "relative shares" of Oregon's producers in the world export market. For Oregon's export performance of individual industries, for example, this task is accomplished by dividing Oregon's share of a given commodity from its total exports by the same share for the same commodity in the U.S or PNW. This forms an index number for a given export commodity known as "revealed comparative advantage index" (RCAI). For example, a RCAI number of 120 for a given commodity from Oregon relative to PNW will indicate that Oregon's share in this commodity's export is 20% higher than its share in the total exports of the PNW and hence that industry is 20% more competitive than its counterpart industry in the

PNW.<sup>8</sup> Therefore, RCAI can indicate advantages or disadvantages in a certain industry relative to another state or region. However, stating that Oregon's RCAI relative to the PNW is greater than one hundred, say 121%, doesn't necessarily mean that Oregon has a comparative advantage compared to a trading partner by 21%. It only means that Oregon has more of an advantage relative to its trading partners than does the PNW.

For the purpose of this study, the *i*th state's RCAI's in commodity group (*j*) in import market (*k*) relative to PNW region are calculated as:

$$RCAI_{ijk, PNW} = \frac{\frac{X_{ijk}}{\sum_j X_{ijk}}}{\frac{X_{PNW, jk}}{\sum_j X_{PNW, jk}}}$$

where  $X_{ijk}$  indicates the value of exports of commodity *j* from the *i*th state to the *k*th import market.

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<sup>8</sup>This study utilized the "revealed comparative Indexes" reported in Emami, Ali. *The Pacific Northwest Export Competitiveness in International Markets*. Working Paper No. 01-94. Department of Agricultural and Resource Economics, Agricultural Trade and Marketing Program, Oregon State University. 1994

$\sum_j X_{ijk}$  indicates the total value of the exports of all commodities ( $j_s$ ) from the  $i^{\text{th}}$  state

to the  $k^{\text{th}}$  import market,

$X_{\text{PNW},jk}$  indicates the value of the exports of the  $j^{\text{th}}$  commodity from the PNW

region to the " $k$ "th import market, and  $\sum_j X_{\text{PNW},jk}$  indicates the total value of the

exports of all commodities exported from the PNW region to the " $k$ "th import market.

Alternatively, for each state ( $i$ ) its RCAI in commodity group ( $j$ ) in import market ( $k$ ) relative to the U.S. are calculated as:

$$RCAI_{ijk,U.S.} = \frac{\frac{X_{ijk}}{\sum_j X_{ijk}}}{\frac{X_{U.S.,jk}}{\sum_j X_{U.S.,jk}}}$$

where  $X_{U.S.,jk}$  indicates the value of the exports of the  $j^{\text{th}}$  commodity from the U.S. to the “ $k$ ”th import market, and  $\sum_j X_{U.S.,jk}$  indicates the value of the exports of all commodities from the U.S. to the  $k^{\text{th}}$  imports market.

The PNW region’s RCAI in each commodity group  $j$  relative to the U.S. are calculated based on:

$$RCAI_{PNW, jk, U.S.} = \frac{\frac{X_{PNW, jk}}{\sum_j X_{PNW, jk}}}{\frac{X_{U.S., jk}}{\sum_j X_{U.S., jk}}}$$

where  $X_{PNW, jk}$  indicates exports of commodity  $j$  from PNW to import market  $k$ .

In this study the  $k^{\text{th}}$  import market has been designated to represent World (one may wish to designate the “ $k$ ”th import market to represent EC, NAFTA (Canada and Mexico) and Japan’s markets one at a time). Commodity group  $j$  encompasses 2-digit



SIC code, commodities which include: SICs 01, 02, 08, 09, 10, 12, 13, 14, 20-39, 91, 92, 98, and 99.

### **5.3 Oregon's Competitiveness by Industry**

Oregon's industry competitiveness relative to the PNW and U.S. from 1989 through 1995 are presented in Tables 14 through Table 20 (the export data from which these were derived are presented in Appendix, Table 6- Table 12). These tables show detailed revealed comparative advantage indexes for Oregon, Idaho, and Washington industries by 2-digit SIC Codes. As it is indicated, Oregon's comparative advantage relative to the PNW and U.S. has been changing over 1989-1995 time period.

Compared to the PNW, Oregon has, in past years, been more competitive in agricultural production (SIC 01), food products (SIC 20), textile products (SIC 22), apparel and other textile (SIC 23), lumber (SIC 24), furniture and fixture (SIC 25), printing and publishing (SIC 27), rubber and plastic products (SIC 30), leather and leather products (SIC 31), stone, clay and glass products (SIC 32), fabricated metal products (SIC 34), industrial machinery and computer equipment (SIC 35), electric and electronic equipment (SIC 36), measuring instrument (SIC 38), and other manufacturing products (SIC 39). Compared to the U.S. industries, Oregon, in recent years, has been efficient (competitive) in crops (SIC 01), food products (SIC 20),

lumber (SIC 24), paper products (SIC 26), leather and leather products (SIC 31), and measuring instrument (SIC 38) during 1989-1995 time period.

Table 14: The Regional and National "Revealed Comparative Advantage Index" (RCAI), by Industry, 1995

SIC	Commodity Groups	RCAI in PNW			RCAI in U.S.			
		Idaho	Oregon	Washington	Idaho	Oregon	Washington	PNW
01	CROPS	24%	135%	93%	73%	417%	285%	308%
02	LIVESTOCK	113%	7%	134%	157%	10%	187%	140%
08	FORESTRY	25%	52%	124%	41%	86%	203%	164%
09	FISHING, HUNTING & TRAPPING	7%	30%	134%	18%	83%	366%	274%
10	METAL MINING	725%	6%	86%	214%	2%	25%	29%
12	COAL MINING	0%	117%	102%	0%	2%	2%	1%
13	OIL AND GAS EXTRACTION	0%	0%	146%	0%	0%	161%	110%
14	MINING OF NONMETALIC MINERALS	195%	31%	119%	78%	12%	47%	40%
20	FOOD AND KINDRED PRODUCTS	171%	65%	108%	202%	77%	127%	118%
21	TOBACCO PRODUCTS	0%	6%	144%	0%	0%	0%	0%
22	TEXTILE MILL PRODUCTS	9%	54%	125%	1%	5%	13%	10%
23	APPAREL	24%	111%	102%	4%	18%	17%	17%
24	LUMBER AND WOOD PRODUCTS	13%	126%	97%	93%	873%	672%	693%
25	FURNITURES AND FIXTURES	126%	145%	81%	25%	28%	16%	20%
26	PAPER AND ALLIED PRODUCTS	190%	59%	109%	354%	110%	203%	187%
27	PRINTING & PUBLISHING	69%	106%	100%	25%	38%	35%	35%
28	CHEMICAL AND ALLIED PRODUCTS	301%	67%	97%	40%	9%	13%	13%
29	PETROLEUM & PRODUCTS	2%	36%	132%	2%	32%	119%	90%
30	RUBBER & PLASTIC PRODUCTS	28%	143%	89%	8%	39%	24%	27%
31	LEATHER AND LEATHER PRODUCTS	8%	313%	27%	7%	268%	23%	86%
32	STONE, CLAY & GLASS	11%	209%	66%	3%	64%	20%	30%
33	PRIMARY METAL INDUSTRIES	6%	103%	106%	4%	69%	71%	67%
34	FABRICATED METAL EQUIPMENT	131%	131%	86%	40%	40%	27%	31%
35	INDUSTRIAL & COMMERCIAL EQUIP.	321%	205%	43%	196%	125%	26%	61%
36	ELECTRIC & ELECTRICAL EQUIP.	332%	186%	49%	187%	105%	28%	56%
37	TRANSPORTATION EQUIPMENT	7%	13%	140%	14%	25%	273%	195%
38	MEASURING INSTRUMENTS	26%	185%	74%	15%	111%	44%	60%
39	MISCELLANEOUS MANUFACTURING	21%	108%	103%	9%	45%	43%	41%

SOURCE: Table 5.

Notes: 1. Shaded areas indicate competitiveness (comparative advantage), and other areas indicate the lack of competitiveness (comparative disadvantage).

2. "RCAI" is calculated as the ratio of:

$$\frac{[(\text{Export of product to the world from state})/(\text{Total export of all products to the world from state})]}{[(\text{Export of product to the world from region})/(\text{Total export of all products to the world from region})]}$$

**Table 15: The Regional and National "Revealed Comparative Advantage Index" (RCAI), by Industry, 1994**

SIC Code	COMMODITY DESCRIPTION	RCAI in PNW			RCAI in U.S.			
		IDAHO	OREGON	WASHINGTON	IDAHO	OREGON	WASHINGTON	PNW
01	CROPS	48%	219%	70%	109%	500%	161%	229%
02	LIVESTOCK	127%	7%	124%	164%	8%	160%	129%
08	FORESTRY	38%	74%	111%	54%	105%	159%	143%
09	FISHING, HUNTING & TRAPPING	7%	32%	125%	24%	102%	403%	323%
10	METAL MINING	1678%	7%	28%	355%	2%	6%	21%
12	COAL MINING	0%	0%	134%	0%	0%	2%	2%
13	OIL AND GAS EXTRACTION	0%	0%	134%	0%	0%	57%	42%
14	MINING OF NONMETALIC MINERALS	154%	105%	95%	62%	43%	39%	41%
20	FOOD & KINDRED PRODUCTS	230%	97%	93%	210%	88%	85%	91%
21	TOBACCO PRODUCTS	0%	4%	133%	0%	0%	1%	0%
22	TEXTILE MILL PRODUCTS	10%	57%	117%	1%	5%	10%	8%
23	APPAREL	24%	117%	100%	4%	20%	17%	17%
24	LUMBER & WOOD PRODUCTS	16%	171%	85%	102%	1085%	541%	634%
25	FURNITURES & FIXTURES	161%	178%	75%	26%	29%	12%	16%
26	PAPER & ALLIED PRODUCTS	199%	89%	97%	326%	147%	159%	164%
27	PRINTING & PUBLISHING	44%	129%	96%	19%	56%	42%	44%
28	CHEMICAL & ALLIED PRODUCTS	240%	61%	102%	36%	9%	15%	15%
29	PETROLEUM & PRODUCTS	2%	51%	119%	2%	38%	89%	74%
30	RUBBER & PLASTIC PRODUCTS	32%	170%	85%	7%	37%	18%	22%
31	LEATHER & LEATHER PRODUCTS	15%	415%	18%	8%	214%	9%	52%
32	STONE, CLAY & GLASS	15%	264%	60%	4%	75%	17%	28%
33	PRIMARY METAL INDUSTRIES	10%	166%	87%	6%	95%	50%	57%
34	FABRICATED METAL EQUIPMENT	130%	151%	84%	39%	45%	25%	30%
35	INDUSTRIAL & COMMERCIAL EQUIP.	468%	221%	44%	206%	97%	19%	44%
36	ELECTRIC & ELECTRICAL EQUIP.	456%	185%	55%	206%	83%	25%	45%
37	TRANSPORTATION EQUIPMENT	2%	13%	130%	6%	32%	327%	251%
38	MEASURING INSTRUMENTS	20%	220%	72%	10%	112%	36%	51%
39	MISCELLANEOUS MANUFACTURING	31%	130%	96%	10%	44%	32%	33%

SOURCE: Table 5.

Notes: 1. Shaded areas indicate competitiveness (comparative advantage), and other areas indicate the lack of competitiveness (comparative disadvantage).

2. "RCAI" is calculated as the ratio of:

$$\frac{[(\text{Export of product to the world from state})/(\text{Total export of all products to the world from state})]}{[(\text{Export of product to the world from region})/(\text{Total export of all products to the world from region})]}$$

Table 16: The Regional and National "Revealed Comparative Advantage Index" (RCAI), by Industry, 1993

SIC Code	COMMODITY DESCRIPTION	RCAI in PNW			RCAI in U.S.			
		IDAHO	OREGON	WASHINGTON	IDAHO	OREGON	WASHINGTON	PNW
01	CROPS	50%	217%	78%	101%	435%	156%	201%
02	LIVESTOCK	199%	11%	114%	159%	9%	91%	80%
08	FORESTRY	34%	92%	104%	37%	101%	115%	110%
09	FISHING, HUNTING & TRAPPING	16%	33%	117%	37%	81%	282%	241%
10	METAL MINING	2291%	11%	26%	250%	1%	3%	11%
12	COAL MINING	0%	0%	125%	0%	0%	1%	1%
13	OIL AND GAS EXTRACTION	17%	0%	124%	12%	0%	85%	68%
14	MINING OF NONMETALIC MINERALS	222%	109%	93%	90%	44%	38%	41%
20	FOOD & KINDRED PRODUCTS	221%	123%	90%	187%	104%	76%	85%
21	TOBACCO PRODUCTS	0%	32%	118%	0%	0%	0%	0%
22	TEXTILE MILL PRODUCTS	39%	144%	93%	2%	9%	6%	6%
23	APPAREL	23%	113%	100%	4%	18%	16%	16%
24	LUMBER & WOOD PRODUCTS	23%	193%	84%	126%	1080%	468%	559%
25	FURNITURES & FIXTURES	244%	279%	57%	37%	42%	9%	15%
26	PAPER & ALLIED PRODUCTS	260%	93%	95%	362%	129%	132%	139%
27	PRINTING & PUBLISHING	32%	109%	101%	17%	58%	53%	53%
28	CHEMICAL & ALLIED PRODUCTS	367%	71%	95%	47%	9%	12%	13%
29	PETROLEUM & PRODUCTS	1%	42%	116%	0%	28%	78%	67%
30	RUBBER & PLASTIC PRODUCTS	47%	217%	78%	9%	42%	15%	19%
31	LEATHER & LEATHER PRODUCTS	18%	488%	23%	6%	173%	8%	35%
32	STONE, CLAY & GLASS	11%	308%	60%	3%	83%	16%	27%
33	PRIMARY METAL INDUSTRIES	11%	161%	91%	5%	68%	38%	42%
34	FABRICATED METAL EQUIPMENT	197%	240%	67%	47%	57%	16%	24%
35	INDUSTRIAL & COMMERCIAL EQUIP.	593%	250%	48%	251%	106%	20%	42%
36	ELECTRIC & ELECTRICAL EQUIP.	492%	251%	52%	165%	84%	17%	34%
37	TRANSPORTATION EQUIPMENT	3%	10%	123%	9%	27%	341%	278%
38	MEASURING INSTRUMENTS	34%	271%	67%	15%	119%	30%	44%
39	MISCELLANEOUS MANUFACTURING	59%	165%	88%	19%	53%	28%	32%

SOURCE: Table 5.

Notes: 1. Shaded areas indicate competitiveness (comparative advantage), and other areas indicate the lack of competitiveness (comparative disadvantage).

Table 17: The Regional and National "Revealed Comparative Advantage Index" (RCAI), by Industry, 1992

SIC Code	COMMODITY DESCRIPTION	RCAI in PNW			RCAI in U.S.			
		IDAHO	OREGON	WASHINGTON	IDAHO	OREGON	WASHINGTON	PNW
01	CROPS	43%	227%	79%	84%	442%	153%	194%
02	LIVESTOCK	94%	19%	115%	64%	13%	79%	69%
08	FORESTRY	62%	124%	97%	40%	79%	62%	64%
09	FISHING, HUNTING & TRAPPING	27%	41%	114%	35%	53%	150%	132%
10	METAL MINING	1421%	39%	61%	269%	7%	12%	19%
12	COAL MINING	0%	0%	122%	0%	0%	1%	1%
13	OIL AND GAS EXTRACTION	0%	0%	122%	0%	0%	73%	60%
14	MINING OF NONMETALIC MINERALS	132%	48%	108%	87%	32%	71%	66%
20	FOOD AND KINDRED PRODUCTS	272%	137%	87%	223%	112%	71%	82%
21	TOBACCO PRODUCTS	0%	306%	66%	0%	0%	0%	0%
22	TEXTILE MILL PRODUCTS	243%	142%	87%	13%	8%	5%	5%
23	APPAREL	32%	113%	100%	4%	15%	14%	14%
24	LUMBER AND WOOD PRODUCTS	36%	237%	77%	185%	1231%	400%	519%
25	FURNITURES AND FIXTURES	210%	267%	65%	37%	47%	12%	18%
26	PAPER AND ALLIED PRODUCTS	266%	101%	94%	362%	137%	127%	136%
27	PRINTING & PUBLISHING	53%	126%	97%	28%	67%	52%	54%
28	CHEMICAL AND ALLIED PRODUCTS	309%	61%	99%	43%	8%	14%	14%
29	PETROLEUM & PRODUCTS	2%	37%	115%	2%	26%	79%	69%
30	RUBBER & PLASTIC PRODUCTS	85%	179%	86%	12%	25%	12%	14%
31	LEATHER AND LEATHER PRODUCTS	19%	532%	24%	6%	183%	8%	34%
32	STONE, CLAY & GLASS	14%	255%	75%	4%	66%	19%	26%
33	PRIMARY METAL INDUSTRIES	8%	185%	88%	5%	125%	59%	67%
34	FABRICATED METAL EQUIPMENT	159%	168%	85%	41%	43%	22%	26%
35	INDUSTRIAL & COMMERCIAL EQUIP.	808%	261%	43%	290%	94%	16%	36%
36	ELECTRIC & ELECTRICAL EQUIP.	430%	300%	51%	119%	83%	14%	28%
37	TRANSPORTATION EQUIPMENT	2%	8%	121%	7%	21%	331%	275%
38	MEASURING INSTRUMENTS	26%	304%	65%	11%	126%	27%	42%
39	MISCELLANEOUS MANUFACTURING	43%	97%	103%	16%	37%	39%	38%

SOURCE: Table 4.

Notes: 1. Shaded areas indicate competitiveness (comparative advantage), and other areas indicate the lack of competitiveness (comparative disadvantage).

