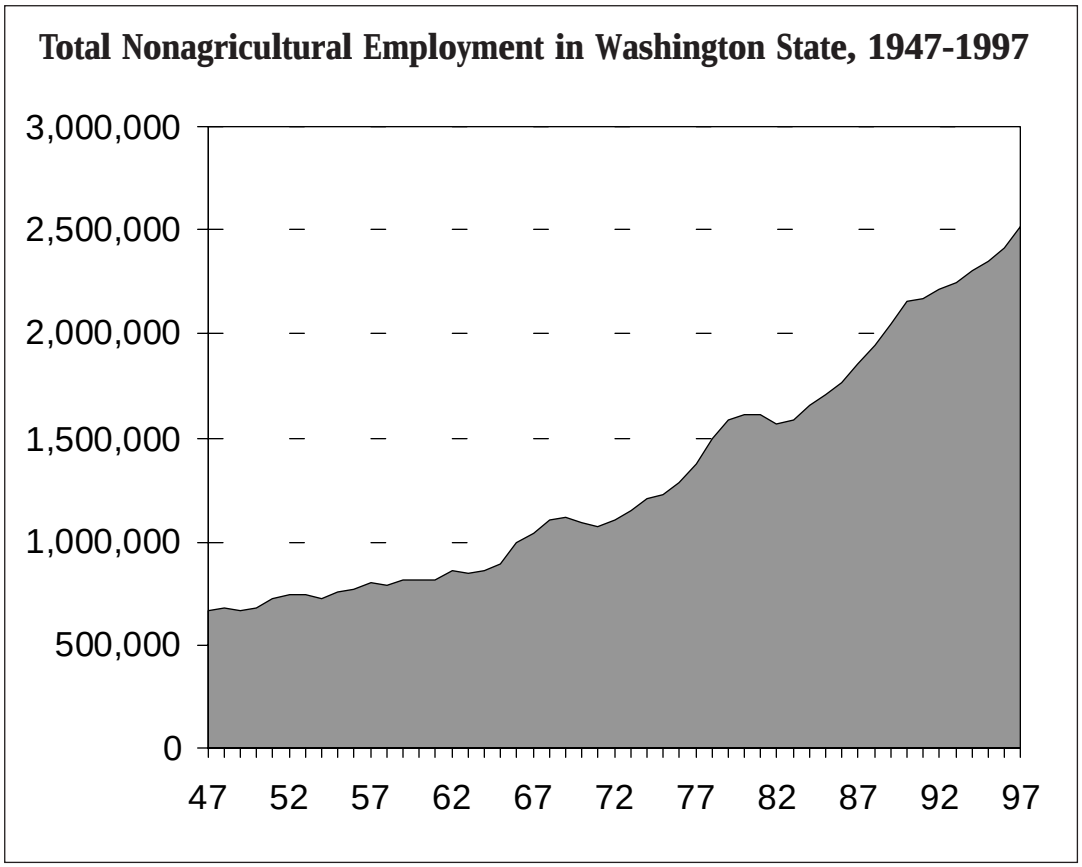
Studies in Industry and Employment

A 50-Year Perspective of Employment Trends in Washington State, 1947-1997



Washington State Employment Security
Labor Market and Economic Analysis Branch
Carver Gayton, *Commissioner*

May 1998

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Economic and Policy Analysis Unit
Gary Kamimura, *Economic Analyst*

