

Draft
December 14, 2001

The Upper Klamath Basin economy

Bruce Weber, Extension economicist, and Bruce Sorte, College of Agricultural Science, Oregon State University

This chapter provides an overview of the Upper Klamath Basin economy and an analysis of the economic role of agriculture and food processing in the Upper Klamath Basin economy.

Overview of the Upper Klamath Basin economy

The Upper Klamath Basin covers parts of five counties in Oregon and California. Almost all of the Oregon portion of the Basin lies in Klamath County, and the Basin covers most of the county, including the county seat Klamath Falls (population about 21,000), which is the major population center in the Basin. The Basin covers the northwest corner of Modoc County (not including the county seat of Alturas, population about 3,000) and the northeast corner of Siskiyou County in California, including the county seat Yreka (population about 7,500).

Given that most economic and demographic data needed to describe and analyze the regional economy is at the county level, we consider the Upper Klamath Basin economy to be the three counties of Klamath in Oregon and Modoc and Siskiyou in California. Even though such a definition includes economic activity outside the Basin in rural areas and some small towns in these counties (such as Alturas, California), and excludes economic activity in the Basin in some small and very rural parts of Jackson and Lake counties in Oregon, nevertheless it comes closer to capturing the size and character of the economy of the region than any alternative. This regional definition also captures most of the economic impacts of activity in the Basin, since it includes the economic centers in the Basin where most of the economic effects from business and household spending of money brought into the region (particularly that associated with irrigated agriculture) occur.

Our model of the Upper Klamath Basin economy was developed using the most recent data (1998) from IMPLAN (*IMPact Analysis for PLANing*), a software and database created to assist the Forest Service and other agencies in estimating the community impacts of policy decisions. The Minnesota IMPLAN Group, Inc., currently produces, refines, and annually updates the model and data for IMPLAN. IMPLAN can generate input-output models ("I-O models") for any county or group of counties in the United States. We cross-checked and revised key components of the model with data from the U.S. Bureau of Economic Analysis, the U.S. Department of Agriculture, and Oregon State University Extension Service.

The Upper Klamath Basin is home to about 120,000 people. The Upper Klamath Basin (UKB) economy produced \$4.0 billion worth of output in 1998, added \$2.3 billion in value to purchased inputs, and provided almost 60,000 jobs. Table 1 presents estimates of some basic economic indicators for the UKB economy and shows how these are distributed among sectors organized according to the North American Industrial Classification System (NAICS). Appendix A indicates the types of economic activity included in each of the NAICS sectors.

Table 1. Output, value added, and employment in the Upper Klamath Basin

Industry	Industry output		Value added		Employment	
	\$ Million	Shares (%)	\$ Million	Shares (%)	Jobs	Shares (%)
Agriculture, fishing & related	320	7.9%	169	7.3%	5,964	10.0%
Forestry & logging	30	0.7%	16	0.7%	248	0.4%
Mining	4	0.1%	2	0.1%	33	0.1%
Construction	327	8.1%	119	5.1%	3,357	5.7%
Manufacturing—food, beverages, textiles & related	128	3.2%	20	0.9%	407	0.7%
Manufacturing—wood products, paper, furniture & related	598	14.8%	241	10.3%	4,328	7.3%
Manufacturing—high tech. & related	17	0.4%	3	0.1%	94	0.2%
Manufacturing—other (e.g., sheet metal products)	113	2.8%	35	1.5%	844	1.4%
Transportation & warehousing	263	6.5%	139	6.0%	2,257	3.8%
Utilities	128	3.2%	80	3.4%	429	0.7%
Wholesale trade	142	3.5%	97	4.2%	2,036	3.4%
Retail trade	235	5.8%	205	8.8%	6,568	11.1%
Accommodation & food services	163	4.0%	92	4.0%	4,785	8.1%
Finance & insurance	197	4.9%	138	5.9%	2,179	3.7%
Real estate & rental & leasing	279	6.9%	202	8.7%	1,535	2.6%
Other services	186	4.6%	84	3.6%	3,733	6.3%
Information	100	2.5%	55	2.3%	1,241	2.1%
Administrative and support services, etc.	28	0.7%	16	0.7%	936	1.6%
Arts, entertainment, & recreation	31	0.8%	19	0.8%	1,133	1.9%
Health care and social assistance	316	7.8%	194	8.3%	5,859	9.9%
Professional, scientific, and technical services	38	0.9%	26	1.1%	865	1.5%
Educational services	182	4.5%	170	7.3%	6,010	10.1%
Public administration	200	5.0%	200	8.6%	4,551	7.7%
Inventory valuation adjustment	7	0.2%	7	0.3%	0	0.0%
	4,032	100.0%	2,327	100.0%	59,390	100.0%