2. "RCAI" is calculated as the ratio of:

$$\frac{[(\text{Export of product to the world from state})/(\text{Total export of all products to the world from state})]}{[(\text{Export of product to the world from region})/(\text{Total export of all products to the world from region})]}$$

Table 18: The regional and national "Revealed Comparative Index" (RCAI), by industry, 1991

SIC Code	COMMODITY DESCRIPTION	RCAI in PNW			RCAI in U.S.			
		IDAHO	OREGON	WASHINGTON	IDAHO	OREGON	WASHINGTON	PNW
01	CROPS	54%	229%	80%	102%	436%	152%	190%
02	LIVESTOCK	73%	18%		52%	13%	82%	72%
08	FORESTRY	35%	57%		110%	49%	150%	137%
09	FISHING, HUNTING & TRAPPING	25%	34%		114%	38%	176%	154%
10	METAL MINING	2205%	7%		414%	1%	8%	19%
12	COAL MINING	0%	0%		121%	0%	1%	1%
13	OIL AND GAS EXTRACTION	0%	1%		120%	0%	51%	42%
14	MINING OF NONMETALIC MINERALS	108%	67%		105%	46%	72%	69%
20	FOOD & KINDRED PRODUCTS	292%	132%		88%	109%	72%	82%
21	TOBACCO PRODUCTS	NE	NE	NE	0%	0%	0%	0%
22	TEXTILE MILL PRODUCTS	346%	119%		88%	22%	8%	6%
23	APPAREL	27%	137%		96%	3%	13%	9%
24	LUMBER & WOOD PRODUCTS	31%	273%		73%	166%	1469%	539%
25	FURNITURES & FIXTURES	38%	323%		64%	7%	61%	19%
26	PAPER & ALLIED PRODUCTS	231%	113%		93%	311%	152%	125%
27	PRINTING & PUBLISHING	53%	136%		96%	24%	62%	44%
28	CHEMICAL & ALLIED PRODUCTS	331%	71%		97%	33%	7%	10%
29	PETROLEUM & PRODUCTS	5%	30%		115%	2%	13%	50%
30	RUBBER & PLASTIC PRODUCTS	79%	197%		84%	12%	30%	13%
31	LEATHER & LEATHER PRODUCTS	21%	604%		17%	7%	197%	6%
32	STONE, CLAY & GLASS	5%	256%		77%	1%	59%	18%
33	PRIMARY METAL INDUSTRIES	28%	84%		105%	25%	76%	95%
34	FABRICATED METAL EQUIPMENT	276%	195%		78%	57%	41%	16%
35	INDUSTRIAL & COMMERCIAL EQUIP.	942%	272%		41%	289%	84%	13%
36	ELECTRIC & ELECTRICAL EQUIP.	466%	324%		49%	113%	79%	12%
37	TRANSPORTATION EQUIPMENT	3%	8%		119%	8%	23%	342%
38	MEASURING INSTRUMENTS	27%	320%		65%	11%	133%	27%
39	MISCELLANEOUS MANUFACTURING	61%	120%		98%	18%	35%	28%

SOURCE: Table 3.

Notes: 1. Shaded areas indicate competitiveness (comparative advantage), and other areas indicate the lack of competitiveness (comparative disadvantage).

2. "RCAI" is calculated as the ratio of:

$$\frac{[(\text{Export of product to the world from state})/(\text{Total export of all products to the world from state})]}{[(\text{Export of product to the world from region})/(\text{Total export of all products to the world from region})]}$$

Table 19: The regional and national "Revealed Comparative Index" (RCAI), by industry, 1990

SIC Code	COMMODITY DESCRIPTION	RCAI in PNW			RCAI in U.S.			
		IDAHO	OREGON	WASHINGTON	IDAHO	OREGON	WASHINGTON	PNW
01	CROPS	50%	198%	84%	101%	402%	172%	203%
02	LIVESTOCK	116%	15%	114%	84%	11%	82%	72%
08	FORESTRY	44%	40%	113%	55%	51%	141%	125%
09	FISHING, HUNTING & TRAPPING	30%	42%	113%	42%	58%	158%	140%
10	METAL MINING	3094%	3%	14%	2210%	2%	10%	71%
12	COAL MINING	0%	5%	120%	0%	0%	0%	0%
13	OIL AND GAS EXTRACTION	0%	0%	121%	0%	0%	8%	6%
14	MINING OF NONMETALIC MINERALS	76%	22%	115%	77%	23%	116%	101%
20	FOOD & KINDRED PRODUCTS	314%	146%	84%	240%	111%	65%	76%
21	TOBACCO PRODUCTS	0%	13%	119%	0%	0%	0%	0%
22	TEXTILE MILL PRODUCTS	315%	202%	74%	16%	10%	4%	5%
23	APPAREL	42%	205%	83%	3%	15%	6%	7%
24	LUMBER & WOOD PRODUCTS	25%	248%	76%	140%	1387%	427%	559%
25	FURNITURES & FIXTURES	134%	270%	69%	21%	42%	11%	16%
26	PAPER & ALLIED PRODUCTS	312%	82%	96%	396%	103%	122%	127%
27	PRINTING & PUBLISHING	98%	146%	92%	37%	56%	35%	38%
28	CHEMICAL & ALLIED PRODUCTS	244%	47%	104%	32%	6%	14%	13%
29	PETROLEUM & PRODUCTS	8%	27%	116%	4%	13%	53%	46%
30	RUBBER & PLASTIC PRODUCTS	42%	176%	88%	6%	25%	12%	14%
31	LEATHER & LEATHER PRODUCTS	10%	609%	13%	3%	214%	4%	35%
32	STONE, CLAY & GLASS	10%	236%	79%	2%	50%	17%	21%
33	PRIMARY METAL INDUSTRIES	33%	91%	104%	34%	94%	108%	104%
34	FABRICATED METAL EQUIPMENT	244%	214%	75%	49%	43%	15%	20%
35	INDUSTRIAL & COMMERCIAL EQUIP.	755%	293%	43%	228%	89%	13%	30%
36	ELECTRIC & ELECTRICAL EQUIP.	542%	311%	47%	126%	72%	11%	23%
37	TRANSPORTATION EQUIPMENT	3%	8%	120%	9%	22%	339%	283%
38	MEASURING INSTRUMENTS	26%	302%	67%	11%	126%	28%	42%
39	MISCELLANEOUS MANUFACTURING	44%	129%	97%	12%	34%	26%	26%

SOURCE: Table 2.

Notes: 1. Shaded areas indicate competitiveness (comparative advantage), and other areas indicate the lack of competitiveness (comparative disadvantage).

2. "RCAI" is calculated as the ratio of:

$$\frac{[(\text{Export of product to the world from state})/(\text{Total export of all products to the world from state})]}{[(\text{Export of product to the world from region})/(\text{Total export of all products to the world from region})]}$$



Table 20: The regional and national "Revealed Comparative Index" (RCAI), by industry, 1989

SIC Code	COMMODITY DESCRIPTION	RCAI in PNW			RCAI in U.S.			
		IDAHO	OREGON	WASHINGTON	IDAHO	OREGON	WASHINGTON	PNW
01	CROPS	36%	181%	85%	74%	377%	177%	208%
02	LIVESTOCK	108%	12%	118%	96%	11%	103%	89%
08	FORESTRY	11%	43%	115%	18%	71%	188%	163%
09	FISHING, HUNTING & TRAPPING	27%	60%	111%	37%	84%	156%	140%
10	METAL MINING	2912%	28%	17%	1743%	17%	10%	60%
12	COAL MINING	0%	2%	124%	0%	0%	0%	0%
13	OIL AND GAS EXTRACTION	76%	1%	122%	54%	0%	86%	71%
14	MINING OF NONMETALIC MINERALS	34%	155%	91%	22%	101%	59%	65%
20	FOOD & KINDRED PRODUCTS	323%	101%	92%	296%	93%	84%	92%
21	TOBACCO PRODUCTS	0%	38%	117%	0%	0%	0%	0%
22	TEXTILE MILL PRODUCTS	55%	145%	92%	3%	9%	5%	6%
23	APPAREL	75%	181%	84%	5%	13%	6%	7%
24	LUMBER & WOOD PRODUCTS	23%	199%	82%	152%	1295%	530%	650%
25	FURNITURES & FIXTURES	27%	231%	75%	4%	35%	11%	15%
26	PAPER & ALLIED PRODUCTS	323%	77%	97%	469%	111%	141%	145%
27	PRINTING & PUBLISHING	57%	138%	93%	22%	53%	36%	38%
28	CHEMICAL & ALLIED PRODUCTS	230%	49%	106%	27%	6%	12%	12%
29	PETROLEUM & PRODUCTS	3%	29%	119%	2%	20%	82%	69%
30	RUBBER & PLASTIC PRODUCTS	39%	167%	88%	6%	25%	13%	15%
31	LEATHER & LEATHER PRODUCTS	12%	477%	23%	3%	137%	7%	29%
32	STONE, CLAY & GLASS	22%	125%	97%	6%	32%	25%	26%
33	PRIMARY METAL INDUSTRIES	7%	93%	105%	9%	113%	128%	122%
34	FABRICATED METAL EQUIPMENT	181%	166%	83%	41%	38%	19%	23%
35	INDUSTRIAL & COMMERCIAL EQUIP.	595%	257%	49%	194%	84%	16%	33%
36	ELECTRIC & ELECTRICAL EQUIP.	699%	269%	43%	163%	63%	10%	23%
37	TRANSPORTATION EQUIPMENT	2%	9%	123%	5%	21%	302%	246%
38	MEASURING INSTRUMENTS	25%	252%	70%	11%	111%	31%	44%
39	MISCELLANEOUS MANUFACTURING	34%	112%	100%	8%	28%	24%	24%

SOURCE: Table 1.

Notes: 1. Shaded areas indicate competitiveness (comparative advantage), and other areas indicate the lack of competitiveness (comparative disadvantage).

2. "RCAI" is calculated as the ratio of:

$$\frac{[(\text{Export of product to the world from state})/(\text{Total export of all products to the world from state})]}{[(\text{Export of product to the world from region})/(\text{Total export of all products to the world from region})]}$$

### 5.3.1 Oregon's Competitiveness in Agricultural Products

Table 21 below summarizes Oregon's agricultural revealed comparative advantage indexes (RCAI) relative to the Pacific Northwest and U.S. economies during the 1989 to 1995 time period.

Table 21. Comparison of Oregon's Comparative Advantage in Agriculture Relative to PNW and U.S. (%)

SIC	1989		1990		1991		1992		1993		1994		1995	
	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S
SIC 01	81	2 7 7	98	3 0 2	129	3 3 6	127	3 4 2	117	3 3 5	119	4 0 0	35	3 1 7
SIC 20	1	- 7	46	1 1	32	9	37	1 2	23	4	-3	- 1 2	-35	- 2 3

Note: Shaded areas represent comparative disadvantage.

This table shows that, in the last seven years, Oregon's comparative advantage in agricultural production has increased and the comparative advantage in food products has been declining since 1992. Actually, in 1994 and 1995 Oregon is at a comparative disadvantage in food products relative to the PNW and the United States. A possible explanation of this decline in Oregon's comparative advantage in SIC 20

may be the fact that Oregon's labor costs for workers in SIC 20 are higher than that of other states in the PNW and U.S.

Table 5 of the appendix shows that in 1994, Oregon workers in SIC 20 earn 27 cents per dollar of value-added, whereas incomes generated per dollar of value added in Idaho, Washington, and the United States are 24 cents, 26 cents, and 22 cents respectively. It also shows that food production in Oregon is more labor-intensive than in Idaho, Washington, and the U.S. In Oregon, there were 12.8 jobs per million dollars of value-added for the year 1994. For the same year, employment per million dollars of value-added in Idaho, Washington, and United States was 10.7 jobs, 10.5 jobs, and 11.5 jobs respectively. The possibility that Oregon pays higher wages to workers in food production relative to the PNW and U.S. combined with the notion that food production in Oregon is more labor-intensive relative to the PNW and U.S. may account for the fact that Oregon's comparative advantage in SIC 20 has declined in recent years.

### **5.3.2 Oregon's Competitiveness in Wood-related Industries**

The wood product industries are represented by two-digit SIC codes 24, 25, and 26. They represent lumber and wood products, furniture and fixtures, and paper and allied products respectively. The following table presents the comparative advantages

of Oregon's wood-related industries relative to the Pacific Northwest and the U.S. from 1989 to 1995.

Table 22. Comparison of Oregon's Comparative Advantage in Wood-related Industries relative to PNW and U.S. (%)

SIC	1989		1990		1991		1992		1993		1994		1995	
	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S
SIC 24	99	1 1 9 5	148	1 2 8 7	173	1 3 6 9	137	1 1 3 1	93	9 8 0	71	9 8 5	26	7 7 3
SIC 25	131	- 6 5	170	- 5 8	223	- 3 9	167	- 5 3	179	- 5 8	78	- 7 1	45	- 7 2
SIC 26	-23	1 1	-28	3	13	5 2	1	3 7	-7	2 9	-11	4 7	-41	1 0

Note: Shaded areas represent comparative disadvantage.

These indexes clearly show that Oregon has comparative advantage in lumber and wood products (SIC 24) relative to the PNW (ranging from a 99% relative advantage in 1989 to a 26% advantage in 1995). Oregon's comparative advantage in SIC 24 relative to the U.S. is even more distinct, ranging from 1195% relative

advantage in 1989 to 773% in 1995. In the furniture and fixtures category (SIC 25) Oregon holds a clear comparative advantage against the PNW, however versus the U.S., Oregon is at a distinct disadvantage throughout the 1989 to 1995 time span. Conversely, in the paper products category (SIC 26), Oregon holds a comparative advantage relative to the U.S.; however, Oregon is at a comparative disadvantage relative to the PNW (except for 1991 and 1992 when Oregon had a slight comparative advantage).

### **5.3.3. Oregon's Competitiveness in High-tech Industries**

The high-tech industries are represented by two-digit SIC codes 35, 36, and 38 which includes industrial machinery and computer equipment, electric equipment, and measuring instruments respectively. The following table presents the computed percentage comparative advantage of Oregon's high-tech industries relative to other states of Pacific Northwest region and the United States during 1989-1995.

Table 23. Comparison of Oregon's comparative advantage in high-tech industries relative to PNW and U.S.

SIC	1989		1990		1991		1992		1993		1994		1995	
	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S	PNW	U S
SIC 35	157	- 2 6	193	- 1 1	172	- 1 6	161	-6	150	6	121	- 3	105	2 5
SIC 36	169	- 3 7	211	- 2 8	224	- 2 1	200	- 1 7	151	- 1 6	85	- 1 7	86	5
SIC 38	152	1 1	202	2 6	220	3 3	204	2 6	171	1 9	120	1 2	85	1 1

Note: Shaded areas represent comparative disadvantage.

Clearly, these indexes indicate that Oregon relative to PNW region has been more efficient in the production of industrial machinery and computer equipment (SIC 35). For example Oregon was 157% more efficient in 1989, 193% in 1990, 172% in 1991, 161% in 1992, 150% in 1993, 121% in 1994, and 105% in 1995. Relative to U.S., Oregon improved its comparative advantage in the production of SIC 35 from -16% comparative disadvantage in 1989, to being +25% more efficient in 1995. Similarly, Oregon held its comparative advantage in the productions of electric equipment (SIC 36) and measuring instruments (SIC 38) relative to PNW during 1989-

1995 time period. Relative to U.S., Oregon improved its efficiency in the production of SIC 36 from -37% inefficiency in 1989 to +5% of comparative advantage in 1995 while its comparative advantage in SIC 38 varied between 11% and 26% in the 1989-1995 time span.

## Chapter 6

### Conclusion

These results indicate that Oregon is well balanced in the production of resource and non-resource based products. In 1995, Oregon's aggregate service sector which includes both non-government private services (SICs 15-17 and SICs 41-99) and government services generated about 76% of Oregon's gross state product (64% and 12% respectively), received about 76% of Oregon's payroll (58% and 18% respectively), and employed about 80% of Oregon's total employment (64% and 16% respectively). The lumber, wood and paper products contributed about 7% of Oregon's GSP, received 6% of Oregon's payroll, and employed about 5% of Oregon's employment. The agriculture sector generated about 7% of Oregon's GSP, received about 4% of Oregon's payroll, and accounted for about 5% of Oregon's employment. The high-tech industries made about 5% of Oregon's GSP, received 7% of Oregon's payroll, and employed about 4% of employment.

These results indicate that Value-added production (GSP), payroll, and employment provided by these economic sectors makes Oregon, and regions within



Oregon grow mostly through our aggregate service activities. However, trade oriented sectors of agriculture, wood, and high-tech injected nearly nine billion dollars into the Oregon economy in 1995.

As the first step for providing guidance regarding strategic investments in economic development, this study identified contribution of current economic activities to Oregon economy in terms of revenue, employment and trade. Second, this study revealed economic activities for which the region is most competitive and efficiently contribute toward economic development of the region.

The comparison of Oregon's efficiency in agricultural sector relative to the PNW and U.S. indicates that, in the last seven years, Oregon's comparative advantage in agricultural farm production (crops) has increased but its comparative advantage in agricultural processing (food products) has been declining since 1992. In fact, in 1994 and 1995 Oregon had comparative disadvantage in food products relative to both the PNW and the United States economies. One hypothesis advanced earlier is that (based on ASM wage component of value-added-bill), it is possible that this decline in Oregon's comparative advantage in SIC 20 may be due to the Oregon's higher labor costs (i.e., due to insurance compensation, or bidding seasonal workers away from

other states, etc.) higher for workers in SIC 20 relative other states in the PNW and U.S. The possibility that Oregon pays higher wages to workers in food production relative to the PNW and U.S. combined with the notion that food production in Oregon is more labor-intensive relative to the PNW and U.S. may account for the fact that Oregon's comparative advantage in SIC 20 has declined in recent years.

With regard to wood sector, the results indicate that Oregon has comparative advantage in lumber and wood products (SIC 24) relative to both the PNW U.S. economies. In the furniture and fixtures category (SIC 25) Oregon holds a clear comparative advantage against the PNW region, however it has a distinct disadvantage compared to the United States economy. Conversely, in the paper products category (SIC 26), Oregon holds a comparative advantage relative to the U.S., however, Oregon is at a comparative disadvantage relative to the PNW (except for 1991 and 1992 when Oregon had a slight comparative advantage).

Oregon's economic diversification towards high-tech, non-resource base industries is good news as long as clusters of such firms compensate their local communities more than the social costs that their existence creates for those communities, provided that they do not damage air and ground resources. During

1989-1995 time period, Oregon has been more competitive relative to the PNW region in industrial machinery and computer equipment (SIC 35). However, The degree of advantage has declined from 157% in 1989, to 105% in 1995. Relative to U.S., Oregon improved its comparative advantage in the production of SIC 35 from -16% comparative disadvantage in 1989, to being +25% more efficient in 1995. Similarly, Oregon held its comparative advantage in the productions of electric equipment (SIC 36) and measuring instruments (SIC 38) relative to PNW during 1989-1995 time period. Relative to U.S., Oregon improved its efficiency in the production of SIC 36 from -37% inefficiency in 1989 to +5% of comparative advantage in 1995 while its comparative advantage in SIC 38 varied between 11% and 26% in the 1989-1995 time span.

With regard to recent arguments advanced against high-tech industries, the results of this study indicates that Oregon is becoming more efficient (regionally as well as nationally) in production of high-tech products which may be partially be due to economies of scale associated with this sector. Hence, there is nothing wrong with following the "trickle-down" approach in strengthening Oregon's comparative

advantage in High-tech semiconductor industry, because as it was shown in Table 17, Oregon's high-tech industries are competitive relative to PNW during 1989-1995 period, and it is becoming more competitive relative to U.S. Finally, no region can sustain its economic well being by just following "trickle-up" or "trickle-down" approach. For a balanced economic growth and a sustainable standard of living regions have to adopt hybrid of these approaches. For Oregon to succeed in economic development, it takes both high-tech "trickle-down" and "trickle-up" strategies.

With regards to possible future research, a question that can be investigated is "Why are we not competitive in certain industries (i.e., food processing)?" One could hypothesize that labor costs, costs of materials, capital investments, and the cost of other inputs are high relative to other regions. Hence, we cannot be competitive in those industries. However, in further examining labor costs, wages are an indicator of marginal productivity of labor. It may be the case that we are more competitive in industries which pay higher wages relative to other regions. If this is the case, increasing training and education programs to increase labor productivity, and thus

wages, in addition to changing infrastructure, could lead to further economic development.