Labor Market and Economic Analysis Branch
Gary Bodeutsch, *Director*

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Executive Summary

- Washington's unemployment rates moved in relative concert with national business cycles, though the 50-year pattern of jobless rates shows that the state's economy is more volatile than that of the nation due to a combination of seasonal and structural factors. In 1997, Washington's jobless rate was 4.8 percent, reflecting tight labor markets, especially in the central Puget Sound region.
- Washington's population has risen significantly since World War II, more than tripling since 1940 and more than doubling since 1950 on the way to an estimated 5,606,800 in 1997. Over the past several years, Washington's population has risen at more modest annual rates of 1.6 percent to 1.8 percent in contrast to the 2 percent to 3 percent annual rates that characterized the late 1980s and early 1990s, but still is running twice the national average.
- Net migration in Washington has eased as the California economy regains strength and the Oregon economy remains healthy. Washington, however, has still experienced net migration of 50,000 a year for the past half decade, suggesting that the state still has a very positive allure.
- Washington's total nonfarm employment, including each of its major industry divisions (particularly manufacturing), outpaced their national counterparts in terms of annual percent growth over the 1947-97 period, underscoring that the state has been a higher than average job generator in the post-war era.
- Total nonagricultural employment in Washington grew from 659,900 in 1947 to 2,512,000 in 1997, an annual growth rate of 2.7 percent (compared to 2.1 percent nationally).
- Washington's nonfarm employment, on a sector by sector basis, is projected to increase at progressively slower rates from 2000-2020 due to slowdowns in both population and economic growth. All told, it is projected to rise at an annual rate of 1.2 percent from 2000-2020.
- Construction employment in Washington climbed from 38,300 in 1947 to 135,900 in 1997, an annual growth rate of 2.5 percent (compared to 2.1 percent nationally). The drivers were hydroelectric dams, Hanford, Washington Public Power Supply System (WPPSS), and residential and commercial development. It is forecast to grow at a much lower annual rate of 0.8 percent from 2000-2020.
- Manufacturing employment in Washington rose from 173,500 in 1947 to 369,400 in 1997—though it was as high as 371,300 in 1990—for an annual growth rate of 1.5 percent (compared to 0.4 percent nationally). The drivers were transportation equipment (especially aircraft), lumber and wood products, food processing, and machinery and electronics. The sector is projected to climb at a 0.3 percent annual rate from 2000-2020.
- Transportation and public utilities employment in Washington climbed from 67,100 in 1947 to 133,200 in 1997, an annual growth rate of 1.4 percent (compared to 0.9 percent nationally). The drivers were international trade and infrastructure development with the latter tied largely to population. It is expected to grow at an annual rate of 0.9 percent from 2000-2020.

- Wholesale and retail trade employment in Washington rose from 158,300 in 1947 to 607,200 in 1997, an annual growth rate of 2.7 percent (compared to 2.4 percent nationally). The principal driver was population growth, though business cycles periodically slowed the rate of growth. It is projected to continue growing at a 1.3 percent annual rate from 2000-2020.
- Finance, insurance, and real estate employment in Washington increased from 23,500 in 1947 to 128,300 by 1997 for an annual growth rate of 3.4 percent (compared to 2.9 percent nationally). The main driver is population change though business cycles affected the magnitude of change. It is projected to grow at an annual rate of 1.0 percent from 2000-2020
- Services employment in Washington grew from 76,300 in 1947 to 677,000 in 1997, an annual growth rate of 4.4 percent (compared to 4.0 percent nationally). The primary drivers were both population and business growth. This sector is projected to continue expanding at a lesser but still significant 1.8 percent annual rate from 2000-2020.
- Government employment in Washington increased from 119,500 in 1947 to 457,500 by 1997 for an annual growth rate of 2.7 percent (compared to 2.6 percent nationally). The driver was population growth, though cyclical downturns have also broken the upward pattern. It is expected to grow at an annual rate of 1.1 percent from 2000-2020.
- Agricultural employment in Washington was estimated at 90,700 in 1997, little changed from the 87,000 estimate in 1947. Greater acreage has come under cultivation and higher-value crops have progressively replaced lower-value crops over the past 50 years. Employment is dominated by labor intensive commodities, primarily apples, potatoes, nursery products, pears, sweet cherries, hops, grapes, and asparagus. An expanding food processing industry is also affiliated with agriculture.
- Washington's post-war industry composition has been most distinguished by the accelerated shift from goods-producing to services-producing jobs, a trend that has emerged nationally as well. Contrary to public perception, neither trade nor government has seen upward shifts in their employment shares.