Source: IMPLAN as adjusted with Bureau of Economic Analysis and local data.

The usual way of characterizing a regional economy is to describe the shares of output, value added (or income), or employment in each of the region's major sectors. *Output* is a measure of the dollar value of total production, including the dollar value of purchased inputs used in the production process. *Value added* is a measure of the value that is added to purchased inputs in the local production process by local labor and capital. (Value added equals the dollar value of output minus the value of purchased inputs used in the production process.) Value added is *income plus indirect business taxes* such as property taxes. Income—employee compensation, proprietor

income, and other property—equals 93 percent of value added in the UKB economy.¹ *Employment* is a measure of the number of full- and part-time jobs in each sector. Sectors in which the share of value added is high relative to the share of employment tend to have relatively high earnings. Table 1 presents information about the shares of each of these indicators in each of the UKB region's sectors.

The four sectors with the largest shares of output in 1998 were wood products² (15.5 percent), agriculture³ (11.1 percent), construction (8.1 percent), and health care/social assistance (7.8 percent). The four sectors with the largest shares of value added were wood products (11.0 percent), retail trade (8.8 percent), real estate (8.7 percent), and public administration (8.6 percent). The four sectors with the largest employment shares were retail trade (11.1 percent), agriculture (10.7 percent), educational services (10.1 percent), and health care/social assistance (9.9 percent). Each of these measures provides a perspective on how economic activity is distributed among sectors in the regional economy. But none of them identifies how much the regional economy depends on each sector.

One way of identifying the sectors on which the region's jobs and income depend and how much each sector contributes to the regional economy is to examine a region's *economic base*. According to economic base theory, the level of overall economic activity in a region is determined by the region's "economic base," defined as its "exports to markets outside the region." (Maki and Lichty 2000; 15)⁴ In an economic base model, different types of sectors play different roles. Those sectors that "export" a large share of their production or bring large inflows of money into the community are said to be *basic sectors*, or to be "responsible for" the jobs and income in the other sectors (*service sectors*) that sell a large share of their output in the local economy. In this economic-base framework, the activity of the service sectors depends on the respending of money brought in by the export sectors. In this sense, the employment and income in both basic and service sectors is dependent on the economic base and on the sectors that bring money into the region from outside.

The preferred method of estimating the economic base of a region is to use an input-output model, which directly estimates exports from each industry and, using the multipliers for each sector, generates estimates of the dependence of a regional economy on exports from each sector. A sector's contribution to a regional economy is determined by the dollars brought into the economy by that sector and the subsequent respending associated with these dollars. The contribution of an industry to the region's *employment* is the number of employees in all industries whose jobs are dependent, directly or indirectly (through interindustry linkages), on the exports of that industry (Cornelius et al. 2000; 14).

Table 2 summarizes the contribution of each sector to total regional employment, based on an analysis using the Upper Klamath Basin I-O Model. The procedure used to derive the estimates in Table 2 is described in Waters et al. (1998). The table compares the employment *in* a sector (as shown in Table 1) with employment *dependent* on a sector's production that is exported outside the region. The jobs under the Sectoral Employment columns are jobs in the given sector. The jobs in the Export-Dependent columns are jobs from *all* sectors that are dependent on the exports from the given sector.

As an example, there are 4,328 jobs *in* the Manufacturing—woods products sector in the UKB region. However, there are 6,992 jobs in the UKB region *dependent* on wood products exports. Of these, 3,087 jobs are *directly dependent* on the exports of wood products from the county. These jobs are related to the direct purchases made by wood products firms as they

1 In the UKB economy, employee compensation is 56 percent, proprietor income is 10 percent, and other property income is 27 percent of value added.