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**APPENDIX**

## Appendix, Table 1. Commodity Classifications

## BULK COMMODITIES

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
0101110000	0272	HORSES, LIVE, PUREBRED BREEDING
0101190000	0272	HORSES, LIVE, EXCEPT PUREBRED BREEDING ANIMALS
0101200000	0272	ASSES, MULES AND HINNIES, LIVE
0102100010	0241	BOVINE ANIMALS, LIVE, PUREBRED BREEDING DAIRY MALE
0102100020	0241	BOVINE ANIMALS LIVE, PUREBRED BREEDING DAIRY FEMALE
0102100030	0211	BOVINE ANIMALS, PUREBRED BREEDING EXCEPT DAIRY MALE
0102100050	0211	BOVINE ANIMALS, PUREBRED BREEDING EXCEPT DAIRY FEMALE
0102900000	0211	BOVINE ANIMALS, LIVE, NESOI
0103100000	0213	SWINE, LIVE, PUREBRED BREEDING ANIMALS
0103910000	0213	SWINE, LIVE, NESOI, WEIGHING LESS THAN 50 KG EACH
0103920000	0213	SWINE, LIVE, NESOI, WEIGHING 50 KG OR MORE EACH
0104100000	0214	SHEEP, LIVE
0104200000	0214	GOATS, LIVE
0105110010	0259	CHICKENS LIVE, NOT OVER 185G BREEDING STOCK, EGG-TYPE
0105110020	0259	CHICKENS LIVE, NOT OVER 185G BREEDING STOCK, MEAT-TYPE
0105110040	0259	CHICKENS, LIVE, NOT OVER 185G EACH, EX BREEDING STOCK
0105190020	0259	TURKEYS, LIVE, WEIGHING NOT OVER 185G EACH
0105190040	0259	DUCKS, GEESE AND GUINEAS, LIVE, NOT OVER 185G EACH
0105910000	0259	CHICKENS, LIVE, WEIGHING OVER 185G EACH
0105990000	0259	TURKEYS, DUCKS, GEESE, GUINEAS, LIVE, OVER 185G EACH
0106000000	0279	ANIMALS, LIVE, NESOI
0407000020	0259	BIRDS' EGGS, IN SHELL, FOR HATCHING
0409000050	0279	HONEY, NATURAL, NESOI
0511100000	0211	BOVINE SEMEN
0511994020	0211	CATTLE EMBRYOS
0601100000	0181	BULBS, TUBERS, CORMS, CROWNS & RHIZOMES ETC DORMANT
0601200000	0181	BULBS, ETC IN GROWTH OR FLOWER: CHICORY
0602100000	0181	UNROOTED CUTTINGS AND SLIPS OF PLANTS, NESOI
0602200000	0181	TREES, SHRUBS, BUSHES WHICH BEAR EDIBLE FRUIT/NUTS
0602300000	0181	RHODODENDRONS AND AZALEAS, GRAFTED OR NOT
0602400000	0181	ROSES, GRAFTED OR NOT
0602910000	0182	MUSHROOM SPAWN
0602992000	0181	ORCHID PLANTS, LIVE
0602993010	0181	CHRYSANTHEMUMS, LIVE, WITH SOIL ATTACHED TO ROOTS
0602993090	0181	HERBACEOUS PERENNIALS WITH SOIL ATTACHED, LIVE, NESOI
0602994000	0181	HERBACEOUS PERENNIALS WITHOUT SOIL ATTACHED, NESOI
0602996010	0181	TREES AND SHRUBS WITH SOIL ATTACHED TO ROOTS
0602996020	0181	POINSETTIAS, LIVE, WITH SOIL ATTACHED TO ROOTS
0602996090	0181	PLANTS, LIVE, WITH SOIL ATTACHED TO ROOTS, NESOI
0602999010	0181	TREES AND SHRUBS WITHOUT SOIL ATTACHED, NESOI
0602999090	0181	PLANTS, LIVE, WITHOUT SOIL ATTACHED TO ROOTS, NESOI
0604910000	0811	FOLIAGE, BRANCHES ETC, FRESH
0701100000	0134	POTATOES, SEED, FRESH OR CHILLED
0701900000	0134	POTATOES, EXCEPT SEED, FRESH OR CHILLED, NESOI
0702000000	0161	TOMATOES, FRESH OR CHILLED
0703102000	0161	ONION SETS, FRESH OR CHILLED
0703105000	0161	ONIONS AND SHALLOTS, NESOI, FRESH OR CHILLED
0703200000	0161	GARLIC, FRESH OR CHILLED
0703900000	0161	LEEKS & OTHER ALLIACEOUS VEGETABLES, FRESH OR CHILLED
0704100000	0161	CAULIFLOWER AND HEADED BROCCOLI, FRESH OR CHILLED
0704200000	0161	BRUSSELS SPROUTS, FRESH OR CHILLED
0704902000	0161	CABBAGE, FRESH OR CHILLED
0704904020	0161	BROCCOLI INCLUDING SPROUTING BROCCOLI, FRESH OR CHILLED
0704904040	0161	KOHLRABI AND SIMILAR EDIBLE BRASSICAS NESOI, FRESH/CHILLED
0705110000	0161	HEAD LETTUCE (CABBAGE LETTUCE), FRESH OR CHILLED
0705190000	0161	LETTUCE, EXCEPT HEAD LETTUCE, FRESH OR CHILLED
0705210000	0161	WITLOOF CHICORY, FRESH OR CHILLED
0705290000	0161	CHICORY, EXCEPT WITLOOF, FRESH OR CHILLED
0706103000	0161	CARROTS, FRESH OR CHILLED
0706104000	0161	TURNIPS, FRESH OR CHILLED
0706900000	0161	SALAD BEETS, RADISHES, ETC, NESOI, FRESH OR CHILLED
0707000000	0161	CUCUMBERS AND GHERKINS, FRESH OR CHILLED

## Appendix, Table 1, Continued

## BULK COMMODITIES

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
0708100000	0161	PEAS (PISUM SATIVUM), FRESH OR CHILLED
0708200000	0161	BEANS (VIGNA SPP., PHASEOLUS SPP.) FRESH OR CHILLED
0708900000	0161	LEGUMINOUS VEGETABLES, NESOI, FRESH OR CHILLED
0709100000	0161	GLOBE ARTICHOKE, FRESH OR CHILLED
0709200000	0161	ASPARAGUS, FRESH OR CHILLED
0709300000	0161	EGGPLANTS (AUBERGINES), FRESH OR CHILLED
0709400000	0161	CELERY OTHER THAN CELERIAC, FRESH OR CHILLED
0709510000	0182	MUSHROOMS, FRESH OR CHILLED
0709520000	0182	TRUFFLES, FRESH OR CHILLED
0709600000	0161	FRUITS OF GENUS CAPSICUM OR PIMENTA, FRESH OR CHILLED
0709700000	0161	SPINACH, NEW ZEALAND & ORACHE (GARDEN), FRESH OR CHILLED
0709904070	0161	SWEET CORN, FRESH OR CHILLED
0709905000	0161	VEGETABLES, NESOI, FRESH OR CHILLED
0714100000	0139	CASSAVA (MANIOC) FRESH OR DRIED, WHETHER/NT PELLET
0806100000	0172	GRAPES, FRESH
0807101500	0161	CANTALOUPE, FRESH
0807103500	0161	WATERMELONS, FRESH
0807109000	0161	MELONS, NESOI, FRESH
0807200000	0179	PAPAYAS (PAPAW) FRESH
0808100000	0175	APPLES, FRESH
0808200000	0175	PEARS AND QUINCES, FRESH
0809100000	0175	APRICOTS, FRESH
0809200020	0175	CHERRIES, SWEET VARIETIES, FRESH
0809200040	0175	CHERRIES, TART VARIETIES, FRESH
0809300000	0175	PEACHES, INCLUDING NECTARINES, FRESH
0809400000	0175	PLUMS, PRUNE PLUMS AND SHOES, FRESH
0810100000	0171	STRAWBERRIES, FRESH
0810200000	0171	RASPBERRIES/BLACKBERRIES/MULBERRIES/LOGANBERRIES, FRESH
0810300000	0171	CURRENTS, BLACK, WHITE/RED & GOOSEBERRIES EX KIWI, FRESH
0810400020	0171	BLUEBERRIES, FRESH
0810400050	0171	CRANBERRIES/OTHER FRUITS GENUS VACCINIUM, NESOI, FRESH
0810902060	0179	KIWI FRUIT (CHINESE GOOSEBERRIES), FRESH
0810905000	0179	FRUITS, FRESH, NESOI
0901110000	0179	COFFEE, NOT ROASTED, NOT DECAFFEINATED
0904110000	0139	PEPPER OF GENUS PIPER, NEITHER CRUSHED NOR GROUND
0905000000	0179	VANILLA BEANS
0906100000	0181	CINNAMON & CINNAMON-TREE FLOWERS, NT CRUSHED OR GROUND
1001100000	0111	DURUM WHEAT
1001901000	0111	WHEAT AND MESLIN SEED FOR SOWING (EXCEPT DURUM)
1001902000	0111	WHEAT AND MESLIN, EXCEPT SEED, NESOI
1002000000	0119	RYE IN THE GRAIN
1003002000	0119	BARLEY FOR MALTING PURPOSES
1003004000	0119	BARLEY, NESOI
1004000000	0119	OATS
1005100000	0115	CORN (MAIZE) SEED FOR SOWING, EXCLUDING SWEET CORN
1005902000	0115	CORN (MAIZE) YELLOW DENT, EXCEPT SEED
1005904040	0119	POPCORN, UNPOPPED, EXCEPT SEED
1005904060	0115	CORN (MAIZE) EXCLUDING SWEET CORN, NESOI EX SEED
1006100000	0112	RICE IN THE HUSK (PADDY OR ROUGH)
1007000020	0119	GRAIN SORGHUM SEEDS OF A KIND USED FOR SOWING
1007000040	0119	GRAIN SORGHUM EXCEPT SEEDS FOR SOWING
1008100000	0119	BUCKWHEAT
1008200000	0119	MILLET
1008300000	0119	CANARY SEED
1008900020	0119	WILD RICE
1008900040	0119	CEREALS, NESOI
1201000020	0116	SOYBEAN SEEDS FOR SOWING
1201000040	0116	SOYBEANS, WHETHER OR NOT BROKEN, EX SEED FOR SOWING
1202100000	0139	PEANUTS (GROUND-NUTS) RAW, IN SHELL
1204000000	0139	FLAXSEED (LINSEED), WHETHER OR NOT BROKEN
1205000000	0139	RAPE OR COLZA SEEDS, WHETHER OR NOT BROKEN
1206000020	0139	SUNFLOWER SEEDS, WHETHER OR NOT BROKEN, FOR OIL STOCK
1206000030	0139	SUNFLOWER SEEDS, WHETHER OR NOT BROKEN, FOR SOWING
1206000061	0119	SUNFLOWER SEEDS FOR HUMAN USE, IN SHELL, NESOI
1206000090	0119	SUNFLOWER SEEDS NOT FOR HUMAN USE, NESOI

## Appendix, Table 1, Continued

## BULK COMMODITIES

HS CODE	SIC CODE	COMMODITY DESCRIPTION
1207100000	0139	PALM NUTS AND KERNELS, WHETHER OR NOT BROKEN
1207200000	0131	COTTON SEEDS, WHETHER OR NOT BROKEN
1207300000	0139	CASTOR BEANS, WHETHER OR NOT BROKEN
1207400000	0139	SESAME SEEDS, WHETHER OR NOT BROKEN
1207500000	0119	MUSTARD SEEDS, WHETHER OR NOT BROKEN
1207600000	0119	SAFFLOWER SEEDS, WHETHER OR NOT BROKEN
1207910000	0139	POPPY SEEDS, WHETHER OR NOT BROKEN
1207920000	0173	SHEA NUTS (KARITE NUTS), WHETHER OR NOT BROKEN
1207990000	0173	OIL SEEDS & OLEAGINOUS FRUITS WHETHER OR NOT BROKEN, NESOI
1209110000	0133	SUGAR BEET SEED OF A KIND USED FOR SOWING
1209190000	0181	BET SEED USED FOR SOWING EXCEPT SUGAR BEET SEED
1209210020	0139	ALFALFA (LUCERNE) SEED FOR SOWING, CERTIFIED
1209210040	0139	ALFALFA (LUCERNE) SEED FOR SOWING EXCEPT CERTIFIED
1209222000	0139	CLOVER (TRIFOLIUM SPP.) SOWING SEED WHITE AND LADINO
1209224030	0139	CRIMSON CLOVER (TRIFOLIUM SPP.) SEED
1209224040	0139	CLOVER (TRIFOLIUM SPP.) SEED FOR SOWING, RED
1209224096	0139	CLOVER (TRIFOLIUM SPP.) SEED, NESOI
1209230020	0139	FESCUE SEED FOR SOWING, TALL
1209230040	0139	FESCUE SEED FOR SOWING, EXCEPT TALL
1209240000	0139	KENTUCKY BLUE GRASS (POA PRATENSIS L) SOWING SEED
1209250020	0139	RYE GRASS SEED FOR SOWING, ANNUAL
1209250040	0139	RYE GRASS SEED FOR SOWING, PERENNIAL
1209260000	0139	TIMOTHY GRASS SEED FOR SOWING
1209290020	0139	BENT GRASS (GENUS AGROSTIS) SEED FOR SOWING
1209290040	0139	ORCHARD GRASS SEED FOR SOWING
1209200045	0139	BERMUDA GRASS SEED OF A KIND USED FOR SOWING
1209290050	0139	SORGHUM-SUDAN GRASS SEED FOR SOWING
1209290060	0139	SUDAN GRASS SEED FOR SOWING
1209290085	0139	SEEDS OF FORAGE PLANTS, EXCEPT BEET, FOR SOWING, NESOI
1209300000	0181	SEEDS HERBACEOUS PLANTS PRINCIPALLY FLOWERS, FOR SOWING
1209914000	0181	ONION SEEDS FOR SOWING
1209916000	0181	PEPPER SEEDS FOR SOWING
1209918010	0181	CARROT SEEDS FOR SOWING
1209918020	0181	RADISH SEEDS FOR SOWING
1209918030	0181	SPINACH SEEDS FOR SOWING
1209918040	0181	CUCUMBER SEEDS FOR SOWING
1209918050	0181	LETTUCE SEEDS FOR SOWING
1209918060	0181	SQUASH SEEDS FOR SOWING
1209918070	0181	TOMATO SEEDS FOR SOWING
1209919000	0181	VEGETABLE SEEDS OF A KIND USED FOR SOWING, NESOI
1209992000	0181	TREE AND SHRUB SEEDS, FRUITS AND SPORES FOR SOWING
1209994020	0139	CANTALOUPE SEEDS, FRUIT AND SPORES USED FOR SOWING
1209994040	0139	WATERMELON SEEDS, FRUIT AND SPORES USED FOR SOWING
1209994060	0139	SEEDS, FRUITS AND SPORES USED FOR SOWING, NESOI
1212300000	0175	APRICOT PEACH OR PLUM STONES/KERNEL, EDIBLE, NESOI
1212990000	0139	VEGETABLE PRODUCTS (INC UNRT CHICORY RT) EDIBLE, NESOI
1213000000	0139	CEREAL STRAW AND HUSKS UNPREP WH/NT CHOP ETC OR PELLET
1214900020	0139	HAY, WHETHER OR NOT IN THE FORM OF PELLETS
1214900040	0139	RUTABAGAS LUPINES VETCHES & SIMILAR FORAGE PRD NESOI
1301200000	0831	GUM ARABIC
1301900000	0831	NATURAL GUMS, GUM RESINS, RESINS AND BALSAMS NESOI
1302310000	0831	AGAR-AGAR
1401100000	0831	BAMBOO, USED PRIMARILY FOR PLAITING
1401200000	0831	RATTANS USED PRIMARILY FOR PLAITING
1401900000	0831	VEGETABLE MATERIALS PRIMARILY USED FOR PLAITING, NESOI
1402100000	0831	KAPOK USED PRIMARILY AS STUFFING OR PADDING
1402910000	0831	VEGETABLE HAIR USED PRIMARILY AS STUFFING OR PADDING
1402990000	0831	VEGETABLE MATERIALS FOR STUFFING OR PADDING, NESOI
1403100000	0139	BROOMCORN USED PRIMARILY IN BROOMS OR IN BRUSHES
1403900000	0831	VEGETABLE MATERIALS USED IN BROOMS AND BRUSHES, NESOI
1404100000	0139	RAW VEGETABLE MATERIALS USED IN DYEING OR TANNING
1404900000	0139	VEGETABLE PRODUCTS NESOI
2308100000	0831	ACORNS AND HORSE-CHESTNUTS USED FOR ANIMAL FEED