A Typical, Yet Uncommon Economy

Viewed broadly, Washington's post-World War II employment trend on average is scarcely distinct from that of the U.S. as a whole. This is no surprise, however, since Washington experiences the same cyclical ups and downs as the nation, though somewhat of a lag. What distinguishes Washington (or any other state for that matter) from the national experience are the circumstances and events that are unique to the region and shared by few, if any, others. Then there is fate; that is, events that are visited upon Washington not because of a comparative advantage, but simply because of chance. Upon closer inspection, the structure of Washington's economy, though broadly similar to that of the nation, is unique in a number of ways.

Not all of America was blessed, for example, with dense and abundant stands of conifers that promoted forest products or surging rivers that generated hydroelectric power for industry and provide water for agriculture or ocean access that promoted fishing and Pacific Rim trade. Nor was all of America blessed with industry stalwarts like Boeing and Microsoft, both realized through the vision of local entrepreneurs, or the similar fortune of a considerable military presence and other federal largesse secured by the congressional clout of a Warren Magnuson, Henry "Scoop" Jackson, or Tom Foley.

It is the very range and complexity of these factors that renders any analysis of Washington's economy challenging. There is little homogeneity; only industry-specific economies that collectively create the impression of a single, uniform state economy. The analytical challenge is in the detail: to include the impacts of disparate events on the collective whole, while also providing the broad perspective needed to preserve the continuity of a statewide analysis.

Construction, manufacturing, and transportation and public utilities are viewed as the primary movers of Washington's nonagricultural sectors, particularly since their employment patterns were influenced by much more than just cyclical and demographic factors. Major federal government initiatives had as much of a hand in generating activity in these industries as the state's natural resource base.

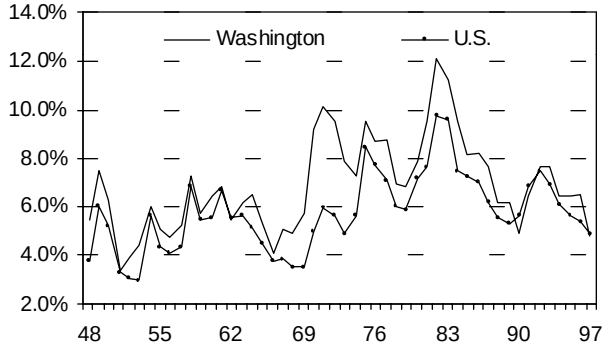
Trade, services, finance-insurance-real estate, and government were the most straightforward of the sectors tracked. All were largely affected on the business side by cyclical factors and on the demographic side by population growth. The pattern of employment change among those sectors was readily explained once those two factors were considered.

Other fluctuations in industry employment can be tied to population, especially net migration—though this, too, was often influenced by the business cycle. Simply put, folks tend to arrive during upturns and pull stakes during downturns. At times, however, net migration simply outstripped the business cycle; for example, some anticipated cyclical employment downturns were offset as coincident economic activity saw people pour into the state seeking work.

Unemployment Rates

Clear evidence of economic fluctuations in Washington emerges when viewing unemployment rates. Washington's unemployment rates clearly move in relative concert with national business cycles, owing whatever small timing differences there may be to a slight lag factor *(see Figure 1)*. The 50-year pattern of jobless rates demonstrates that Washington's economy can be more volatile than that of the nation with that volatility emanating from a combination of cyclical, structural and seasonal factors.

Figure 1
Unemployment Rates
Washington and United States, 1948-1997
Source: *Employment Security Department*



For the present, however, there can be little doubt that Washington as a whole is currently in the midst of a period of strong economic growth as jobless rates are among the lowest in the post-World War II era. In 1997, for example, Washington's unemployment rate stood at 4.8 percent. This is comparable to the jobless rates of less than 5 percent during Washington's economic peaks in the early 1950s, mid-1960s, and 1990.

One phenomenon that has contributed to Washington's low unemployment rate is a growing labor and skill shortage. Demographic (birth dearth or baby bust), economic (new job growth), and human capital (skill shortages) factors have combined to drive this shortage. While considerable, it is not nearly as acute as the labor shortage that gripped Washington in 1941-42 as males exited the labor force in droves to join the war effort and left a severe labor shortage in their wake that was reflected in jobless rates of 2.0 to 2.5 percent.