2 "Wood products" is defined here to include both forestry & logging, and manufacturing—wood products, paper, & furniture.

3 "Agriculture" is defined here to include agriculture, fishing & related, and manufacturing—food, beverages, textiles, and related.

4 The term "exports," as used here, includes any activities that bring dollars into the regional economy, including federal transfer payments and income to households from outside the region.

produce the products for export. In addition, there are 2,121 jobs *indirectly dependent* on wood products exports: these are the jobs created by the spending of the firms whose inputs were purchased by wood products to produce the exports. Yet another 1,784 jobs are *induced* by wood products exports: these are the jobs in retail trade, real estate, and health care that are created by the household respending of income earned in all the jobs generated directly and indirectly by wood products exports. The money that is brought into the UKB region by wood products exports is spent and respent in ways that generate these 6,922 jobs.

Table 2 indicates the dependence of Upper Klamath Basin regional employment on two natural resource sectors. *Agriculture* (agriculture, fishing & related, and food products manufacturing) supports 13.7 percent of the region's jobs, and *wood products* (forestry & logging and wood products manufacturing) supports 12.6 percent. Table 2 also identifies the dependence of the regional economy on two other sectors that are commonly the focus of local economic development efforts. Although the *Tourism* sector (Accommodation & Food Services and Arts, Entertainment & Recreation) has 10 percent of the total jobs in the region, it contributes only 3.4 percent of the export employment base. *Retail trade*, the sector with the largest employment share (11.1 percent), provides only 1 percent of the export employment base.

Table 2. Export base employment, Upper Klamath Basin Region, 1998.

Sector	Sectoral employment		Export-dependent employment				Dependency index (%)
	Number of jobs	Share (%)	Direct	Indirect	Induced	Total	
Agriculture, fishing & related	5,964	10.0	4,530.5	1,051.5	1,004.0	6,586.0	11.1
Forestry & logging	248	0.4	242.5	144.0	52.1	438.6	0.7
Mining	33	0.1	27.0	4.5	8.6	40.1	0.1
Construction	3,357	5.7	2,809.2	1,127.5	1,139.2	5,075.9	8.6
Manufacturing—food, beverages, & related	407	0.7	374.1	865.0	288.2	1,527.3	2.6
Manufacturing—wood products, paper, furniture & related	4,328	7.3	3,088.6	2,126.0	1,803.2	7,017.8	11.8
Manufacturing—high tech. & related	93	0.2	29.7	24.2	11.2	65.1	0.1
Manufacturing—other (e.g., sheet metal products)	844	1.4	727.7	319.9	271.9	1,319.5	2.2
Transportation & warehousing	2,257	3.8	1,102.5	517.8	618.9	2,239.2	3.8
Utilities	429	0.7	35.7	26.1	27.4	89.2	0.2
Wholesale trade	2,035	3.4	351.9	75.6	104.4	531.9	0.9
Retail trade	6,568	11.1	423.2	21.6	82.2	527.0	0.9
Accommodation & food services	4,785	8.1	1,541.0	188.5	226.8	1,956.3	3.3
Finance & insurance	2,179	3.7	138.8	34.5	43.1	216.4	0.7
Real estate & rental & leasing	1,535	2.6	95.3	49.8	26.4	171.5	0.3
Other services	3,733	6.3	1,110.2	237.5	235.3	1,583.0	2.7
Information	1,241	2.1	143.4	48.6	47.5	239.5	0.4
Administrative and support services, etc.	936	1.6	48.0	6.1	7.4	61.5	0.1
Arts, entertainment, & recreation	1,133	1.9	26.7	5.3	3.4	35.4	0.1
Health care and social assistance	5,859	9.9	370.8	64.5	122.3	557.6	0.9
Professional, scientific, and technical services	865	1.5	77.0	10.2	23.0	110.2	0.20
Educational services	6,010	10.1	4,545.9	86.0	1,207.6	5,839.5	9.8
Public administration	4,551	7.7	4,551.2	33.5	1,492.2	6,076.9	10.2
Households (e.g. Social Security)			11,952.4	1,946.6	3,185.4	17,084.4	28.8
Total	59,390	100.0	38,343.3	9,014.8	12,031.7	59,389.8	100.0