## Appendix, Table 1, Continued

## SEMI-PROCESSED COMMODITIES

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
0201100010	2011	CARCASSES/HALF-CARCASSES OF VEAL, FRESH OR CHILLED
0201100090	2011	CARCASSES/HALF-CARCASSES BOVINE ANIMALS, NESOI, FRESH OR CHILLED
0201203000	2011	MEAT BOVINE ANIMALS, NESOI, CUTS WITH BONE, PROCESSED, FRESH OR CHILLED
0201206000	2011	MEAT BOVINE ANIMALS, CUTS WITH BONE EXCEPT PROCESSED, FRESH OR CHILLED
0201303000	2011	MEAT BOVINE ANIMALS, BONELESS PROCESSED, FRESH OR CHILLED
0201306000	2011	MEAT BOVINE ANIMALS, BONELESS EXCEPT PROCESSED, FRESH OR CHILLED
0202100010	2011	CARCASSES AND HALF-CARCASSES OF VEAL, FROZEN
0202100090	2011	CARCASSES AND HALF-CARCASSES BOVINE ANIMALS, NESOI, FROZEN
0202203000	2011	MEAT BOVINE ANIMALS, NESOI, CUTS WITH BONE, PROCESSED, FROZEN
0202206000	2011	MEAT BOVINE ANIMALS, CUTS WITH BONE EXCEPT PROCESSED, FROZEN
0202303000	2011	MEAT BOVINE ANIMALS, BONELESS, PROCESSED, FROZEN
0202306000	2011	MEAT BOVINE ANIMALS, BONELESS EXCEPT PROCESSED, FROZEN
0203110000	2011	CARCASSES AND HALF-CARCASSES OF SWINE, FRESH OR CHILLED
0203129000	2011	HAMS/SHOULDERS AND CUTS, BONE IN EXCEPT PROCESSED, FRESH OR CHILLED
0203192000	2011	MEAT OF SWINE, NESOI, PROCESSED, FRESH OR CHILLED
0203210000	2011	CARCASSES AND HALF-CARCASSES OF SWINE, FROZEN
0203229000	2011	HAMS, SHOULDERS AND CUTS, BONE IN EXCEPT PROCESSED, FROZEN
0203294000	2011	MEAT OF SWINE, NESOI, EXCEPT PROCESSED, FROZEN
0204100000	2011	CARCASSES AND HALF-CARCASSES OF LAMB, FRESH OR CHILLED
0204210000	2011	CARCASSES AND HALF-CARCASSES OF SHEEP, FRESH OR CHILLED
0204220000	2011	MEAT OF SHEEP, CUTS WITH BONE IN, NESOI, FRESH OR CHILLED
0204230000	2011	MEAT OF SHEEP, BONELESS, FRESH OR CHILLED
0204300000	2011	CARCASSES AND HALF-CARCASSES OF LAMB, FROZEN
0204410000	2011	CARCASSES AND HALF-CARCASSES OF SHEEP, FROZEN
0204420000	2011	MEAT OF SHEEP, CUTS WITH BONE IN, NESOI, FROZEN
0204430000	2011	MEAT OF SHEEP, BONELESS, FROZEN
0204500000	2011	MEAT OF GOATS, FRESH, CHILLED OR FROZEN
0205000000	2048	MEAT OF HORSES, ASSES, MULES, HINNIES, FRESH, CHILLED OR FROZEN
0206100000	2011	OFFAL OF BOVINE ANIMALS, EDIBLE, FRESH OR CHILLED
0206210000	2011	TONGUES OF BOVINE ANIMALS, EDIBLE, FROZEN
0206220000	2011	LIVERS OF BOVINE ANIMALS, EDIBLE, FROZEN
0206290000	2011	OFFAL OF BOVINE ANIMALS, EDIBLE, NESOI, FROZEN
0206300000	2011	OFFAL OF SWINE, EDIBLE, FRESH OR CHILLED
0206410000	2011	LIVERS OF SWINE, EDIBLE, FROZEN
0206490000	2011	OFFAL OF SWINE EXCEPT LIVERS, EDIBLE, FROZEN
0206800000	2011	OFFAL OF SHEEP, GOAT, HOSE, ASS, MULE, HINNY, EDIBLE, FROZEN, CHILLED
0206900020	2011	OFFAL OF SHEEP (INCLUDING LAMB), EDIBLE, FROZEN
0206900040	2011	OFFAL, GOAT, HORSE, ASSES, MULE, HINNIES, EDIBLE FROZEN
0207102000	2015	TURKEYS, NOT CUT IN PIECES, FRESH OR CHILLED
0207104020	2015	CHICKENS, YOUNG, NOT CUT IN PIECES, FRESH, CHILLED
0207104040	2015	CHICKENS, NESOI, NOT CUT IN PIECES, FRESH, CHILLED
0207104060	2015	DUCKS, GEESE, AND GUINEAS, WHOLE, FRESH OR CHILLED
0207210020	2015	CHICKENS, YOUNG, NOT CUT IN PIECES, FROZEN
0207210040	2015	CHICKENS, NESOI, NOT CUT IN PIECES, FROZEN
0207220000	2015	TURKEYS, NOT CUT IN PIECES, FROZEN
0207230000	2015	DUCKS, GEESE, AND GUINEAS, NOT CUT IN PIECES, FROZEN
0207310000	2015	LIVERS, FATTY, OF GEESE OR DUCKS, EDIBLE, FRESH OR CHILLED
0207390020	2015	CHICKEN CUTS AND EDIBLE OFFAL (INCLUDING LIVER), FRESH OR CHILLED
0207390040	2015	TURKEY CUTS AND EDIBLE OFFAL (INCLUDING LIVER), FRESH OR CHILLED
0207390060	2015	DUCKS, GEESE, GUINEAS CUTS AND EDIBLE OFFAL, NESOI, FRESH OR CHILLED
0207410000	2015	CHICKEN CUTS AND EDIBLE OFFAL (EXCEPT LIVERS), FROZEN
0207420000	2015	TURKEY CUTS AND EDIBLE OFFAL (EXCEPT LIVERS), FROZEN
0207430000	2015	DUCK, GEESE, GUINEA CUTS AND EDIBLE OFFAL (EXCEPT LIVERS), FROZEN
0207500000	2015	POULTRY LIVERS, FROZEN
0208100000	2015	RABBIT OR HARE MEAT AND OFFAL, FRESH, CHILLED, FROZEN
0208200000	0919	FROGS' LEGS, FRESH, CHILLED, OR FROZEN
0208900000	2011	MEAT AND EDIBLE MEAT OFFAL NESOI, FRESH, CHILLED, FROZEN

## Appendix, Table 1, Continued

## SEMI-PROCESSED COMMODITIES

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
020900000	2011	PIG AND POULTRY FAT, FRESH, CHILLED FROZEN, SALTED, DRIED, SMOKED
0210110000	2011	HAMS, SHOULDERS AND CUTS, BONE IN, SALTED, DRIED, SMOKED
0210120020	2011	BACON
0210120040	2011	BELLIES, CUTS, SWINE, SALTED, IN BRINE, DRIED, SMOKED
0210190000	2011	MEAT OF SWINE NESOI, SALTED, IN BRINE, DRIED, SMOKED
0210200000	2011	MEAT, BOVINE ANIMALS, SALTED, IN BRINE, DRIED, SMOKED
0210900000	2011	MEAT AND OFFAL, SALTED, DRIED, SMOKED, INCLUDING FLOUR AND MEAL
0401100000	2026	MILK AND CREAM, NT CONCNRD, NT SWEETD, NOV 1% FAT
0401200000	2026	MIL/CREAM, NT CONCNRD/SWT, FAT CONTENT OVER 1%, NOV 6%
0401300000	2026	MILK & CREAM, NOT CONCNRD/SWTN, FAT CONTENT OVER 6%
0402210000	2023	MILK/CREAM CNCTR NT SWTN PWD/OTH SOLID OVER 1.5% FAT
0402910000	2023	MILK & CREAM WHETHER OR NOT CONCENTRATED, NOT SWEETENED, NESOI
0402990000	2023	MILK AND CREAM, WHETHER OR NOT CONCENTRATED, SWEETENED, NESOI
0403900000	2026	BUTTERMILK/KEPHIR/CURDLED FERMENTED ACIDIFIED MILK AND CREAM
0404102000	2022	WHEY, WHETHER OR NOT CONCENTRATED OR SWEETENED, FLUID
0404104000	2023	WHEY, WHETHER OR NOT CONCENTRATED OR SWEETENED, DRIED
0405008020	2021	ANHYDROUS MILK FAT
0405008040	2021	FATS AND OILS DERIVED FROM MILK, NESOI
0407000040	0259	BIRDS' EGGS, IN SHELL, FRESH, PRESERVED OR COOKED
0408110000	2015	EGG YOLKS, DRIED, WHETHER OR NOT SWEETENED
0408190000	2015	EGG YOLKS, FRESH, FROZEN, COOKED BY WATER, MOLDED ETC
0408910000	2015	BIRDS' EGGS NOT IN SHELL, DRIED, WHETHER OR NOT SWEETENED
0408990000	2015	BIRDS' EGGS NOT IN SHELL, FRESH, FROZEN COOKED BY WATER, ETC
0502100000	2011	PIGS, HOGS, BOARS BRISTLES AND HAIR AND WASTE THEREOF
0502900000	0279	BADGER HAIR AND OTHER BRUSHMAKING HAIR AND WASTE THEREOF
0504000020	2013	HOG GUTS, BLADDERS, STOMACHS FOR SAUSAGE CASINGS
0504000040	2013	GUT/BLADDER/STOMACH OF ANIMALS, NESOI, FOR SAUSAGE CASINGS
0504000060	2013	GUTS, BLADDERS, AND STOMACHS OF ANIMALS, NESOI
0505900020	2077	FEATHER MEAL
0505900040	2077	BIRD SKIN/PART WITH FEATHER/DOWN; FEATHER PWDER/WASTE
0506100000	2011	OSSEIN AND BONES TREATED WITH ACID
0506900000	2011	POWDER AND WASTE OF BONES AND HORN-CORES, NESOI
0511995000	2077	ANIMAL PRODUCTS NESOI, DEAD ANIMALS CH 1, INEDIBLE
0603100000	0181	CUT FLOWERS AND FLOWER BUDS, FRESH
0603900000	0181	CUT FLOWERS/BUDS DRIED, DYED OR OTHERWISE PREPARED
0604100000	0831	MOSESSES, LICHENS FRESH DRIED ETC OTHERWISE PREPARED
0604990000	0811	FOLIAGES, BRANCHES ETC DRIED/DYED/BLEACHED/IMPREG ETC
0710100000	2037	POTATOES UNCOOKED/COOKED BY BOILING IN WATER, FROZEN
0710210000	2037	PEAS, RAW COOKED IN BOILING WATER, FROZEN
0710220000	2037	BEANS, RAW COOKED IN BOILING WATER, FROZEN
0710290000	2037	LEGUMINOUS VEG RAW/COOKED IN BOILING WATER, FROZEN, NESOI
0710300000	2037	SPINACH RAW/COOKED BY STEAMING/BOILING IN WATER, FROZEN
0710400000	2037	SWEET CORN RAW/COOKED BY STEAM/BOILING IN WATER FROZEN
0710800000	2037	VEGETABLES, NESOI RAW/COOKED BY BOILING, FROZEN
0710900000	2037	VEGETABLES MIXTURES, RAW/COOKED BY BOILING, FROZEN
0711100000	2035	ONIONS, PROVISIONALLY PRESERVED, INEDIBLE
0711200000	2035	OLIVES, PROVISIONALLY PRESERVED, INEDIBLE
0711300000	2035	CAPERS, PROVISIONALLY PRESERVED, INEDIBLE
0711400000	2035	CUCUMBERS/ GHERKINS PROVISIONALLY PRESERVED, INEDIBLE
0711900000	2035	VEGETABLES NESOI, VEGETABLE MIX, PROVISIONALLY PRESERVED, INEDIBLE
0712100000	2034	POTATOES, WHETHER OR NOT CUT OR SLICED, DRIED
0712202000	2034	ONION POWDER OR FLOUR
0712204000	2034	ONIONS, DRIED, EXCEPT POWDER OR FLOUR
0712300000	2034	MUSHROOMS & TRUFFLES, DRIED, WHOLE, CUT, SLICED ETC
0712904020	2034	GARLIC POWDER OR FLOUR
0712904040	2034	GARLIC, DRIED, EXCEPT POWDER OR FLOUR
0712908050	2034	SWEET CORN SEEDS OF A KIND USED FOR SOWING, DRIED
0712909000	2034	VEGETABLES NESOI & MIXTURES OF VEGETABLES DRIED ETC
0713101000	0119	PEAS, SEEDS OF A KIND USED FOR SOWING, DRIED, SHELLED
0713102000	0119	SPLIT PEAS (EX SEED) DRIED, SHELLED WH/NT SKIN/SPLIT
0713201000	0119	CHICKPEAS, SEEDS OF A KIND USED FOR SOWING, DRIED
0713202000	0119	CHICKPEAS (GARBANZOS), EXCEPT SEED, DRIED, SHELLED
0713311000	0119	BEANS, SEED, VIGNA MUNGO (L) HEPPEP ETC., DRIED
0713316000	0119	BEANS EX SEED VIGNA MUNGO HEPPEP, DRIED, SHELLED
0713321000	0119	SMALL RED (ADZUKI) BEANS, SEEDS FOR SOWING, DRIED
0713322000	0119	SMALL RED (ADZUKI) BEANS, EXCEPT SEED DRIED, SHELLED



## Appendix, Table 1, Continued

## SEMI-PROCESSED COMMODITIES

HS CODE	SIC CODE	COMMODITY DESCRIPTION
0713331000	0119	KIDNEY BEANS INCLUDING WHITE PEA BEANS, SEED DRIED
0713333000	0119	NAVY OR PEA BEANS, EXCEPT SEED, DRIED, SHELLED
0713335020	0119	DARK RED KIDNEY BEANS, (EX SEED), DRIED, SHELLED
0713335040	0119	LIGHT RED KIDNEY BEANS, (EX SEED), DRIED, SHELLED
0713335060	0119	KIDNEY BEANS INC WHITE PEA, NESOI, EX SEED, DRIED, SHELLED
0713391000	0119	BEANS (VIGNA SPP, PHASEOLUS) NESOI, SEEDS, DRIED
0713391500	0119	COWPEAS, EXCEPT SEED, DRIED, SHELLED
0713395010	0119	BLACK BEANS, EXCEPT SEED, DRIED, SHELLED
0713395020	0119	GREAT NORTHERN BEANS, EXCEPT SEED, DRIED, SHELLED
0713395030	0119	BABY LIMA BEANS, EXCEPT SEED, DRIED, SHELLED
0713395040	0119	LIMA BEANS, NESOI, EXCEPT SEED, DRIED, SHELLED
0713395050	0119	PINTO BEANS, EXCEPT SEED, DRIED, SHELLED
0713395060	0119	WHITE BEANS, NESOI, EXCEPT SEED, DRIED, SHELLED
0713395080	0119	BEANS, NESOI, EXCEPT SEED, DRIED, SHELLED
0713401000	0119	LENTILS, SEEDS OF A KIND USED FOR SOWING, DRIED
0713402000	0119	LENTILS, EXCEPT SEED, DRIED, SHELLED
0713501000	0119	BROAD BEANS & HORSE BEANS, SEEDS FOR SOWING, DRIED
0713502000	0119	BROAD BEANS AND HORSE BEANS EX SEED, DRIED, SHELLED
0713901000	0119	DRIED LEGUMINOUS VEGETABLES NESOI SEEDS FOR SOWING
0713909000	0119	DRIED LEGUMINOUS VEGETABLES, NESOI EX SEED, SHELLED
0714200000	0139	SWEET POTATOES, FRESH OR DRIED, WHETHER/NT PELLETS
0714900000	0139	ROOTS & TUBERS NESOI, FRESH OR DRIED, SAGO PITCH
0801100000	2068	COCONUTS, FRESH OR DRIED, WHETHER OR NOT SHELLED
0801200000	2068	BRAZIL NUTS, FRESH OR DRIED, WHETHER OR NOT SHELLED
0801300000	2068	CASHEW NUTS, FRESH OR DRIED, WHETHER OR NOT SHELLED
0802110000	0173	ALMONDS, FRESH OR DRIED, IN SHELL
0802120000	2068	ALMONDS, FRESH OR DRIED, SHELLED
0802210000	0173	HAZELNUTS OR FILBERTS, FRESH OR DRIED, IN SHELL
0802220000	2068	HAZELNUTS OR FILBERTS, FRESH OR DRIED, SHELLED
0802310000	0173	WALNUTS, FRESH OR DRIED, IN SHELL
0802320000	2068	WALNUTS, FRESH OR DRIED, SHELLED
0802400000	2068	CHESTNUTS, FRESH OR DRIED, W/NT SHELLED OR PEELED
0802502000	0173	PISTACHIOS, FRESH OR DRIED, IN SHELL
0802504000	2068	PISTACHIOS, FRESH OR DRIED, SHELLED
0802901000	0173	PECANS, FRESH OR DRIED, IN SHELL
0802901500	2068	PECANS, FRESH OR DRIED, SHELLED
0802909100	0173	NUTS, NESOI, FRESH OR DRIED, IN SHELL
0803000000	2034	DATES, FRESH OR DRIED
0804100000	2034	FIGS, FRESH OR DRIED
0804300000	2034	PINEAPPLES, FRESH OR DRIED
0804400000	2034	AVOCADOS, FRESH OR DRIED
0804500000	2034	GUAVAS, MANGOES AND MANGOSTEENS, FRESH OR DRIED
0805100020	0174	ORANGES, TEMPLE, FRESH OR DRIED
0805100040	0174	ORANGES, NESOI, FRESH OR DRIED
0805200020	0174	TANGERINES, FRESH OR DRIED
0805200040	0174	MANDARINS & SIMILAR CITRUS HYBRIDS NESOI, FRESH OR DRIED
0805302000	0174	LEMONS (CITRUS AURANTIFOLIA) FRESH OR DRIED
0805304000	0174	LIMES (CITRUS AURANTIFOLIA) FRESH OR DRIED
0805400000	0174	GRAPEFRUIT, FRESH OR DRIED
0805900000	0174	CITRUS FRUITS, INC KUMQUATS, NESOI, FRESH OR DRIED
0806200000	2034	GRAPES, DRIED (INCLUDING RAISINS)
0811100000	2037	STRAWBERRIES, UNCOOKED/COOKED BY WATER, FROZEN
0811200000	2037	RASPBERRIES/BLACKBERRIES/ETC UNCOOKED/COOKED BY WATER, FROZEN
0811902000	2037	BLUEBERRIES, UNCOOKED/COOKED BY WATER, FROZEN, W/N SWT
0811908040	2037	CHERRIES, SWEET VARIETIES, UNCOOKED/COOKED BY WATER, FROZEN
0811908060	2037	CHERRIES, TART VARIETIES, UNCOOKED/COOKED BY WATER, FROZEN
0811909000	2037	FRUIT & NUTS UNCOOKED/COOKED BY WATER W/N SWEETENED, NESOI
0812100000	2035	CHERRIES, PROVISIONALLY PRESERVED, INEDIBLE
0812200000	2035	STRAWBERRIES, PROVISIONALLY PRESERVED, INEDIBLE
0812900000	2035	FRUITS AND NUTS PROVISIONALLY PRESERVED, INEDIBLE, NESOI
0813100000	2034	APRICOTS, DRIED
0813200000	2034	PRUNES, DRIED
0813300000	2034	APPLES, DRIED
0813400000	2034	FRUIT, DRIED, NESOI, EX THAT OF HEADING 0801-0806
0813500000	2034	MIXTURES CONTAINING ONLY DRIED FRUITS OF CHAPTER 8
0813500040	2068	MIXTURES CONTAINING ONLY NUTS OF CHAPTER 8