It should be noted while the overall unemployment rate for Washington is low, there are local areas where low is a relative term. While many of the state's more rural, natural resource or agriculture-dependent areas have seen their jobless rates fall recently, those rates nonetheless are twice the state average. This is not a new development. It has been evident throughout the 50-year observation period, owing particularly to the highly seasonal nature of their economies.

Population and Migration

Population is important to the discussion of employment because it speaks to the issues of current and future labor force availability. Population growth, particularly that fueled by net migration, is heavily connected to Washington's overall economic and employment situation. It becomes, consequently, a recurring theme in industry discussions, especially against the backdrop of significant construction and manufacturing activities. There is some debate as to whether population is driven by economic activity or vice versa. Most economists, however, are inclined to support the premise that population follows jobs.

By any measure, Washington's population has risen significantly since World War II. It has more than tripled since 1940 and more than doubled since 1950 on the way to 5,606,800 by 1997 *(see Figure 2)*. To illustrate the link between population and the economy, Washington recorded its only population decline in the post-World War II period with a 6,000 loss in 1972, including 28,700 net out-migrants, following the Boeing Bust of 1968-71. Over the past several years, Washington's population has been rising at relatively modest annual rates of 1.6 percent to 1.8 percent. This is in sharp contrast to the 2 percent to 3 percent annual rates of growth that characterized the late 1980s and early 1990s. Those rates were driven by a combination of hard-hitting economic recession and population flight in California and strong economic activity in Washington.

Figure 2
Population
Washington State, 1950-1997
Source: *Employment Security Department*

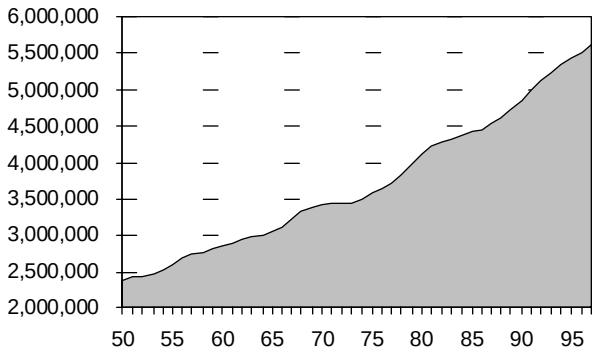
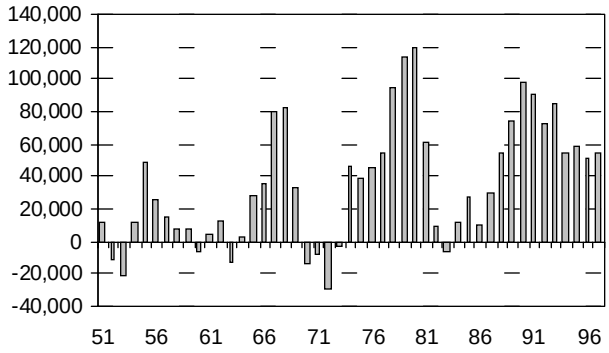


Figure 3
Net In-Migration
Washington State, 1951-1997
Source: *Employment Security Department*



Net in-migration in Washington has eased in recent years, but remains higher than average *(see Figure 3 on the previous page)*; a healthy rebound in California's previously ailing economy, continued economic growth in Oregon, and relative economic stability in Idaho and Montana have all contributed. Yet Washington still experiences relatively healthy net in-migration, which suggests that the economy still holds a strong allure for those outside the state. The past five years, for example, have seen one of the most sustained periods of net positive migration with the numbers coming in at just over 50,000 per year on a regular basis. These levels are expected to start tailing off after the millenium as population growth eases.

Ultimately, though, it is the dynamics within and between industry sectors that provides the most comprehensive picture of post-World War II employment in Washington. What follows is a sector-by-sector analysis of Washington's major industry divisions: construction, manufacturing, trade, transportation and public utilities, finance, insurance and real estate, services, and government.