Source: UKB Modified IMPLAN Model

Table 2 also shows that UKB regional employment is even more dependent on *income to households from outside the region* than on any single industrial sector. Household income from government transfer payments (e.g., Social Security), dividends, commuters' income, rental payments, and other sources of income originating outside the region is an important part of the

export base: 17,084 jobs (or 28.8 percent of the jobs) in 1998 were dependent on those payments to households from outside the UKB region.

The dependence of the UKB economy on *federal and state government and educational institutions* is also evident from Table 2. Almost one-fifth of the jobs in the region depend on federal and state funding for services such as education and for government personnel. “Public administration” —federal and state payments to governments (federal payments in lieu of taxes, for example, or federal forest payments, or state-shared cigarette and highway revenues) and to government personnel (USFS, USDA, USFWS, for example)—supports 10.1 percent of all UKB region jobs. State and federal funding for “Educational services” (K–12 schools, the community college in California, and the Oregon Institute of Technology) plus OIT tuition payments by nonresidents supports 9.7 percent of the region’s jobs.

Table 3 provides estimates of the shares of regional income and value added dependent on each sector’s exports. The table also includes the comparable employment shares from Table 2. The major sectors on which regional employment depends also drive regional income and value added: “household income from outside the region,” wood products (manufacturing and forestry/logging), agriculture (agriculture and food manufacturing), and public administration. Because earnings in wood products sectors are higher than in the agricultural sectors, the regional *income* share that is dependent on wood products is higher than the *employment* share; and the regional *income* share dependent on agriculture is less than the *employment* share.

Table 3. Upper Klamath Basin Region export-base-dependent employment, income and value added 1998.

Sector	Jobs dependency index (%)	Income dependency index (%)	Value added dependency index (%)
Agriculture, fishing & related	11.09	9.14	9.24
Forestry & logging	0.74	0.93	0.99
Mining	0.07	0.09	0.10
Construction	8.55	8.43	8.33
Manufacturing—food, beverages, & related	2.57	2.60	2.64
Manufacturing—wood products, paper, furniture & related	11.82	14.68	14.50
Manufacturing—high tech. & related	0.11	0.10	0.10
Manufacturing—other (e.g., sheet metal products)	2.22	2.37	2.35
Transportation & warehousing	3.77	5.01	4.97
Utilities	0.15	0.37	0.39
Wholesale trade	0.90	0.90	1.02
Retail trade	0.89	0.65	0.73
Accommodation & food services	3.29	1.93	2.02
Finance & insurance	0.36	0.59	0.58
Real estate & rental & leasing	0.29	0.64	0.70
Other services	2.67	1.96	1.97
Information	0.40	0.44	0.44
Administrative and support services, etc.	0.10	0.06	0.06
Arts, entertainment & recreation	0.06	0.03	0.03
Health care and social assistance	0.94	0.88	0.86
Professional, scientific, and technical services	0.19	0.17	0.16
Educational services	9.83	8.17	7.84
Public administration	10.23	11.57	11.04
Households (e.g. Social Security)	28.77	28.28	28.94
Total	100.00	100.00	100.00

Source: UKB Modified IMPLAN model

Farming in the Upper Klamath Basin economy

Farms and Farm Characteristics. There were 2,239 farms in the Upper Klamath Basin in 1997 (Table 4). Farms averaged 896 acres in size. Most of the farms (78 percent) had some irrigation, and 27 percent of the region's farmland is irrigated. About one-third of the farms (38 percent) hire farm workers. Most (82 percent) farms are sole proprietorships and 78 percent are operated by the person living on the farm. Only 29 percent of the operators work full-time off the farm (more than 200 days). This is about three-quarters of the national average: 37 percent of all U.S. farm operators work more than 200 days off the farm.