## Appendix, Table 1, Continued

## SEMI-PROCESSED COMMODITIES

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
0813500060	2099	MIXTURES OF NUTS OR DRIED FRUITS OF CHAP 8, NESOI
0814000000	2034	PEEL, CITRUS OR MELON, FRESH/FROZEN/DRIED/PROVISIONALLY PRESERVED
0902100000	2099	GREEN TEA NOT FERMENTED IN IMMEDIATE PACKAGE CONTENT NOV 3KG
0902200000	2099	GREEN TEA (NOT FERMENTED) NESOI
0902300000	2099	BLACK TEA FERMENTED AND PARTLY FERMENTED TEA, PACKG NOV 3KG
0902400000	2099	BLACK TEA FERMENTED AND OTHER PARTLY FERMENTED TEA NESOI
0903000000	2099	MATE
0904120000	2099	PEPPER OF THE GENUS PIPER, CRUSHED OR GROUND
0904200000	2099	FRUITS OF GENUS CAPSICUM OR PIMENTA, DRIED/CRUSHED/GROUND
0906200000	2099	CINNAMON & CINNAMON-TREE FLOWERS, CRUSHED OR GROUND
0907000000	2099	CLOVES (WHOLE FRUIT, CLOVES AND STEMS)
0908100000	2099	MACE
0908300000	2099	CARDAMOMS
0909100000	2099	SEEDS OF ANISE OR BADIAN
0909200000	2099	SEEDS OF CORIANDER
0909300000	2099	SEEDS OF CUMIN
0909400000	2099	SEEDS OF CARAWAY
0909500000	2099	SEEDS OF FENNEL OR JUNIPER
0910100000	2099	GINGER
0910200000	2099	SAFFRON
0910300000	2099	TUMERIC (CURCUMA)
0910400000	2099	THYME; BAY LEAVES
0910500000	2099	CURRY
0910910000	2099	MIXTURES OF SPICES REFERRED TO IN NOTE 1(B) CHAP 9
0910990000	2099	SPICES, NESOI
0910910000	2099	MIXTURES OF SPICES REFERRED TO IN NOTE 1(B) CHAP 9
1006202000	2044	RICE, BASMATI, HUSKED (BROWN)
1006204020	2044	RICE, LONG GRAIN, HUSKED (BROWN)
1006204040	2044	RICE, MEDIUM GRAIN, HUSKED (BROWN)
1006204060	2044	RICE, SHORT GRAIN, HUSKED (BROWN)
1006204080	2044	RICE, MIXTURES OF HUSKED (BROWN), ANY SIZE GRAIN
1006301020	2044	RICE, SEMI OR WHOLLY MILLED, PARBOILED, LONG GRAIN
1006301040	2044	RICE, SEMI/WHOLLY MILLED, PARBOILED NESOI INCLUDING MIXTURES
1006309010	2044	RICE, SEMI/WHOLLY MILLED, NESOI, LONG GRAIN
1006309020	2044	RICE, SEMI/WHOLLY MILLED, NESOI, MEDIUM GRAIN
1006309030	2044	RICE, SEMI/WHOLLY MILLED, NESOI, SHORT GRAIN
1006309040	2044	RICE, SEMI/WHOLLY MILLED, NESOI MIXTURES OF GRAINS
1006400000	2044	RICE, BROKEN
1101000000	2041	WHEAT OR MESLIN FLOUR
1102100000	2041	RYE FLOUR
1102200000	2041	CORN (MAIZE) FLOUR
1102300000	2044	RICE FLOUR
1102900000	2041	CEREAL FLOURS OTHER THAN OF WHEAT OR MESLIN, NESOI
1103110020	2041	GROATS AND MEAL OF WHEAT, SEMOLINA
1103110040	2041	GROATS AND MEAL OF WHEAT, NESOI
1103120000	2041	GROATS AND MEAL OF OATS
1103130020	2041	GROATS AND MEAL OF CORN (MAIZE), CORNMEAL
1103130060	2041	GROATS AND MEAL OF CORN (MAIZE), NESOI
1103140000	2044	GROATS AND MEAL OF RICE
1103190000	2041	GROATS AND MEAL OF CEREAL, NESOI
1103210000	2041	PELLETS OF WHEAT
1103290000	2041	PELLETS OF CEREAL, NESOI
1104110000	2043	GRAINS, ROLLED OR FLAKED, OF BARLEY
1104120000	2043	GRAINS, ROLLED OR FLAKED, OF OATS
1104190000	2043	GRAINS, ROLLED OR FLAKED, OF CEREAL EXCEPT RICE OF 1006, NESOI
1104210000	2043	GRAINS WORKED (HULLED PEARLED SLICED KIBBLED) OF BARLEY
1104220000	2043	GRAINS WORKED (HULLED PEARLED SLICED KIBBLED) OF OATS
1104230000	2043	GRAINS WORKED (HULLED PEARLED SLICED KIBBLED) OF CORN
1104290000	2043	GRAINS WORKED ETC, OF CEREAL EXCEPT RICE OF 1006 NESOI
1104300000	2043	GERM OF CEREALS, WHOLE, ROLLED, FLAKED OR GROUND
1105100000	2034	FLOUR AND MEAL OF POTATOES
1105200000	2034	FLAKES OF POTATOES
1106100000	2034	FLOUR AND MEAL OF DRIED LEGUMINOUS VEGETABLES OF 0713
1106200000	2034	FLOUR AND MEAL OF SAGO, ROOTS/TUBERS OF HEADING 0714
1106300000	2034	FLOUR, MEAL AND POWDER OF THE PRODUCTS OF CHAPTER 8
1107100000	2083	MALT, NOT ROASTED

## Appendix, Table 1, Continued

## PROCESSED COMMODITIES

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
2101102025	2095	COFFEE, INSTANT/SOLUBLE, NOT DECAFFEINATED, NO ADDITIVE
2101102030	2095	COFFEE, INSTANT/SOLUBLE, DECAFFEINATED, NO ADDITIVE
2101105000	2095	COFFEE EXTRACT, ESSENCES/CONCENTRATES & PREP NESOI
2102100000	2099	YEASTS, ACTIVE
2102200000	2099	YEASTS, INACTIVE; OTH SINGLE-CELL DEAD MICRO-ORGNM
2102300000	2099	BAKING POWDERS PREPARED
2103100000	2035	SOY SAUCE
2103202000	2033	TOMATO KETCHUP
2103204000	2033	TOMATO SAUCES, NESOI
2103906040	2035	SALAD DRESSINGS, NESOI
2103906060	2035	MIXED CONDIMENTS AND MIXED SEASONINGS
2103300000	2035	MUSTARD FLOUR AND MEAL AND PREPARED MUSTARD
2103906020	2035	MAYONNAISE
2103907000	2035	SAUCES AND PREPARATIONS THEREOF, NESOI
2104100020	2034	SOUPS, BROTHS AND PREPARATIONS THEREOF, DRIED
2104100040	2091	SOUPS/BROTHS/PREPS OF, BASED ON FISH/SEAFD, NOT DRIED
2104100060	2032	SOUPS, BROTHS AND PREPS THEREOF, NESOI, EX DRIED
2104200000	2032	HOMOGENIZED COMPOSITE FOOD PREPARATIONS (NOTE 3)
2105000010	2024	ICE CREAM, WHETHER OR NOT CONTAINING COCOA
2105000060	2024	EDIBLE ICE, WHETHER OR NOT CONTAINING COCOA, NESOI
2106100000	2075	PROTEIN CONCENTRATES AND TEXTURED PROTEIN SUBSTANCES
2106906070	2087	PREPARATIONS FOR MANUFACTURE OF BEVERAGES, NESOI
2106906075	2023	COFFEE WHITENERS, NON-DAIRY
2106906080	2023	CREAM OR MILK SUBSTITUTES, NESOI
2106906085	2064	CONFECTIONERY INCL GUM CONTAINING SYNTHETIC SWEETENERS
2106906090	2099	FOOD PREPARATIONS, NESOI, CANNED
2106906095	2099	FOOD PREPARATIONS, NESOI, FROZEN
2202100030	2086	CARBONATED SOFT DRINKS
2202903000	2026	MILK-BASED DRINKS, NONALCOHOLIC
2202909010	2082	NONALCOHOLIC BEER
2202909090	2086	BEVERAGES NONALCOHOLIC NESOI EXCLUDING FRUIT, VEGETABLE JUICE
2203000000	2082	BEER MADE FROM MALT
2204100000	2084	SPARKLING WINE OF FRESH GRAPES
2204212000	2084	EFFERVESCENT WINE OF FRESH GRAPE IN CONTAINER 2L OR LESS
2204214000	2084	GRAPE WINE NESOI NOT OVER 14% ALCOHOL IN CONTAINER 2L OR LESS
2204217000	2084	GRAPE WINE NESOI OVER 14% ALCOHOL CONTAINER 2L OR LESS
2204290020	2084	GRAPE WINE NESOI NOT OVER 14% ALCOHOL CONTAINER OVER 2 LITERS
2204290040	2084	GRAPE WINE NESOI OVER 14% ALCOHOL CONTAINER OVER 2 LITERS
2204300000	2084	GRAPE MUST FERMENTATION PREV/ARRSTD BY ALCOHOL, EX 2009
2205100000	2084	VERMOUTH/GRAPE WINE FLAVORED WITH PLANTS ETC CONTAINER 2L OR LESS
2205900000	2084	VERMOUTH/GRAPE WINE FLAVORED WITH PLANTS ETC CONTAINER OVER 2L
2206007000	2084	FERMENTED BEVERAGES, NESOI
2207103000	2085	ETHYL ALCOHOL UNDENATURE 80%+HIGHER, FOR BEVERAGE
2208100000	2085	COMPOUND ALCOHOLIC PREPARATIONS FOR MFG OF BEVERAGES
2208200000	2084	GRAPE BRANDY
2208306020	2085	WHISKEYS, BOURBON, CONTAINERS NOT OVER 4 LITERS EACH
2208306040	2085	WHISKEYS, BOURBON, CONTAINERS OVER 4 LITERS EACH
2208309020	2085	WHISKEYS EXCEPT BOURBON, CONTAINERS NOT OVER 4 LITERS
2208309040	2085	WHISKEYS EXCEPT BOURBON, CONTAINERS OVER 4 LITERS
2208400030	2085	RUM AND TAFIA, CONTAINERS NOT OVER 4 LITERS EACH
2208400050	2085	RUM AND TAFIA, CONTAINERS OVER 4 LITERS
2208500000	2085	GIN AND GENEVA
2208904500	2084	CORDIALS, LIQUEURS, KIRSCHWASSER AND RATAFIA
2208906300	2085	VODKA
2208909000	2085	OTHER SPIRITUOUS BEVERAGES, NESOI
2209000000	2099	VINEGAR AND SUBSTITUTES FOR VINEGAR FROM ACETIC ACID
2301100000	2077	FLOUR MEAL AND PELLET MEAT/MEAT OFFAL INEDIBLE; GREAVE
2301200000	2077	FLOUR MEAL & PELLET OF FISH CRUSTACEANS ETC INEDIBLE
2303300000	2082	BREWING OR DISTILLING DREGS AND WASTE, WH/NOT PELLET
2309100000	2047	DOG AND CAT FOOD, PUT UP FOR RETAIL SALE
2309901010	2048	PET FOOD PUT UP FOR RETAIL SALE EXCEPT DOG AND CAT FOOD
2309901020	2048	POULTRY FEEDS, PREPARED
2309901030	2048	DAIRY CATTLE FEED, PREPARED

## PROCESSED COMMODITIES

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
2309901040	2048	LIVESTOCK FEED, PREPARED, NESOI
2309901050	2048	MIXED FEEDS OR MIXED FEED INGREDIENTS, ANIMAL, NESOI
2309908000	2099	PREPARATIONS USED IN ANIMAL FEEDINGS, NESOI

## Appendix, Table 1, Continued

## BULK FISH PRODUCTS

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
0301100000	0912	FISH, ORNAMENTAL, LIVE
0301910000	0912	TROUT (SALMON TRUTTA, GAIRRDNERI, CLARKI ETC), LIVE
0301920000	0912	EELS (ANGUILLA SPP.), LIVE
0301930000	0912	CARP, LIVE
0301990000	0912	FISH, LIVE, NESOI
0302110010	0273	RAINBOW TROUT FARMED FRESH/CHILLED EXC FLT/LVR/ROE
0302110090	0912	TROUT (EXCEPT FARMED RAINBOW TROUT) FRESH/CHILLED
0302120003	0273	ATLANTIC SALMON FARMED, FRESH/CHILLED EXC FLT/LVR/ROE
0302120004	0912	ATLANTIC SALMON NOT FARMED, FRESH/CHILLED EX FLT/LVR/ROE
0302120012	0912	CHINOOK (KING) SALMON FRESH/CHILLED EXC FILLET/LIVER/ROE
0302120022	0912	CHUM (DOG) SALMON FRESH/CHILLED EXC FILLET/LIVER/ROE
0302120032	0912	PINK (HUMPIE) SALMON FRESH/CHILLED EXC FILLET/LIVER/ROE
0302120042	0912	SOCKEYE (RED) SALMON FRESH/CHILLED EXC FILLET/LIVER/ROE
0302120052	0912	COHO (SILVER) SALMON FRESH/CHILLED EXC FILLET/LIVER/ROE
0302120062	0912	SALMON, NESOI, FRESH OR CHILLED EXC FILLET/LIVER/ROE
0302190000	0912	SALMONIDAE, NESOI, FRESH OR CHILLED
0302210000	0912	HALIBUT/GREENLAND TURBOT EXC FILLET, LIVER, ROE, FRESH/CHILLED
0302220000	0912	PLAICE EXCEPT FILLETS, LIVERS, ROES, FRESH/CHILLED
0302230000	0912	SOLE EXCEPT FILLETS, LIVERS & ROES, FRESH/CHILLED
0302290000	0912	FLATFISH NESOI EXCEPT FILLET, LIVER ROE, FRESH/CHILLED
0302310000	0912	ALBACORE/LONGFINNED TUNAS EXC FILLET, LIVER, ROE, FRESH/CHILLED
0302320000	0912	YELLOWFIN TUNAS EXCEPT FILLET, LIVER, ROE, FRESH OR CHILLED
0302330000	0912	SKIPJACK TUNAS EXCEPT FILLETS, LIVER, ROE, FRESH OR CHILLED
0302390020	0912	BLUEFIN TUNAS EXCEPT FILLETS, LIVER, ROE, FRESH OR CHILLED
0302390040	0912	TUNAS NESOI EXCEPT FILLETS, LIVERS, ROES, FRESH OR CHILLED
0302400000	0912	HERRINGS EXCEPT FILLETS, LIVERS, ROES, FRESH OR CHILLED
0302500000	0912	COD EXCEPT FILLETS, LIVERS, ROES, FRESH OR CHILLED
0302610000	0912	SARDINES EXCEPT FILLET, LIVER, ROE, FRESH OR CHILLED
0302620000	0912	HADDOCK EXCEPT FILLETS, LIVER, ROE, FRESH OR CHILLED
0302630000	0912	ATLANTIC POLLOCK EXCEPT FILLET, LIVER, ROE, FRESH OR CHILLED
0302640000	0912	MACKEREL EXCEPT FILLET, LIVER, ROE, FRESH OR CHILLED
0302650000	0912	DOGFISH, OTHER SHARK EXCEPT FILLET, LIVER, ROE, FRESH OR CHILLED
0302660000	0912	EELS EXCEPT FILLETS, LIVERS, ROES, FRESH OR CHILLED
0302693010	0912	SABLEFISH FRESH OR CHILLED EXCEPT FILLETS, LIVERS, ROES
0302693020	0912	LINCOD (OPHIODON ELONGATUS) FRESH OR CHILLED EXCEPT FILLET, LIVERS, ROES
0302696000	0912	FISH NESOI, FRESH OR CHILLED EXCEPT FILLETS, LIVERS, ROES
0302704010	0912	MULLET ROE, FRESH OR CHILLED
0307100020	0913	SEED OYSTERS, LIVE
0307210000	0913	SCALLOPS INCLUDING QUEEN SCALLOPS, LIVE, FRESH, CHILLED
0307310010	0273	MUSSELS, LIVE, FRESH OR CHILLED, FARMED
0307310090	0912	MUSSELS, LIVE, FRESH OR CHILLED, NOT FARMED
0307410020	0913	LOLIGO SQUID, LIVE, FRESH OR CHILLED
0307410040	0913	SQUID EXCEPT LOLIGO, LIVE, FRESH OR CHILLED
0307410060	0913	CUTTLE FISH, LIVE, FRESH OR CHILLED
0307510000	0913	OCTOPUS, LIVE, FRESH OR CHILLED
0307910021	0913	SEA URCHIN ROE, FRESH OR CHILLED
0307910029	0913	SEA URCHIN, LIVE, FRESH OR CHILLED (EXCEPT ROE)
0307910030	0913	CONCH, LIVE, FRESH OR CHILLED
0509000000	0919	NATURAL SPONGES OF ANIMAL ORIGIN

## Appendix, Table 1, Continued

## SEMI-PROCESSED FISH PRODUCTS

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
0303100012	0912	CHINOOK (KING) SALMON, FROZEN, EX FILLET/LIVER/ROE
0303100022	0912	CHUM (DOG) SALMON, FROZEN, EX FILLET/LIVER/ROE
0303100032	0912	PINK (HUMPIE) SALMON, FROZEN, EX FILLET/LIVER/ROE
0303100042	0912	SOCKEYE (RED) SALMON, FROZEN, EX FILLET/LIVER/ROE
0303100052	0912	COHO (SILVER) SALMON, FROZEN, EX FILLET/LIVER/ROE
0303100062	0912	PACIFIC SALMON, NESOI, FROZEN, EX FILLET/LIVER/ROE
0303210000	0912	TROUT (SALMO TRUTTA, SALMO CLARKI, ETC.), FROZEN
0303220000	0912	ATLANTIC & PACIFIC HALIBUT FROZEN EX FILLET/LIVER/ROE
0303310030	0912	GREENLAND TURBOT (GREENLAND HALIBUT) FROZEN, EX FILLET, ETC
0303320000	0912	PLAICE EXCEPT FILLETS, LIVERS AND ROES, FROZEN
0303330000	0912	SOLE, EXCEPT FILLETS, LIVERS AND ROES, FROZEN
0303390000	0912	FLAT FISH NESOI EXCEPT FILLETS, LIVERS, ROES, FROZEN
0303410000	0912	ALBACORE/LONGFINNED TUNAS EX FILLET/LIVER/ROE, FROZEN
0303420000	0912	YELLOWFIN TUNA EXCEPT FILLETS, LIVER AND ROES, FROZEN
0303430000	0912	SKIPJACK TUNAS EXCEPT FILLETS, LIVERS, ROES, FROZEN
0303490020	0912	BLUEFIN TUNAS EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303490040	0912	TUNAS, NESOI, EXCEPT FILLETS, LIVERS, ROES, FROZEN
0303500000	0912	HERRINGS EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303600000	0912	CODS EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303710000	0912	SARDINES EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303720000	0912	HADDOCK EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303730000	0912	ATLANTIC POLLOCK EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303740000	0912	MACKEREL EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303750000	0912	DOGFISH, OTHER SHARK EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303760000	0912	EELS EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303770000	0912	SEA BASS EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303780000	0912	WHITING AND HAKE, EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303794020	0912	MULLET, EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303794040	0912	BUTTERFISH, EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303794060	0912	SABLE FISH, EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303795000	0912	FISH NESOI, EXCEPT FILLETS, LIVERS, AND ROES, FROZEN
0303802000	0912	STURGEON ROE, FROZEN
0303804020	0912	HERRING ROE, FROZEN
0303804040	0912	SALMON ROE, FROZEN
0303804050	0912	ALASKA POLLOCK (THERAGRA CHALCOGRAMMA) ROE, FROZEN
0303804060	0912	MULLET ROE, FROZEN
0303804095	0912	FISH LIVERS AND ROES, NESOI, FROZEN
0304100000	0912	FISH FILLETS AND OTHER MEAT EXCEPT FISH STEAKS FRESH OR CHILLED
0304203025	0912	COD FILLETS, FROZEN
0304205005	0912	HALIBUT FILLETS, FROZEN
0304206030	0912	FRESH-WATER CATFISH FILLETS, FROZEN
0304207000	0912	ALASKA POLLOCK (THERAGRA CHALCOGRAMMA) FILLET, FROZEN
0304208000	0912	FISH FILLETS, NESOI, FROZEN
0304901002	0912	SURIMI, FROZEN
0304901005	0912	COD MINCED, NESOI, FROZEN
0304901009	0912	FISH MINCED, NESOI, FROZEN
0304908700	0912	FISH MEAT NESOI, EXCEPT FISH STEAK OR MINCED, FROZEN
0305100000	2091	FISH MEAL FIT FOR HUMAN CONSUMPTION
0305204020	2091	SALMON ROE, DRIED, SMOKED, SALTED OR IN BRINE
0305204040	2091	HERRING ROE, DRIED, SMOKED, SALTED OR IN BRINE
0305205000	2091	FISH LIVERS/ ROES NESOI, DRIED/SMOKED/SALTED/BRINE
0305300000	2091	FISH FILLETS, DRIED, SALTED OR IN BRINE, NOT SMOKED
0305410000	2091	PACIFIC, ATLANTIC AND DANUBE SALMON, SMOKED
0305420000	2091	HERRINGS, INCLUDING FILLETS, SMOKED
0305490000	2091	FISH INCLUDING FILLETS, SMOKED, NESOI
0305510000	2091	COD, DRIED, WHETHER OR NOT SALTED BUT NOT SMOKED
0305590000	2091	FISH, DRIED, WHETHER OR NOT SALTED BUT NOT SMOKED, NESOI
0305610000	2091	HERRINGS, SALTED NOT DRIED OR SMOKED IN BRINE