Total Nonagricultural Employment

Nonagricultural wage and salary worker data from the Employment Security Department show that employment in Washington has nearly quadrupled over the past 50 years from 659,900 in 1947 to 2,512,000 by 1997 *(see Figure 4)*. When depicted as a straight-line average, annual rate of growth over this 50-year period is 2.7 percent (compared to 2.1 percent nationally). The nonfarm employment pattern in Washington was not, however, a straight-line progression. Downturns in the business cycle are clearly visible, especially in the early 1970s and early 1980s. Conversely, economic expansions took center stage in the latter half of the 1960s, 1970s, and 1980s. The overall pattern of growth enabled Washington to raise its share of total U.S. nonfarm employment from 1.5 to 2.1 percent from 1947 to 1997.

Washington's nonfarm employment base is currently in the midst of an expansion that resembles those in the latter half of previous decades. For example, the state's nonfarm employment base posted strong 4 percent growth in 1997. Nonfarm employment is projected to continue expanding through 2020. It is expected to do so, however, at an annual rate of 1.2 percent, which is modest by historic standards, but still higher than the assumed national average *(see Figure 5)*.

Construction

The post-World War II development of Washington's construction industry has been most notably impacted by the development of hydroelectric dams, defense and commercial nuclear facilities, and residential and commercial building. Other projects, however fleeting, also left indelible impressions on Washington's construction sector during their relatively short tenures.

Washington's construction employment did not climb at a constant rate, thanks largely to the influence of the large-scale initiatives cited above. Had it done so,

Figure 4
Nonagricultural Wage & Salary Employment
Washington State, 1947-1997
Source: *Employment Security Department*

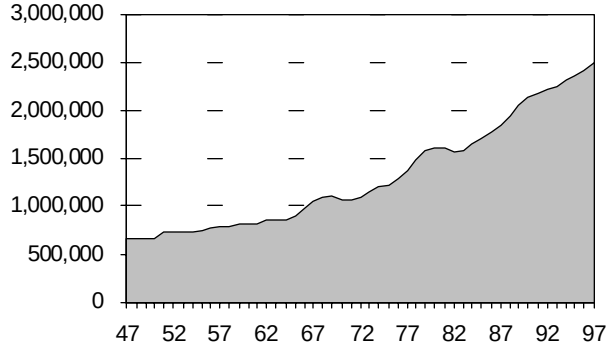
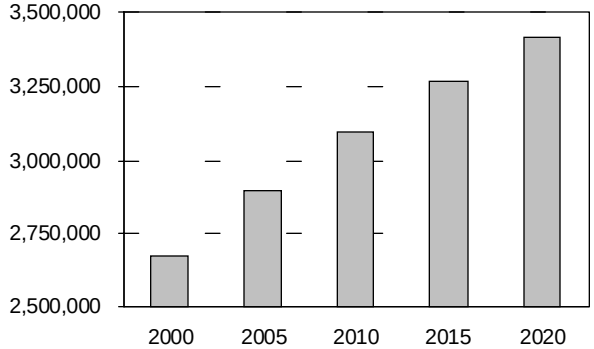


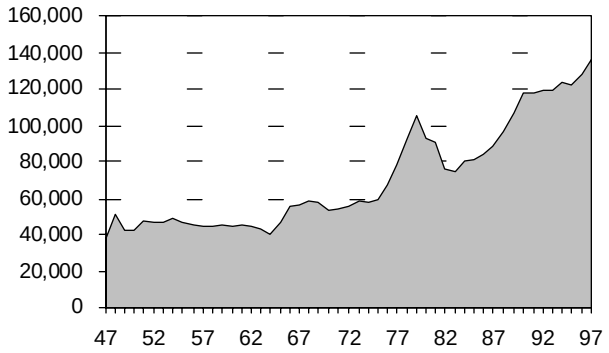
Figure 5
Nonagricultural Wage & Salary Employment Projections
Washington State, 2000-2020
Source: *Employment Security Department*



however, Washington's construction industry would have seen its employment rise at an annual rate of 2.5 percent from 38,300 in 1947 to 135,900 by 1997 *(see Figure 6)*. The major patterns of activity over that period were as follows:

Period	Rate of Change	Major Developments
1947-75	1.6%	Hydroelectric Dams, Hanford Facilities, Highways, Missile Bases, Oil Refineries, Century 21 and Expo 74 World Fairs
1975-79	15.1%	WPPSS Reactors, Trident Submarine Base
1979-83	-8.2%	WPPSS Default and Collapse, Severe Recession
1983-90	6.8%	Puget Sound Related Residential and Commercial Boom
1993-97	3.4%	Residential and Commercial Development, the latter related largely to technology-related construction (Microsoft, Intel, Matsushita, WaferTech, Adobe, Immunex)

Figure 6
Construction Employment
Washington State, 1947-1997
Source: *Employment Security Department*



Hydroelectric Dams

Though this discussion focuses on the post-war period, major dam construction began years earlier during the Great Depression, largely as a means of putting the unemployed masses to work. It did, of course, much more. It harnessed the energy of the Columbia and Snake rivers and secured for Washington an indisputable and historic role in our nation's hydroelectric age.

Though Grand Coulee, the most celebrated of the dams, was completed in 1941, the greatest period of dam construction occurred in the 1950s and 1960s. Thirteen multipurpose dams were constructed and brought on-line over those two decades. They are today part of a 35-dam network extending across Washington, Oregon, Idaho, Montana and British Columbia. The dams are managed by the Bonneville Power Administration (BPA) and form the world's largest hydroelectric system. BPA dams in Washington were completed as follows:

Gorge	1924	Priest Rapid	1959
Rock Island	1933	Rocky Reach	1961
Diablo	1936	Ice Harbor	1961
Bonneville	1938	Mayfield	1963
Grand Coulee	1941	Wanapum	1963
Ross	1952	Wells	1967
Yale	1953	Boundary	1967
McNary	1953	Lower Monumental	1968
Chief Joseph	1955	John Day	1968
Chandler	1956	Mossyrock	1968
The Dalles	1957	Little Goose	1970
Roza	1958	Lower Granite	1975
Swift	1959	North Bonneville	1978

Hanford Nuclear Reservation

This story began during World War II with the U.S. Army scouring the country for a remote, sparsely populated site close to a reliable source of water and energy. They found a site in isolated south central Washington situated at the confluence of the Columbia and Snake rivers in an area with fewer than 300 inhabitants. Moreover, it was close to the energy-generating capacity of the recently completed Grand Coulee Dam. Hanford was born.

Site development and construction began in earnest and a few years later Hanford scientists, under the auspices of the Manhattan Project, produced the plutonium for Fat Man, the atomic bomb dropped on Nagasaki to end World War II. The nuclear age was born, and with it the Cold War nuclear arms race.

In the Cold War atmosphere following the end of World War II, Hanford's mission continued to be that of developing plutonium buttons, the nuclear triggers for hydrogen bombs. To carry out this expanding mission,

the reservation itself had to expand. So in 1947-48, Hanford embarked on its first major post-war expansion. Construction boomed as the facility was expanded along with residential tracts needed to house new workers. Though Hanford was not the only construction impact in the state, it was largely responsible for construction employment rising from 38,300 to 50,300 (31 percent) from 1947-48. Construction employment represented 7.5 percent of Washington's nonagricultural jobs, the highest share recorded in the post-war period.

Construction work would continue on and off through the 1950s and 1960s as Hanford shifted to peace time applications of nuclear energy and additional expansion and renovation projects commenced and wound down repeatedly in the ensuing years. None, however, matched the impact of the 1947-48 project.

Washington Public Power Supply System

The Washington Public Power Supply System (WPPSS) was a response to the increasing long-term energy needs of the state. Using its bond authority, WPPSS proposed to construct four nuclear reactors—two each at Hanford and Satsop. As work got underway in the latter half of the 1970s, Washington's construction employment soared from 60,000 in 1975 to nearly 110,000 in 1979. Construction's share of nonfarm employment also rose from less than 5 percent in 1975 to 6.6 by 1979. The construction gains were mirrored by migration into Washington, much of that reflecting the influx of individuals seeking WPPSS employment.