Table 4. Characteristics of Upper Klamath Basin farms and farm operators, 1997

Farm characteristics	Klamath, OR	Siskiyou, CA	Modoc, CA	Klamath Basin total
Number of farms	1,066	733	440	2,239
Land in farms (acres)	713,534	628,745	662,927	2,005,206
Average size of farm (acres)	669	858	1,507	896
Number of farms with irrigation (farms)	851	556	337	1,744
Irrigated land (acres)	243,205	139,534	159,219	541,958
Market value of agricultural products sold (\$000)	100,622	74,244	63,797	238,663
Net cash return from agricultural sales for the farm unit (\$000)	20,104	16,389	11,249	47,742
Farms with hired labor (farms)	380	259	206	845
Number of hired farm workers (workers)	1,779	2,795	1,664	6,238
Hired farm labor payroll (\$000)	9,745	11,309	6,169	27,223
Number of sole proprietor farms	882	603	359	1,844
% Sole proprietor farms	83%	82%	82%	82%
Number of farm operators living on farm operated	871	569	317	1,757
% of farm operators living on farm operated	82%	78%	72%	78%
Number of farm operators working more than 200 days off-farm	347	201	101	649
% of Farm operators working more than 200 days off-farm	33%	27%	23%	29%

Source: 1997 Census of Agriculture

Production and Sales. Table 5 reports the value of production for each commodity for each county and for the region. The value of total agricultural production for the region for 1998 is estimated to be \$283 million. (The Census estimate of the value of sales for 1997 was \$239 million. All production in a region is not sold, since some production, such as hay or pasture, is used as input in the dairy or cattle operation. This year's sales also may involve previous year's production, if it includes sales out of inventory, or this year's production may be held in inventory for sales in future years. The value of production therefore generally will differ from the value of sales.) It is clear that raising livestock is the principal agricultural activity in the region: cattle, hay, and pasture account for 65 percent of the value of production.

Table 5. Value of agricultural production in the Upper Klamath Basin, 1998 (\$1,000).

Commodity	Klamath, OR	Siskiyou, CA	Modoc, CA	Klamath Basin total	% of Total value of production
Alfalfa hay	30,726	25,203	12,825	68,754	24.3%
Cattle	32,850	23,635	9,000	65,485	23.2%
Potatoes	14,217	19,323	7,866	41,406	14.6%
Pasture and range	n/a	13,005	7,560	20,565	7.3%
Other hay	4,856	3,713	3,588	12,157	4.3%
Barley	5,225	3,280	2,187	10,692	3.8%
Onions	n/a	2,862	2,464	5,326	1.9%
Wheat	1,660	2,805	859	5,324	1.9%
Dairy	13,112	2,442	n/a	15,554	5.5%
Horseradish	n/a	n/a	896	896	0.3%
Sugar beets	3,832	n/a	3,284	7,116	2.5%
Nursery products	n/a	17,271	n/a	17,271	6.1%
Other	1,000	5,319	5,973	12,292	4.3%
Total	107,478	118,858	56,502	282,838	100%

Source: Oregon State University Extension Service, California Agricultural Statistics Service

Income. Different sources of county-level information on the economics of agriculture in the Upper Klamath Basin provide somewhat different estimates of income and employment. Usually this is due to different definitions of what appear to be similar indicators. The Agriculture Census 1997 provides an estimate of “net cash return from agricultural sales.” This income measure does not include government payments, other farm-related income, or imputed rent, and it does not include deductions for depreciation. The 1997 Census estimate of “net cash returns from agricultural sales” for the UKB region is \$48 million. (Table 6). The U.S. Bureau of Economic Analysis (BEA) provides estimates of “farm proprietors’ income” that include government payments, farm-related income such as custom work and rent, and imputed rent for farm dwellings, and that deduct a capital consumption adjustment for depreciation. Farm proprietors’ income for 1998 is estimated by BEA to be about \$12 million, 0.5 percent of total personal income in the Upper Klamath Basin.

The Census and BEA also provide estimates of farm labor income. The 1997 Agriculture Census estimates “hired farm worker payroll” at \$27 million. The BEA estimates farm worker earnings at \$26 million for 1998.

BEA estimates that farm labor and proprietor income totaled about \$38 million or about 1.6 percent of total personal income in 1998.