## Appendix, Table 1, Continued

## SEMI-PROCESSED FISH PRODUCTS

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
0305620000	2091	COD, SALTED BUT NOT DRIED OR SMOKED, IN BRINE
0305630000	2091	ANCHOVIES, SALTED NOT DRIED OR SMOKED, IN BRINE
0305690000	2091	FISH NESOI, SALTED NOT DRIED OR SMOKED, IN BRINE
0306110000	0913	ROCK LOBSTER AND OTHER SEA CRAWFISH, FROZEN
0306120000	0913	LOBSTERS, INCLUDING IN SHELL, FROZEN
0306130003	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE < 33 PER KG FROZEN
0306130006	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE 33-45 PER KG FROZEN
0306130009	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE 46-55 PER KG FROZEN
0306130012	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE 56-66 PER KG FROZEN
0306130015	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE 67-88 PER KG FROZEN
0306130018	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE 89-110 PER KG FROZEN
0306130021	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE 111-132 PER KG FROZEN
0306130024	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE 133-154 PER KG FROZEN
0306130027	0913	SHRIMP/PRAWN SHELL-ON COUNT SIZE >154 PER KG FROZEN
0306130040	0913	SHRIMPS AND PRAWNS, PEELED, FROZEN
0306142000	0913	CRABMEAT, FROZEN
0306144010	0913	KING CRABS, NESOI, FROZEN
0306144020	0913	SNOW CRABS, NESOI, FROZEN
0306144030	0913	DUNGENESS CRABS, NESOI, FROZEN
0306144090	0913	CRABS, NESOI, FROZEN
0306190010	0913	FRESHWATER CRAWFISH, FROZEN
0306190090	0913	CRUSTACEANS, NESOI, FROZEN
0306210000	0913	ROCK LOBSTER, OTHER SEA CRAWFISH FRESH/CHILLED/DRIED/SALTED
0306220000	0913	LOBSTERS, FRESH, CHILLED, DRIED, SALTED OR IN BRINE
0306230000	0913	SHRIMPS/PRAWNS INC SHELL, FRESH, CHILLED, DRIED, SALTED OR IN BRINE
0306242000	0913	CRABMEAT FRESH, CHILLED, DRIED, SALTED OR IN BRINE
0306244000	0913	CRABS NESOI FRESH, CHILLED, DRIED, SALTED OR IN BRINE
0306290000	0913	CRUSTACEANS NESOI FRESH, CHILLED DRIED, SALTED OR IN BRINE
0307100040	0913	OYSTERS NESOI LIVE OR FRESH, CHILLED, FROZEN, DRIED, SALTED, OR IN BRINE
0307290000	0913	SCALLOPS INCLUDING QUEEN, FROZEN, DRIED, SALTED, OR IN BRINE
0307390000	0913	MUSSELS, FROZEN, DRIED, SALTED, OR IN BRINE
0307490010	0913	SQUID FILLETS, FROZEN
0307490022	0913	LOLIGO OPALESCENS SQUID FROZEN (EX FILLET), DRIED, SALTED, OR IN BRINE
0307490024	0913	LOLIGO PEALEI SQUID FROZEN (EX FILLET), DRIED, SALTED, OR IN BRINE
0307490029	0913	LOLIGO SQUID NESOI, FROZEN (EX FILLET), DRIED, SALTED, OR IN BRINE
0307490050	0913	SQUID EX LOLIGO FROZEN (EX FILLET), DRIED, SALTED, OR IN BRINE
0307490060	0913	CUTTLE FISH, FROZEN, DRIED, SALTED OR IN BRINE
0307590000	0913	OCTOPUS, FROZEN, DRIED, SALTED, OR IN BRINE
0307600000	0913	SNAILS NESOI LIVE, FRESH, CHILLED FROZEN, DRIED, SALTED, OR IN BRINE
0307990040	0913	CLAMS, FROZEN, DRIED, SALTED, OR IN BRINE
0307990080	0913	MOLLUSCS/AQUATIC INVERTEBRATES NESOI, FROZEN, DRIED, SALTED, OR IN BRINE
0410000000	0919	EDIBLE PRODUCTS OF ANIMAL ORIGIN, NESOI
0508000000	0919	CORAL, SHELL OF MOLLUSCS ETC UNWORKED POWDER/WASTE
0510004010	0919	PANCREAS GLANDS
0510004040	0919	CANTHARIDES, GLANDS USED FOR PHARMACEUTICAL PRODUCTS
0510005000	0919	AMBERGRIS/CASTOREUM/CIVET/MUSK NESOI BILE WHETHER OR NOT DRIED
0511910000	2077	PRODUCTS, FISH, CRUSTACEANS ETC, DEAD ANIMALS OF CH3
1212200000	0919	SEAWEEEDS AND OTHER ALGAE, FRESH OR DRIED, WH/NT GROUND
1604114050	2091	SALMON, WHOLE OR IN PIECES, BUT NOT MINCED, NESOI

## Appendix, Table 1, Continued

## PROCESSED FISH PRODUCTS

<u>HS CODE</u>	<u>SIC CODE</u>	<u>COMMODITY DESCRIPTION</u>
1604112000	2091	SALMON, WHOLE/PIECES. IN OIL IN AIRTIGHT CONTAINER
1604114010	2091	CHUM (DOG) SALMON, NOT IN OIL, CANNED
1604114020	2091	PINK (HUMPIE) SALMON, NOT IN OIL, CANNED
1604114030	2091	SOCKEYE SALMON, NOT IN OIL, CANNED
1604114040	2091	SALMON, NESOI, NOT IN OIL, CANNED
1604120000	2091	HERRINGS WHOLE, PIECES, NOT MINCED, PREPARED OR PRESERVED
1604130000	2091	SARDINES, SARDINELLA, BRISLING, NOT MINCED, PREPARED OR PRESERVED
1604140000	2091	TUNAS/SKIPJACK/ATLANTIC BONITO NOT MINCED, PREPARED OR PRESERVED
1604150000	2091	MACKEREL. PREPARED OR PRESERVED
1604160000	2091	ANCHOVIES, NOT MINCED, PREPARED OR PRESERVED
1604197000	2091	FISH WHOLE/PIECES, NOT MINCED, PREPARED OR PRESERVED. NESOI
1604200500	2091	PRODUCTS, MEAT CRUSTACEAN/MOLLUSCS ETC, PREP MEALS
1604206000	2091	FISH, PREPARED OR PRESERVED, NESOI
1604300000	2091	CAVIAR AND CAVIAR SUBSTITUTES
1605100500	2091	CRAB PRODUCTS CONTAINING FISH MEAT; PREPARED MEALS
1605102010	2091	KING CRABMEAT, PREPARED, IN AIRTIGHT CONTAINERS
1605102022	2091	C. OPILIO (SMALL) SNOW CRAB, PREP, AIRTIGHT CONTAINERS
1605102025	2091	SNOW CRABMEAT, PREPARED, NESOI, IN AIRTIGHT CONTAINERS
1605102030	2091	DUNGENESS CRABMEAT, PREPARED, IN AIRTIGHT CONTAINERS
1605102040	2091	CRABMEAT, PREPARED, NESOI, IN AIRTIGHT CONTAINERS
1605104002	2091	KING CRABMEAT, PREPARED, FROZEN
1605104005	2091	SNOW CRABMEAT, C. OPILIO (SMALL), PREPARED, FROZEN
1605104010	2091	SNOW CRABMEAT, NESOI, PREPARED, FROZEN
1605104015	2091	DUNGENESS CRABMEAT, PREPARED, FROZEN
1605104020	2091	CRABMEAT, NESOI, PREPARED, FROZEN
1605104040	2091	CRABMEAT, PREPARED OR PRESERVED, NESOI
1605106000	2091	CRABS, PREPARED OR PRESERVED, NESOI
1605200500	2091	SHRIMP, PRAWN PRODUCTS WITH FISH MEAT; PREPARED MEALS
1605201010	2091	SHRIMPS AND PRAWNS, FROZEN, IN AIRTIGHT CONTAINERS
1605201025	2091	SHRIMPS AND PRAWNS, PREPARED, FROZEN, NESOI
1605201040	2091	SHRIMPS AND PRAWNS, CANNED
1605201050	2091	SHRIMPS AND PRAWNS, PREPARED OR PRESERVED, NESOI
1605300500	2091	LOBSTER PRODUCTS WITH FISH MEAT; PREPARED MEALS
1605301020	2091	LOBSTER, IN AIRTIGHT CONTAINERS
1605301040	2091	LOBSTER, PREPARED OR PRESERVED, NESOI
1605400500	2091	CRUSTACEANS NESOI PRODUCT WITH FISH MEAT PREP MEAL
1605401000	2091	CRUSTACEANS, PREPARED OR PRESERVED, NESOI
1605900500	2091	MOLLUSCS ETC PRODUCTS WITH FISH MEAT; PREP MEALS
1605901500	0913	CLAMS, PREPARED OR PRESERVED
1605906020	2091	ABALONE (HALIOTIS SPP.) PREPARED OR PRESERVED
1605906040	2091	SCALLOPS, PREPARED OR PRESERVED
1605906050	2091	LOLIGO SQUID, PREPARED OR PRESERVED
1605906055	2091	SQUID EXCEPT LOLIGO, PREPARED OR PRESERVED
1605907000	0913	MOLLUSCS, AQUATIC INVERTEBRATES NESOI, PREPARED OR PRESERVED



Appendix, Table 2. Oregon GSP (\$1000) Based on OSU Data

Description	1992	1993	1994	1995
<b>Farm Level<sup>1</sup></b>				
Production-Crops	1877966	2165369	2240561	2337759
Production-Livestock	806411	790436	757278	724143
<b>Total Farm Production</b>	<b>2684377</b>	<b>2955805</b>	<b>2997839</b>	<b>3061902</b>
<b>Manufacturing Level<sup>2</sup></b>				
Meat Animals	28248	29256	26755	24796
Dairy Products	98059	93341	95220	93074
Poultry and eggs	36328	29280	28537	29122
Other livestock and products	742	718	752	750
<b>All livestock and poultry</b>	<b>163377</b>	<b>152595</b>	<b>151265</b>	<b>147743</b>
Grain and hay	62445	73490	79013	73929
Fruits and nuts	280797	235464	267593	262644
Vegetables	555779	554339	634823	638666
Other Crops	247494	315790	308861	339522
<b>All Crops</b>	<b>1146515</b>	<b>1179083</b>	<b>1290290</b>	<b>1314761</b>
<b>All Food manufacturing</b>	<b>1309892</b>	<b>1331677</b>	<b>1441555</b>	<b>1462504</b>
<b>from BEA:<sup>3</sup></b>				
<b>07(Ag)</b>	<b>434000</b>	<b>460000</b>	<b>484000</b>	<b>510000</b>
<b>28(Ag)</b>	<b>81000</b>	<b>84000</b>	<b>87000</b>	<b>91000</b>
<b>50(Ag)</b>	<b>191000</b>	<b>207000</b>	<b>227000</b>	<b>237000</b>
<b>51(Ag)</b>	<b>1088000</b>	<b>1127000</b>	<b>1177000</b>	<b>1223000</b>
<b>Total Agriculture</b>	<b>5788269</b>	<b>6165482</b>	<b>6414394</b>	<b>6585406</b>

Note: <sup>1</sup>Values for farm production are obtained from Oregon County and State Agricultural Estimates, 1992-1995, OSU Extension Service.

<sup>2</sup>Value-Added in food products for years 1993-95 were estimated by applying the 1992 value-added share of total farm gate value to farm values in 1992-1995 for the different commodity groups. The 1992 value-added data are from *Oregon Agricultural Commodities*, O.S.U., EC 1233, July 1994.

<sup>3</sup>BEA = Bureau of Economic Analysis

Appendix, Table 3. Oregon Gross State Product (Million \$) by 2 Digit SIC 1992 - 1995 based on ASM Data

SIC Code	Oregon	1992	1993 current	1994 current	1995 current
	Agriculture	5400	5572	5755	5933
01 - 02	<sup>1</sup> Farms	1553	1609	1680	1746
07	<sup>1</sup> Agricultural services	434	460	484	510
20	<sup>2</sup> Food and kindred products	2053	2085	2098	2127
28(Ag)	<sup>1</sup> Chemicals and allied products	81	84	87	91
50(Ag)	<sup>1</sup> Wholesale durable goods	191	207	227	237
51(Ag)	<sup>1</sup> Wholesale nondurable goods	1088	1127	1177	1223

<sup>1</sup>Bureau of Economic Analysis

<sup>2</sup>Annual Survey of Manufactures

note: 1992 GSP for agricultural share of SIC 07 was estimated using a ratio of employment in ag services as a percentage of total

SIC 28 (Ag) includes 2824(Organic Fibers), 2833(Medicinal and Botanicals), 286(Industrial Organic Chemicals), 287(Agriculture)  
 SIC 50 (Ag) includes 5083(Farm and Garden Machinery). SIC 51 (Ag) includes 5143(Dairy Products), 5144(Poultry Products),  
 515(Farm Product Raw Materials), 5191 (Farm Supplies).

**Appendix Table 4. Statistics for Oregon and the United States Value-added Contribution to Employment and Income 1993-1994**

SIC Code	Industry Group	OREGON			
		1994		1993	
		Employment per million\$ of value-added	Income generated per dollar of value-added (\$)	Employment per million\$ of value-added	Income generated per dollar of value-added
<b>20-39</b>	<b>All Manufacturing</b>	<b>12.8</b>	<b>0.39</b>	<b>13.3</b>	<b>0.39</b>
	<b>Agricultural Processing</b>	<b>11.6</b>	<b>0.27</b>	<b>15.0</b>	<b>0.29</b>
<b>20</b>	<b>Food and kindred products</b>	<b>11.6</b>	<b>0.27</b>	<b>15.0</b>	<b>0.29</b>
201	Meat Products	14.9	0.31	22.8	0.05
202	Dairy products	6.8	0.20	12.5	0.38
203	Preserved fruits & vegetables	13.7	0.28	20.3	0.35
204	Grain mill products	7.9	0.28	12.7	0.20
205	Bakery Products	10.8	0.34	12.6	0.37
208	Beverages	9.2	0.24	8.6	0.23
209	Misc. food & kindred products	14.7	0.28	15.7	0.28
<b>24-26</b>	<b>Wood Industries</b>	<b>12.6</b>	<b>0.36</b>	<b>12.2</b>	<b>0.34</b>
<b>24</b>	<b>Lumber and Wood Products</b>	<b>14.3</b>	<b>0.38</b>	<b>12.9</b>	<b>0.33</b>
241	Logging	10.3	0.25	9.1	0.22
242	Swamills and planing mills	16.8	0.48	14.0	0.39
243	Millwork, plywood, & structural membe	15.6	0.41	14.6	0.36
245	Wood building and mobile homes	19.3	0.49	16.4	0.43
249	Misc. wood products	11.4	0.32	12.3	0.35
<b>25</b>	<b>Furniture and fixtures</b>	<b>16.9</b>	<b>0.41</b>	<b>19.6</b>	<b>0.44</b>
251	Household furniture	15.9	0.39	20.6	0.41
<b>26</b>	<b>Paper and allied products</b>	<b>6.9</b>	<b>0.29</b>	<b>8.3</b>	<b>0.34</b>
262	Paper mills	9.4	0.47	10.4	0.50
263	Paperboard mills	6.1	0.28	11.2	0.52
265	Paperboard containers and boxes	(D)	(D)	(D)	(D)
267	Misc. converted paper products	4.6	0.16	5.5	0.17
<b>35, 36, 38</b>	<b>High-tech Industries</b>	<b>8.6</b>	<b>0.29</b>	<b>9.5</b>	<b>0.31</b>
<b>35</b>	<b>Industrial machinery &amp; equipment</b>	<b>12.9</b>	<b>0.45</b>	<b>15.6</b>	<b>0.50</b>
353	Construction & related machinery	12.7	0.43	14.9	0.50
354	Metalworking machinery	17.6	0.53	16.0	0.52
355	Special industry machinery	14.3	0.52	18.7	0.50
356	General industrial machinery	13.2	0.48	13.6	0.45
357	Computer nad office equipment	8.9	0.37	12.7	0.53
359	Industrial machinery, n.e.c.	18.1	0.51	19.1	0.51
<b>36</b>	<b>Electronic &amp; other electric equip.</b>	<b>6.5</b>	<b>0.21</b>	<b>6.4</b>	<b>0.20</b>
366	Communications equipment	12.1	0.42	6.5	0.18
367	Electronic components & accessories	5.6	0.19	5.5	0.19
369	Misc. electrical equipment and supplies	14.1	0.37	15.7	0.38
<b>38</b>	<b>Instruments and related products</b>	<b>8.2</b>	<b>0.29</b>	<b>10.4</b>	<b>0.37</b>
381	Search and navigation equipment	6.9	0.27	11.1	0.37
382	Measuring and controlling devices	7.4	0.26	11.3	0.40
384	Medical instruments and supplies	10.9	0.37	8.2	0.29

Source: U.S. Dept. of Commerce, Bureau of the Census, 1994 Annual Survey of Manufactures, Geographic Area Statistics.