Employment. The Census of Agriculture reports that there were 2,239 farm operators and 6,238 hired farm workers in 1997 (Table 4). The BEA estimate of farm proprietors for 1998 (Table 6) is 2,702, which is larger than the Census estimate for 1997. The BEA full- and part-time farm wage and salary employment estimate for 1998, however, of 1,812 is less than one-third of the Census estimate for 1997.⁵ Total farm proprietor and farm wage and salary employment represents 7.6 percent of total full- and part-time employment in the BEA estimates.⁶

5 The Oregon Employment Department estimate of total agricultural (worker) employment in 1997 is 1,490, twice the BEA estimate of 746, suggesting that BEA substantially undercounts farm workers.

6 The UKB IMPLAN model estimate of employment in Agriculture, fishing & related (which includes proprietors and hired farm workers) for 1998 is 5,964, accounting for 10 percent of total employment.

Table 6. Farm income, employment and personal income in the Upper Klamath Basin, 1987.

	Klamath, OR	Siskiyou, CA	Modoc, CA	UKB Region
Farm labor and proprietors' income (LPI) (\$000)	9,681	16,169	12,368	38,218
Farm proprietors' income (\$000)	-2,627	7,686	6,788	11,847
Farm wages, perquisites, and other labor income of hired farm workers	12,308	8,483	5,580	26,371
Personal income (\$000)	1,265,488	897,055	184,730	2,347,273
Population	63,160	44,024	9,338	116,522
Per capita personal income	20,036	20,376	19,783	20,144
Farm LPI as share of total PI	0.8%	1.8%	6.7%	1.6%
Farm proprietors' income as share of total PI	-0.2%	0.9%	3.7%	0.5%
Farm employment	2,059	1,587	868	4,514
Farm proprietors' employment	1,313	893	496	2,702
Farm wage and salary employment	746	694	372	1812
Total full- and part-time employment	32,427	22,251	4,561	59,239
Farm employment as share of full- and part- time employment	6.4%	7.1%	19.0%	7.6%

Source: US Bureau of Economic Analysis, Regional Economic Information System

Klamath Reclamation Project in Upper Klamath Basin agriculture

The Klamath Reclamation Project provides water to two-thirds (63 percent) of the 2,239 farms—and to four-fifths (80 percent) of the irrigated farms—in the Upper Klamath Basin. (Table 7). The Project contains about one-third (36 percent) of the region's irrigated acreage. Project farms produce almost half (45 percent) of the value of agricultural sales in the region.

Table 7. Klamath Reclamation Project (KRP) in Upper Klamath Basin (UKB).

Irrigated Farms 1997		Irrigated Acres 1997 (1000s)		Value of Sales 1997 (\$1000s)	
UKB	KIP	UKB	KIP	UKB	KIP
1744	1400	542	195	\$ 238,663	\$ 108,539

Source: 1997 Census of Agriculture; Tables 1 and 2 of Burke (2001) [next chapter in this report]

The next two chapters in this report analyze the impact of the changes in water allocation in the Klamath Reclamation Project that resulted from the issue of a new set of biological opinions about water needed to protect endangered and threatened species in Upper Klamath Lake and the Klamath River. The next chapter looks at the impacts of the 2001 Biological Opinions on on-farm crop production in the Klamath Reclamation Project. The subsequent chapter examines the economic effects of these changes in KRP agricultural production on the overall economy of the Upper Klamath Basin region.

References

- Cornelius, Jim, David Holland, Edward Waters, and Bruce Weber. 2000. Agriculture & the Oregon Economy. OSU Extension Service, Corvallis, OR.
- Maki, Wilbur R., and Richard W. Lichty. 2000. Urban Regional Economics. Iowa State University

⁷ Personal income is estimated by place of residence (for farms this is the same as place of work); employment is estimated by place of work.

Press , Ames, IA.

Waters, Edward C., Bruce A. Weber, and David W. Holland. 1999. The Role of Agriculture in Oregon's Economic Base: Findings from a Social Accounting Matrix. *Journal of Agricultural and Resource Economics* 24(1):266–280.