Appendix Table 4. Continued

SIC Code	Industry Group	UNITED STATES			
		1994		1993	
		Employment per million\$ of value-added	Income generated per dollar of value-added	Employment per million\$ of value-added	Income generated per dollar of value-added
<b>20-39</b>	<b>All Manufacturing</b>	<b>11.5</b>	<b>0.37</b>	<b>12.3</b>	<b>0.39</b>
	<b>Agricultural Processing</b>	<b>8.8</b>	<b>0.22</b>	<b>9.2</b>	<b>0.23</b>
20	Food and kindred products	8.8	0.22	9.2	0.23
201	Meat Products	18.7	0.37	19.9	0.38
202	Dairy products	8.5	0.25	8.5	0.24
203	Preserved fruits & vegetables	8.7	0.20	9.0	0.20
204	Grain mill products	4.4	0.14	4.6	0.15
205	Bakery Products	11.1	0.30	11.7	0.31
208	Beverages	4.4	0.16	4.9	0.17
209	Misc. food & kindred products	8.9	0.21	9.0	0.21
<b>24-26</b>	<b>Wood Industries</b>	<b>14.2</b>	<b>0.38</b>	<b>14.8</b>	<b>0.39</b>
24	Lumber and Wood Products	17.7	0.39	18.2	0.40
241	Logging	14.7	0.31	14.6	0.30
242	Swamills and planing mills	16.2	0.37	17.3	0.39
243	Millwork, plywood, & structural member	19.2	0.44	19.4	0.45
245	Wood building and mobile homes	19.4	0.46	20.7	0.48
249	Misc. wood products	16.2	0.34	17.3	0.35
25	Furniture and fixtures	19.7	0.45	20.1	0.45
251	Household furniture	22.7	0.45	23.2	0.45
26	Paper and allied products	9.8	0.34	10.6	0.35
262	Paper mills	8.2	0.37	8.7	0.37
263	Paperboard mills	6.2	0.27	7.1	0.30
265	Paperboard containers and boxes	14.7	0.45	15.7	0.46
267	Misc. converted paper products	9.6	0.29	10.2	0.30
<b>35,36,38</b>	<b>High-tech Industries</b>	<b>10.3</b>	<b>0.36</b>	<b>11.2</b>	<b>0.38</b>
35	Industrial machinery & equipment	11.3	0.39	12.4	0.42
353	Construction & related machinery	12.1	0.41	12.6	0.42
354	Metalworking machinery	13.3	0.47	14.9	0.51
355	Special industry machinery	17.0	0.63	12.8	0.45
356	General industrial machinery	12.1	0.41	12.7	0.42
357	Computer nad office equipment	7.3	0.30	8.4	0.34
359	Industrial machinery, n.e.c.	16.6	0.49	18.5	0.54
36	Electronic & other electric equip.	10.1	0.33	11.2	0.35
366	Communications equipment	7.9	0.32	8.4	0.33
367	Electronic components & accessories	9.4	0.31	11.1	0.36
369	Misc. electrical equipment and supplies	11.4	0.36	12.3	0.36
38	Instruments and related products	8.9	0.34	9.5	0.35
381	Search and navigation equipment	9.1	0.43	9.4	0.42
382	Measuring and controlling devices	10.8	0.40	12.2	0.44
384	Medical instruments and supplies	9.5	0.33	9.7	0.32

Source: U.S. Dept. of Commerce, Bureau of the Census, 1994 Annual Survey of Manufactures, Geographic Area Statistics, M94(A)

**Appendix Table 5. Statistics for Pacific Northwest and U.S.  
Value-added Contribution to Total Employment and  
and Income 1994**

SIC Code	Industry Group	OREGON 1994	
		Employment per million\$ of value-added	Income generated per dollar of value-added (\$)
20-39	All Manufacturing	12.8	0.39
	Agricultural Processing	11.6	0.27
20	Food and kindred products	11.6	0.27
201	Meat Products	14.9	0.31
202	Dairy products	6.8	0.2
203	Preserved fruits & vegetables	13.7	0.28
204	Grain mill products	7.9	0.28
205	Bakery Products	10.8	0.34
206	Sugar & confectionery products	NR	NR
208	Beverages	9.2	0.24
209	Misc. food & kindred products	14.7	0.28
	Wood Industries	12.6	0.36
24	Lumber and Wood Products	14.3	0.38
241	Logging	10.3	0.25
242	Swamills and planing mills	16.8	0.48
243	Millwork, plywood, & structural	15.6	0.41
244	Wood containers		
245	Wood building & mobile homes	19.3	0.49
249	Misc. wood products	11.4	0.32
25	Furniture and fixtures	16.9	0.41
251	Household furniture	15.9	0.39
252	Office furniture	NR	NR
26	Paper and allied products	6.9	0.29
261	Pulp mills	NR	NR
262	Paper mills	9.4	0.47
263	Paperboard mills	6.1	0.28
265	Paperboard containers, boxes	(D)	(D)
267	Misc. converted paper products	4.6	0.16
	High-tech Industries	8.6	0.29
35	Industrial mach. & equipment	12.9	0.45
353	Construction & machinery	12.7	0.43
354	Metalworking machinery	17.6	0.53
355	Special industry machinery	14.3	0.52
356	General industrial machinery	13.2	0.48
357	Computer & office equipment	8.9	0.37
358	Refrigeration & service mach.	NR	NR
359	Industrial machinery, n.e.c.	18.1	0.51
36	Electronic & electric equip.	6.5	0.21
364	Electric lighting & wiring equip.		
366	Communications equipment	12.1	0.42
367	Electronic components & access.	5.6	0.19
369	Misc. electrical equip. & supp.	14.1	0.37
38	Instruments & related products	8.2	0.29
381	Search & navigation equipment	6.9	0.27
382	Measuring & controlling devices	7.4	0.26
384	Medical instruments & supplies	10.9	0.37

Source: U.S. Dept. of Commerce, Bureau of the Census, 1994 Annual Survey of Manufactures.

Table 6: The U.S. and PNW exports to the world, by state, by two-digit SIC commodity groups, (\$ U.S.), 1995

SIC Code	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHAR OF U.S.
ALL	ALL COMMODITIES	1,973,287,594	9,436,464,308	24,847,377,699	36,257,119,601	583,030,524,528	6.22%
01	CROPS	74,472,542	2,033,892,392	3,664,486,432	5,772,851,366	30,161,147,301	19.14%
02	LIVESTOCK	5,111,722	1,506,620	76,765,403	83,383,945	960,819,398	8.68%
08	FORESTRY	411,368	4,123,109	25,679,240	30,213,717	297,062,605	10.17%
09	FISHING, HUNTING & TRAPPING	1,800,538	39,506,428	460,850,758	502,157,724	2,952,067,619	17.01%
10	METAL MINING	11,470,804	463,700	17,144,233	29,068,737	1,586,100,710	1.83%
12	COAL MINING	0	998,829	2,289,350	3,288,179	3,573,756,914	0.09%
13	OIL AND GAS EXTRACTION	5,890	9,633	50,384,055	50,399,578	733,557,130	6.87%
14	MINING OF NONMETALIC MINERALS	3,467,055	2,642,523	26,552,981	32,662,557	1,320,632,037	2.47%
20	FOOD & KINDRED PRODUCTS	186,382,240	339,348,831	1,471,778,266	1,997,509,337	27,268,049,546	7.33%
21	TOBACCO PRODUCTS	0	13,249	835,530	848,779	5,300,061,532	0.02%
22	TEXTILE MILL PRODUCTS	194,180	5,345,599	32,802,331	38,342,210	6,115,094,381	0.63%
23	APPAREL	1,020,836	22,736,178	55,043,454	78,800,468	7,655,885,935	1.03%
24	LUMBER & WOOD PRODUCTS	24,599,670	1,106,102,906	2,242,692,172	3,373,394,747	7,832,232,081	43.07%
25	FURNITURES & FIXTURES	2,717,637	14,867,879	21,901,598	39,487,114	3,233,512,864	1.22%
26	PAPER & ALLIED PRODUCTS	188,514,226	278,958,843	1,359,341,460	1,826,812,529	15,730,889,565	11.61%
27	PRINTING & PUBLISHING	4,022,971	29,434,389	72,943,666	106,401,026	4,841,084,887	2.20%
28	CHEMICAL & ALLIED PRODUCTS	81,286,160	86,396,443	328,206,431	495,889,034	60,335,418,848	0.82%
29	PETROLEUM & PRODUCTS	344,382	31,816,691	311,238,637	343,399,710	6,148,122,931	5.59%
30	RUBBER & PLASTIC PRODUCTS	3,088,548	74,564,698	122,177,166	199,830,412	11,725,056,948	1.70%
31	LEATHER & LEATHER PRODUCTS	431,735	77,137,315	17,247,058	94,816,108	1,777,548,258	5.33%
32	STONE, CLAY & GLASS	580,676	52,272,934	43,204,684	96,058,294	5,079,139,916	1.89%
33	PRIMARY METAL INDUSTRIES	2,696,748	240,831,560	655,641,141	899,169,449	21,607,080,715	4.16%
34	FABRICATED METAL EQUIPMENT	22,215,089	105,982,304	183,570,027	311,767,420	16,245,059,417	1.92%
35	INDUSTRIAL & COMMERCIAL EQUIP.	701,976,364	2,142,968,692	1,172,952,588	4,017,897,644	105,947,586,799	3.79%
36	ELECTRIC & ELECTRICAL EQUIP.	584,496,013	1,568,981,941	1,081,082,056	3,234,560,010	92,203,527,655	3.51%
37	TRANSPORTATION EQUIPMENT	40,086,115	357,817,234	10,214,144,599	10,612,047,948	87,722,920,290	12.10%
38	MEASURING INSTRUMENTS	16,786,683	582,092,680	608,844,426	1,207,723,689	32,312,267,532	3.74%
39	MISCELLANEOUS MANUFACTURING	2,918,160	72,121,895	180,719,913	255,759,968	9,934,049,624	2.57%
91	TOTAL EXECUTIVE, LEGISLATIVE & GOVERNMENT	6,047,616	123,336,585	203,587,044	332,971,245	6,250,757,499	5.33%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAFETY	940,392	5,350,581	18,182,488	24,473,461	2,218,112,312	1.10%
98	UNIDENTIFIED	3,493,394	12,429,822	60,369,674	76,292,890	1,660,649,227	4.59%
99	TOTAL NONCLASSIFIABLE ESTABLISHMENTS	1,707,840	22,413,628	64,718,838	88,840,306	2,301,272,152	3.86%

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.

Table 7: The U.S. and PNW exports to the world, by states, by two-digit SIC commodity groups, (\$ U.S), 1994

SIC	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHARE OF U.S.
ALL	ALL COMMODITIES	1,612,570,840	7,247,127,180	26,148,815,627	35,008,513,647	512,415,609,180	6.83%
01	CROPS	78,785,129	1,621,532,235	1,880,098,275	3,580,415,639	22,915,445,013	15.62%
02	LIVESTOCK & ANIMAL SPECIALITIES	5,067,773	1,166,396	80,208,807	86,442,976	979,982,288	8.82%
08	FORESTRY	481,735	4,242,992	23,105,534	27,830,261	284,847,363	9.77%
09	FISHING, HUNTING AND TRAPPING	2,116,896	40,280,464	573,414,059	615,811,419	2,787,053,726	22.10%
10	METAL MINING	11,427,251	228,239	3,130,489	14,785,979	1,023,455,144	1.44%
12	COAL MINING	0	0	2,964,631	2,964,631	2,859,497,870	0.10%
13	OIL AND GAS EXTRACTION	0	3,588	16,965,998	16,969,586	585,816,596	2.90%
14	MINING & QUARRYING OF NONMETALIC MI	2,373,377	7,296,689	23,887,832	33,557,898	1,208,126,789	2.78%
20	FOOD AND KINDRED PRODUCTS	160,677,181	302,419,019	1,050,463,798	1,513,559,998	24,301,878,519	6.23%
21	TOBACCO PRODUCTS	0	13,323	1,568,612	1,581,935	5,504,137,355	0.03%
22	TEXTILE MILL PRODUCTS	143,537	3,696,670	27,413,641	31,253,848	5,536,589,362	0.56%
23	APPAREL AND OTHER FINISHED PRODUCTS	824,718	18,316,257	56,297,760	75,438,735	6,590,231,627	1.14%
24	LUMBER AND WOOD PRODUCTS EXCEPT FU	24,459,084	1,173,672,048	2,112,775,204	3,310,906,336	7,647,521,361	43.29%
25	FURNITURES AND FIXTURES	2,695,331	13,385,451	20,283,650	36,364,432	3,289,043,216	1.11%
26	PAPER AND ALLIED PRODUCTS	119,339,203	241,613,820	943,660,494	1,304,613,517	11,619,532,862	11.23%
27	PRINTING, PUBLISHING AND ALLIED INDUST	2,639,011	34,592,644	92,667,035	129,898,690	4,370,587,161	2.97%
28	CHEMICAL AND ALLIED PRODUCTS	58,088,541	66,738,512	400,718,434	525,545,487	51,086,034,578	1.03%
29	PETROLEUM REFINING AND RELATED IND	268,615	30,559,705	256,001,351	286,829,671	5,655,201,782	5.07%
30	RUBBER AND MISCELLANEOUS PLASTIC PRO	2,304,191	55,314,635	99,128,337	156,747,163	10,595,040,651	1.48%
31	LEATHER AND LEATHER PRODUCTS	420,824	52,934,653	8,199,220	61,554,697	1,746,214,988	3.53%
32	STONE, CLAY, GLASS AND CONCRETE PROD	630,990	48,515,635	39,721,157	88,867,782	4,600,176,037	1.93%
33	PRIMARY METAL INDUSTRIES	3,115,927	233,657,020	442,826,595	679,599,542	17,365,731,047	3.91%
34	FABRICATED METAL, EXCEPT MACHINERY	17,685,415	91,907,151	184,822,302	294,414,868	14,442,752,434	2.04%
35	INDUSTRIAL & COMMERCIAL MACHINERY	591,112,047	1,253,245,289	898,231,314	2,742,588,650	91,074,862,283	3.01%
36	ELECTRIC & OTHER ELECTRICAL EQUIP., E	489,203,771	890,231,806	949,416,430	2,328,852,007	75,557,316,999	3.08%
37	TRANSPORTATION EQUIPMENT	17,357,144	412,320,900	15,017,501,773	15,447,179,817	89,964,993,434	17.17%
38	MEASURING, ANALYZING, & CONTROLLING I	9,257,487	457,853,697	538,322,630	1,005,433,814	28,906,176,828	3.48%
39	MISCELLANEOUS MANUFACTURING INDUST	2,911,735	55,701,876	147,911,882	206,525,493	9,040,439,893	2.28%
91	TOTAL EXECUTIVE, LEGISLATIVE AND GEN	3,949,246	94,078,969	149,674,364	247,702,579	4,300,029,077	5.76%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAFET	1,286,851	14,575,935	18,642,171	34,504,957	2,470,063,948	1.40%
98	CONFIDENTIAL	2,280,802	10,620,049	64,504,631	77,405,482	1,591,870,554	4.86%
99	TOTAL NONCLASSIFIABLE ESTABLISHMENT	1,667,028	16,411,513	24,287,217	42,365,758	2,514,958,395	1.68%

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.

Table 8: The U.S. and PNW exports to the world, by states, by two-digit SIC commodity groups, (\$ U.S), 1993

SIC	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHARE OF U.S.
ALL	ALL COMMODITIES	1,236,308,847	6,127,550,131	29,421,263,848	36,785,122,826	464,858,398,369	7.91%
01	CROPS	59,601,155	1,275,562,497	2,191,408,024	3,526,571,676	22,221,926,333	15.87%
02	LIVESTOCK & ANIMAL SPECIALITIES	3,588,052	1,019,182	48,920,333	53,527,567	847,136,618	6.32%
08	FORESTRY	286,663	3,884,285	21,212,629	25,383,577	292,634,090	8.67%
09	FISHING, HUNTING AND TRAPPING	2,684,667	28,718,768	483,330,407	514,733,842	2,703,342,481	19.04%
10	METAL MINING	5,653,094	135,664	1,553,457	7,342,215	851,590,086	0.86%
12	COAL MINING			1,756,230	1,756,230	3,092,445,584	0.06%
13	OIL AND GAS EXTRACTION	185,580		31,703,600	31,889,180	590,644,237	5.40%
14	MINING & QUARRYING OF NONMETALIC MINERALS	2,682,867	6,504,840	26,765,969	35,953,676	1,115,663,016	3.22%
20	FOOD AND KINDRED PRODUCTS	107,144,918	295,196,244	1,041,890,876	1,444,232,038	21,589,745,840	6.69%
21	TOBACCO PRODUCTS		9,419	164,933	174,352	4,284,021,079	0.00%
22	TEXTILE MILL PRODUCTS	314,072	5,721,026	17,809,022	23,844,120	5,071,693,601	0.47%
23	APPAREL AND OTHER FINISHED PRODUCTS	565,498	13,518,762	57,641,628	71,725,888	5,819,362,736	1.23%
24	LUMBER AND WOOD PRODUCTS EXCEPT FURNITURE	25,907,999	1,098,215,422	2,285,337,229	3,409,460,650	7,711,243,961	44.21%
25	FURNITURES AND FIXTURES	2,940,976	16,653,198	16,226,625	35,820,799	3,014,858,339	1.19%
26	PAPER AND ALLIED PRODUCTS	95,795,787	169,250,347	829,875,948	1,094,922,082	9,961,198,270	10.99%
27	PRINTING, PUBLISHING AND ALLIED INDUSTRIES	1,960,443	33,287,987	147,400,594	182,649,024	4,379,324,305	4.17%
28	CHEMICAL AND ALLIED PRODUCTS	55,761,548	53,323,117	342,848,685	451,933,350	44,823,171,850	1.01%
29	PETROLEUM REFINING AND RELATED INDUSTRIES	70,098	23,317,065	311,070,944	334,458,107	6,311,930,650	5.30%
30	RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS	2,223,753	50,452,672	87,031,554	139,707,979	9,114,696,916	1.53%
31	LEATHER AND LEATHER PRODUCTS	296,096	39,419,478	8,761,336	48,476,910	1,729,560,164	2.80%
32	STONE, CLAY, GLASS AND CONCRETE PRODUCTS	327,915	44,988,255	42,350,144	87,666,314	4,135,920,032	2.12%
33	PRIMARY METAL INDUSTRIES	2,363,864	175,662,926	475,123,236	653,150,026	19,542,606,129	3.34%
34	FABRICATED METAL, EXCEPT MACHINERY & TRANS	17,974,526	108,618,467	145,046,600	271,639,593	14,424,441,152	1.88%
35	INDUSTRIAL & COMMERCIAL MACHINERY & COMPU	535,936,520	1,121,212,149	1,029,894,983	2,687,043,652	80,141,535,321	3.35%
36	ELECTRIC & OTHER ELECTRICAL EQUIP., EXCEPT C	273,381,337	691,023,978	689,780,372	1,654,185,687	62,343,107,077	2.65%
37	TRANSPORTATION EQUIPMENT	19,658,655	295,596,229	18,162,328,764	18,477,583,648	84,079,054,248	21.98%
38	MEASURING, ANALYZING, & CONTROLLING INSTRUM	10,541,636	421,614,424	501,150,515	933,306,575	26,785,347,384	3.48%
39	MISCELLANEOUS MANUFACTURING INDUSTRIES	4,031,864	55,818,947	142,740,481	202,591,292	7,974,661,694	2.54%
91	TOTAL EXECUTIVE, LEGISLATIVE AND GENERAL GO	900,848	66,594,458	112,214,023	179,709,329	3,451,794,936	5.21%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAFETY	212,852	5,629,236	67,306,124	73,148,212	2,653,442,886	2.76%
98	CONFIDENTIAL	2,271,624	11,683,983	58,930,491	72,886,098	1,418,338,102	5.14%
99	TOTAL NONCLASSIFIABLE ESTABLISHMENTS	1,043,940	14,917,106	41,688,092	57,649,138	2,381,959,252	2.42%

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.