Appendix A. North American Industry Classification Sector descriptions

Agriculture, fishing & related: Growing crops, raising animals, harvesting fish and other animals, and services that support natural resource-based production.

Forestry & logging: Farm production of stumpage, pulpwood, fuel wood, Christmas trees, and fence posts. Operation of timber tracts, tree farms, and forest nurseries plus reforestation.

Mining: Establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas. The term *mining* is used in the broad sense to include quarrying, well operations, beneficiating (e.g., crushing, screening, washing, and flotation), and other preparation customarily performed at the mine site, or as a part of mining activity.

Construction: Construction of buildings and other structures, heavy construction (except buildings), additions, alterations, reconstruction, installation, and maintenance and repairs. Establishments engaged in demolition or wrecking of buildings and other structures, clearing of building sites, and sale of materials from demolished structures are also included. This sector also includes those establishments engaged in blasting, test drilling, landfill, leveling, earthmoving, excavating, land drainage, and other land preparation.

Manufacturing—(food, wood products, high tech–, other): the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Construction.

Transportation & warehousing: Providing transportation of passengers and cargo, warehousing and storing goods, scenic and sightseeing transportation, and supporting these activities.

Utilities: Provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal. Within this sector, the specific activities associated with the utility services provided vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; steam supply includes provision and/or distribution; water supply includes treatment and distribution; and sewage removal includes collection, treatment, and disposal of waste through sewer systems and sewage treatment facilities.

Wholesale trade: Establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

Retail trade: Establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

Accommodation & food services: Lodging and/or prepared meals, snacks, and beverages for immediate consumption.

Finance & insurance: Firms with payroll primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions, pooling risk, or under writing insurance and annuities.

Real estate & rental & leasing: Renting, leasing, or otherwise allowing the use of tangible assets (e.g., real estate and equipment), intangible assets (e.g., patents and trademarks), and establishments

providing related services (e.g., establishments primarily engaged in managing real estate for others, selling, renting, and/or buying real estate for others, and appraising real estate).

Other services: Services not specifically provided for elsewhere in the North American Industry Classification System (NAICS). Establishments in this sector are primarily engaged in activities such as repair and maintenance of equipment and machinery, personal and laundry services, and religious, grant making, civic, professional, and similar organizations. Establishments providing death care services, pet care services, photo finishing services, temporary parking services, and dating services also are included. Private households that employ workers on or about the premises in activities primarily concerned with the operation of the household are included in this sector.

Information: Establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data. The main components of this sector are the publishing industries, including software publishing, the motion picture and sound recording industries, the broadcasting and telecommunications industries, and the information services and data processing services industries.

Administrative and support services, etc.: Routine support activities for the day-to-day operations of other organizations. These essential activities are often undertaken in-house by establishments in many sectors of the economy. The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

Arts, eEntertainment, & recreation: Establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons. This sector comprises (1) establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and (3) establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

Health care and social assistance: Providing health care and social assistance for individuals. The services are delivered by trained professionals. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.

Professional, scientific, and technical services: Establishments that specialize in performing professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. The establishments in this sector specialize according to expertise and provide services to clients in a variety of industries and, in some cases, to households. Activities performed include: legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services.

Educational services: Instruction and training in a wide variety of subjects. This instruction and training is provided by specialized establishments, such as schools, colleges, universities, and training centers. These establishments may be privately owned and operated for profit or not for profit, or they may be publicly owned and operated. They also may offer food and accommodation services to their students. Educational services usually are delivered by teachers or instructors that explain, tell, demonstrate, supervise, and direct learning. Instruction is imparted in diverse settings,

such as educational institutions, the workplace, or the home through correspondence, television, or other means. It can be adapted to the particular needs of the students; for example, sign language can replace verbal language for teaching students with hearing impairments. All industries in the sector share this commonality of process; namely, labor inputs of instructors with the requisite subject matter expertise and teaching ability.

Public administration: Administration, management, and oversight of public programs by federal, state, and local governments.

Source: U.S. Executive Office of the President/Office of Management and Budget(OMB). 1999. North American Industry Classification System. Jist Works, Inc., Indianapolis, IN.