Table 9: The U.S. and PNW exports to the world, by states, by two-digit SIC commodity groups, (\$ U.S.), 1992

SIC Code	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHARE OF U.S.
ALL	ALL COMMODITIES	1,161,677,211	5,639,556,633	30,614,232,016	37,415,465,860	447,471,018,668	8.36%
01	CROPS	49,836,914	1,278,480,283	2,403,854,616	3,732,171,813	22,955,509,200	16.26%
02	LIVESTOCK	1,506,742	1,516,945	48,793,678	51,817,365	902,190,497	5.74%
08	FORESTRY	356,349	3,434,613	14,588,261	18,379,223	343,304,095	5.35%
09	FISHING, HUNTING & TRAPPING	2,808,694	20,555,867	313,247,255	336,611,816	3,057,135,621	11.01%
10	METAL MINING	8,788,685	1,157,008	9,968,317	19,914,010	1,258,403,843	1.58%
12	COAL MINING	0	0	3,177,606	3,177,606	4,241,534,887	0.07%
13	OIL AND GAS EXTRACTION	0	6,372	37,291,264	37,297,636	743,320,802	5.02%
14	MINING OF NONMETALIC MINERALS	2,599,852	4,630,830	56,186,491	63,417,173	1,157,188,509	5.48%
20	FOOD & KINDRED PRODUCTS	122,000,403	297,603,226	1,022,764,327	1,442,367,956	21,039,175,863	6.86%
21	TOBACCO PRODUCTS	0	35,949	42,115	78,064	4,526,339,065	0.00%
22	TEXTILE MILL PRODUCTS	1,615,792	4,570,791	15,240,069	21,426,652	4,824,042,070	0.44%
23	APPAREL	553,574	9,464,371	45,763,185	55,781,130	4,929,019,083	1.13%
24	LUMBER & WOOD PRODUCTS	33,787,186	1,093,598,097	1,929,250,994	3,056,636,277	7,049,423,356	43.36%
25	FURNITURES & FIXTURES	2,617,998	16,095,956	213,556,007	40,069,561	2,706,027,019	1.48%
26	PAPER & ALLIED PRODUCTS	98,157,972	181,185,527	910,359,007	1,189,702,506	10,456,131,751	11.38%
27	PRINTING & PUBLISHING	3,001,256	34,678,370	145,337,359	183,016,985	4,081,780,864	4.48%
28	CHEMICAL & ALLIED PRODUCTS	49,287,187	46,893,436	417,408,677	513,589,300	43,844,610,189	1.17%
29	PETROLEUM & PRODUCTS	276,178	21,014,730	354,531,484	375,822,392	6,531,418,760	5.75%
30	RUBBER & PLASTIC PRODUCTS	2,588,957	26,438,928	68,760,715	97,788,600	8,332,286,904	1.17%
31	LEATHER & LEATHER PRODUCTS	287,920	40,080,555	9,612,115	49,980,590	1,736,332,999	2.88%
32	STONE, CLAY & GLASS	383,828	33,871,825	53,857,274	88,112,927	4,099,784,251	2.15%
33	PRIMARY METAL INDUSTRIES	2,259,360	249,177,803	640,614,325	892,051,488	15,837,622,064	5.63%
34	FABRICATED METAL EQUIPMENT	14,903,470	76,386,064	211,057,974	302,347,508	14,134,475,686	2.14%
35	INDUSTRIAL & COMMERCIAL EQUIP.	569,126,899	893,905,984	805,234,243	2,268,267,126	75,565,312,889	3.00%
36	ELECTRIC & ELECTRICAL EQUIP.	166,897,636	565,965,549	517,528,794	1,250,391,979	53,933,693,879	2.32%
37	TRANSPORTATION EQUIPMENT	15,000,582	234,339,744	19,655,513,972	19,904,854,298	86,693,026,860	22.96%
38	MEASURING INSTRUMENTS	6,856,442	392,122,459	457,193,031	856,171,932	24,665,208,499	3.47%
39	MISCELLANEOUS MANUFACTURING	3,202,524	35,292,432	202,876,432	241,371,388	7,624,748,053	3.17%
91	TOTAL EXECUTIVE, LEGISLATIVE & GOVER	573,309	50,183,363	140,025,918	190,782,590	3,502,981,389	5.45%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAFET	153,135	863,901	13,804,379	14,821,415	2,056,883,366	0.72%
98	UNIDENTIFIED	1,282,278	9,936,693	45,210,842	56,429,813	1,221,984,929	4.62%
99	TOTAL NONCLASSIFIABLE ESTABLISHMENT	966,089	16,068,962	43,781,690	60,816,741	3,420,121,426	1.78%

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.

Table 10: The U.S. and PNW exports to the world, by state, by two-digit SIC commodity groups, (\$ U.S.), 1995

SIC Code	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHARE OF U.S.
ALL	ALL COMMODITIES	1,973,287,594	9,436,454,308	24,847,377,699	36,257,119,601	583,030,524,528	6.22%
01	CROPS	74,472,542	2,033,892,392	3,664,486,432	5,772,851,366	30,161,147,301	19.14%
02	LIVESTOCK	5,111,722	1,506,820	76,765,403	83,383,945	960,819,398	8.68%
08	FORESTRY	411,368	4,123,109	25,679,240	30,213,717	297,062,505	10.17%
09	FISHING, HUNTING & TRAPPING	1,800,538	39,506,428	460,850,758	502,157,724	2,952,067,619	17.01%
10	METAL MINING	11,470,804	453,700	171,442,333	29,068,737	1,586,100,710	1.83%
12	COAL MINING	0	998,829	2,289,350	3,288,179	3,573,756,914	0.09%
13	OIL AND GAS EXTRACTION	5,890	9,633	50,384,055	50,399,578	733,557,130	6.87%
14	MINING OF NONMETALIC MINERALS	3,467,055	2,642,521	26,552,981	32,662,557	1,320,632,037	2.47%
20	FOOD & KINDRED PRODUCTS	186,382,240	339,348,831	1,471,778,266	1,997,509,337	27,268,049,546	7.33%
21	TOBACCO PRODUCTS	0	13,249	835,530	848,779	5,300,061,532	0.02%
22	TEXTILE MILL PRODUCTS	194,180	5,345,699	32,802,331	38,342,210	6,115,094,381	0.63%
23	APPAREL	1,020,836	22,736,178	55,043,454	78,800,468	7,655,885,935	1.03%
24	LUMBER & WOOD PRODUCTS	24,599,670	1,106,102,905	2,242,692,172	3,373,394,747	7,832,232,081	43.07%
25	FURNITURES & FIXTURES	2,717,637	14,867,879	21,901,598	39,487,114	3,233,512,864	1.22%
26	PAPER & ALLIED PRODUCTS	188,514,226	278,956,843	1,359,341,460	1,826,812,529	15,730,889,565	11.61%
27	PRINTING & PUBLISHING	4,022,971	29,434,389	72,943,666	106,401,026	4,841,084,887	2.20%
28	CHEMICAL & ALLIED PRODUCTS	81,286,160	86,396,443	328,206,431	495,889,034	60,335,418,848	0.82%
29	PETROLEUM & PRODUCTS	344,382	31,816,691	311,238,637	343,399,710	6,148,122,931	5.59%
30	RUBBER & PLASTIC PRODUCTS	3,088,548	74,564,698	122,177,166	199,830,412	11,725,056,948	1.70%
31	LEATHER & LEATHER PRODUCTS	431,735	77,137,315	17,247,058	94,816,108	1,777,548,258	5.33%
32	STONE, CLAY & GLASS	580,676	52,272,934	43,204,684	96,058,294	5,079,139,916	1.89%
33	PRIMARY METAL INDUSTRIES	2,696,748	240,831,560	655,641,141	899,169,449	21,607,080,715	4.16%
34	FABRICATED METAL EQUIPMENT	22,215,089	105,982,304	183,570,027	311,767,420	16,245,059,417	1.92%
35	INDUSTRIAL & COMMERCIAL EQUIP.	701,976,364	2,142,968,692	1,172,952,588	4,017,897,644	105,947,586,799	3.79%
36	ELECTRIC & ELECTRICAL EQUIP.	584,496,013	1,568,981,941	1,081,082,056	3,234,560,010	92,203,527,655	3.51%
37	TRANSPORTATION EQUIPMENT	40,086,115	357,817,234	10,214,144,599	10,612,047,948	87,722,920,290	12.10%
38	MEASURING INSTRUMENTS	16,786,683	582,092,580	608,844,426	1,207,723,689	32,312,267,532	3.74%
39	MISCELLANEOUS MANUFACTURING	2,918,160	72,121,895	180,719,913	255,759,968	9,934,049,624	2.57%
91	TOTAL EXECUTIVE, LEGISLATIVE & GOV	6,047,616	123,336,585	203,587,044	332,971,245	6,250,757,499	5.33%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAF	940,392	5,350,581	18,182,488	24,473,461	2,218,112,312	1.10%
98	UNIDENTIFIED	3,493,394	12,429,822	60,369,674	76,292,890	1,660,649,227	4.59%
99	TOTAL NONCLASSIFIABLE ESTABLISHM	1,707,840	22,413,628	64,718,838	88,840,306	2,301,272,152	3.86%

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.

Table 11: The U.S. and PNW exports to the world, by state, by two-digit SIC commodity groups, (\$ U.S.), 1990

SIC Code	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHARE OF U.S.
ALL	ALL COMMODITIES	995,270,397	5,120,319,333	28,812,261,276	34,927,851,006	392,975,324,483	8.89%
01	CROPS	57,865,402	1,185,738,290	2,844,860,731	4,088,464,423	22,616,925,639	18.08%
02	LIVESTOCK	1,797,870	1,228,519	51,196,699	54,223,088	849,369,466	6.38%
08	FORESTRY	411,165	1,943,200	30,497,957	32,852,322	294,821,648	11.14%
09	FISHING, HUNTING & TRAPPING	2,717,915	19,299,063	293,948,781	315,965,759	2,542,685,530	12.43%
10	METAL MINING	70,918,862	371,197	9,152,150	80,442,209	1,267,309,219	6.35%
12	COAL MINING	0	6,400	882,180	888,580	4,514,265,896	0.02%
13	OIL AND GAS EXTRACTION	0	0	2,634,230	2,634,230	477,297,871	0.55%
14	MINING OF NONMETALIC MINERALS	1,474,776	2,224,633	64,196,059	67,895,468	752,918,782	9.02%
20	FOOD & KINDRED PRODUCTS	107,021,516	255,006,108	832,252,561	1,194,280,185	17,595,845,739	6.79%
21	TOBACCO PRODUCTS	0	7,039	352,786	359,825	5,051,332,024	0.01%
22	TEXTILE MILL PRODUCTS	1,578,788	5,206,787	10,813,683	17,599,258	3,981,019,036	0.44%
23	APPAREL	239,337	5,971,601	13,683,256	19,894,194	3,080,609,809	0.65%
24	LUMBER & WOOD PRODUCTS	23,897,866	1,218,057,680	2,109,308,234	3,351,263,780	6,740,284,578	49.72%
25	FURNITURES & FIXTURES	897,940	9,328,447	13,369,414	23,595,801	1,688,572,219	1.40%
26	PAPER & ALLIED PRODUCTS	91,480,037	122,886,312	813,578,874	1,027,945,223	9,127,442,356	11.26%
27	PRINTING & PUBLISHING	3,176,989	24,375,829	86,602,318	114,155,136	3,352,908,830	3.40%
28	CHEMICAL & ALLIED PRODUCTS	32,417,940	32,167,909	401,358,909	465,944,758	40,070,376,176	1.16%
29	PETROLEUM & PRODUCTS	686,385	11,590,240	277,197,620	289,474,245	7,096,262,679	4.08%
30	RUBBER & PLASTIC PRODUCTS	980,512	21,419,992	60,494,092	82,894,596	6,654,750,964	1.25%
31	LEATHER & LEATHER PRODUCTS	134,135	43,910,922	5,141,683	49,186,740	1,575,113,876	3.12%
32	STONE, CLAY & GLASS	198,247	24,748,750	46,555,599	71,502,596	3,795,201,265	1.88%
33	PRIMARY METAL INDUSTRIES	11,512,195	163,943,990	1,059,919,213	1,235,375,398	13,331,497,486	9.27%
34	FABRICATED METAL EQUIPMENT	14,701,760	66,434,056	130,468,224	211,604,040	11,851,736,895	1.79%
35	INDUSTRIAL & COMMERCIAL EQUIP.	391,148,557	779,861,549	646,647,380	1,817,657,486	67,628,346,980	2.69%
36	ELECTRIC & ELECTRICAL EQUIP.	141,692,387	419,283,780	357,253,953	918,230,120	44,530,864,188	2.06%
37	TRANSPORTATION EQUIPMENT	15,779,691	201,044,996	17,769,867,615	17,986,692,302	71,554,836,677	25.14%
38	MEASURING INSTRUMENTS	5,814,637	348,554,460	434,150,963	788,520,060	21,219,535,313	3.72%
39	MISCELLANEOUS MANUFACTURING	1,899,385	28,631,028	120,376,909	150,907,322	6,412,525,090	2.35%
91	TOTAL EXECUTIVE, LEGISLATIVE & GOVER	1,931,628	105,957,891	169,056,664	276,946,183	5,079,669,035	5.45%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAFETY	123,631	649,576	5,905,115	6,678,322	1,578,611,942	0.42%
98	UNIDENTIFIED	1,636,345	7,345,181	34,724,967	43,706,493	888,372,245	4.92%
99	TOTAL NONCLASSIFIABLE ESTABLISHMENTS	11,138,499	13,123,908	115,810,457	140,072,864	5,774,015,030	

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.

Table 12: The U.S. and PNW exports to the world, by state, by two-digit SIC commodity groups, (\$ U.S.), 1989

SIC Code	COMMODITY DESCRIPTION	IDAHO	OREGON	WASHINGTON	PNW TOTAL	U.S.A.	PNW's SHARE OF U.S.
ALL	ALL COMMODITIES	836,099,854	5,090,612,807	23,964,772,327	29,891,484,988	348,126,806,974	8.59%
01	CROPS	43,467,810	1,346,494,890	2,977,260,239	4,367,222,939	24,408,024,443	17.89%
02	LIVESTOCK	1,914,812	1,303,708	60,228,395	63,446,915	829,652,405	7.65%
08	FORESTRY	140,760	3,414,253	42,687,425	46,242,438	330,599,607	13.99%
09	FISHING, HUNTING & TRAPPING	1,656,426	22,637,639	197,360,511	221,654,576	1,843,702,893	12.02%
10	METAL MINING	57,762,429	343,9115	972,5826	70,927,370	1,379,674,331	5.14%
12	COAL MINING	0	3,580	1,327,143	1,330,723	4,288,161,985	0.03%
13	OIL AND GAS EXTRACTION	115,885	5,118	5,315,310	5,436,313	89,467,380	6.08%
14	MINING OF NONMETALIC MINERALS	544,184	15,063,241	41,417,446	57,024,871	1,020,631,360	5.59%
20	FOOD & KINDRED PRODUCTS	115,637,369	221,148,589	944,013,886	1,280,799,844	16,244,878,912	7.88%
21	TOBACCO PRODUCTS	0	7,680	112,290	119,970	3,654,249,229	0.00%
22	TEXTILE MILL PRODUCTS	238,205	3,808,880	11,365,461	15,412,546	3,040,183,775	0.51%
23	APPAREL	327,826	4,809,328	10,477,541	15,614,695	2,542,574,177	0.61%
24	LUMBER & WOOD PRODUCTS	22,768,539	1,184,212,024	2,281,912,810	3,488,893,373	6,255,765,638	55.77%
25	FURNITURES & FIXTURES	95,258	5,015,060	7,661,680	12,771,998	989,704,726	1.29%
26	PAPER & ALLIED PRODUCTS	98,397,255	142,073,825	849,627,346	1,090,098,426	8,742,599,078	12.47%
27	PRINTING & PUBLISHING	1,502,929	22,152,430	70,299,603	93,954,962	2,845,814,491	3.30%
28	CHEMICAL & ALLIED PRODUCTS	24,259,291	31,610,657	320,877,468	376,747,416	37,698,547,795	1.00%
29	PETROLEUM & PRODUCTS	251,645	15,352,113	297,698,486	313,302,244	5,283,602,968	5.93%
30	RUBBER & PLASTIC PRODUCTS	699,978	18,085,061	44,736,296	63,521,335	4,992,716,351	1.27%
31	LEATHER & LEATHER PRODUCTS	98,446	24,525,392	5,588,819	30,212,657	1,224,979,840	2.47%
32	STONE, CLAY & GLASS	363,387	12,698,168	46,638,474	59,700,029	2,686,710,207	2.22%
33	PRIMARY METAL INDUSTRIES	2,487,003	196,802,267	1,047,758,649	1,247,047,919	11,883,178,405	10.49%
34	FABRICATED METAL EQUIPMENT	9,686,380	54,017,806	127,340,290	191,044,476	9,823,439,121	1.94%
35	INDUSTRIAL & COMMERCIAL EQUIP.	288,853,453	758,655,130	687,654,457	1,735,163,040	62,094,407,890	2.79%
36	ELECTRIC & ELECTRICAL EQUIP.	143,506,347	336,459,645	253,493,524	733,459,516	36,724,070,235	2.00%
37	TRANSPORTATION EQUIPMENT	8,142,203	190,123,274	12,835,541,025	13,033,806,502	61,807,144,884	21.09%
38	MEASURING INSTRUMENTS	5,209,932	314,796,416	413,861,994	733,868,342	19,416,878,081	3.78%
39	MISCELLANEOUS MANUFACTURING	1,081,057	21,837,918	91,128,611	114,047,586	5,430,172,851	2.10%
91	TOTAL EXECUTIVE, LEGISLATIVE & GOVERN	5,138,826	94,448,759	204,730,772	304,318,357	5,057,453,027	6.02%
92	TOTAL JUSTICE, PUBLIC ORDER AND SAFETY	89,539	908,848	3,860,004	4,858,391	89,275,706	5.44%
99	TOTAL NONCLASSIFIABLE ESTABLISHMENT	1,662,680	44,701,993	73,070,546	119,435,219	5,418,545,183	2.20%

SOURCE: National Trade Data Bank-The Export Connection (R), University of Massachusetts (MISER), State of Origin of Exports.