For numerous reasons, WPPSS found itself behind schedule and incurring cost overruns with only one of its four reactors operational (No. 2 at Hanford). WPPSS defaulted on its obligations, setting into motion the largest bond default in U.S. history. The unfinished reactors were mothballed. Thousands of construction workers were laid off. This, combined with a severe national recession, decimated the industry. From 1979-83, construction employment in Washington plunged by 30,200 (-29 percent).

Residential and Commercial Development

Residential and commercial construction, of course, spans all of Washington's history. This type of construction typically generates employment impacts in the wake of other larger-scale projects, often to accommodate complementary or secondary sectors. Residential and commercial building around Hanford and Boeing facilities or the Seattle and Spokane world expositions are typical examples. But this kind of growth can at times be a driver itself. This was best illustrated during the Puget Sound region's commercial construction boom in the latter half of the 1980s.

During the last half of the 1980s, construction employment rose from a post-recession low of 74,200 in 1983 to 117,700 by 1990—nearly 60 percent. With few notable infrastructure projects underway, most of the growth was attributed to the building boom underway throughout the greater Puget Sound region, especially King County. Fueled by a strong economy and perhaps aided by the modern day "discovery" of the region (e.g., most livable this, that, or the other), residential and commercial development exploded. By the time the boom ran its course, the character of the region had been significantly reshaped.

Construction activity and, by extension, construction employment was essentially flat in the early 1990s thanks to a combination of a slowed local economy, commercial overbuilding, under-capitalization, growth management issues, and a broad national economic downturn. This was largely a central Puget Sound phenomenon as the slowdown in that region was offset by construction activity in other metropolitan areas like the Tri-Cities, Spokane, Yakima, Vancouver, and Bellingham.

Things turned around in 1994 as the post-recession, low interest rate policies of the Federal Reserve and the broad-based national economic expansion provided a foundation upon which to realize regional construction demand that had been pent-up since the turn of the decade. With mortgage rates at near historic lows, housing demand and resulting residential housing starts rose sharply. Additionally, the healthy economy (especially in technology sectors) spurred commercial construction by Microsoft, Boeing, Intel, Matsushita, WaferTech, SEH America, Immunex, Adobe Systems, Quadrant, and others.

Other Major Projects

There were, in addition to the aforementioned initiatives, a number of less extensive but nevertheless high-impact projects. Though of a lesser scale, projects like highways, missile and submarine bases, expositions, and resource-processing facilities (oil and aluminum) had measurable construction impacts during their runs.

Highways—namely the Seattle-Everett-Tacoma stretch of U.S. Interstate 5 and the renovation of U.S. Interstate 90—left their mark on Washington's construction employment from the mid-1950s through the early 1970s. These projects were initiated by the Eisenhower Administration during the Cold War ostensibly to expedite the movement of military equipment and personnel across the country, but they were also endorsed by the auto industry and others with a vested interest in moving people and goods across America. More recently, the I-90 improvements—including the construction of a new parallel bridge as well as replacement of storm-damaged sections of the existing bridge on Lake Washington—helped stabilize construction employment in the wake of the 1991-93 recession.

The Cold War buildup benefited Washington's construction sector during the 1960s as intercontinental ballistic missile (ICBM) sites were built in Washington. Spokane's Fairchild Air Force Base became an Atlas missile site, while Moses Lake's since-decommissioned Larson Air Force Base (now Grant County Airport) became a Titan missile site. Yet another leg of the nation's nuclear triad emerged in Washington with construction of the Trident nuclear submarine base at Bangor in the late 1970s. It is clear that from submarine and missile bases to Hanford, Washington's construction sector received a tremendous boost from the Cold War. Even in the aftermath of the Cold War, military spending spurred construction in Washington as evidenced by the construction of Naval Station Everett, which was activated in 1995.

Washington also hosted two world fairs—Seattle's Century 21 Exposition (1962) and Spokane's Expo '74 (1974). Both resulted in measurable construction activity in the year or two preceding their openings. This activity was not limited solely to event facilities. It also encompassed residential and commercial developments necessary to house and cater to participants and visitors.

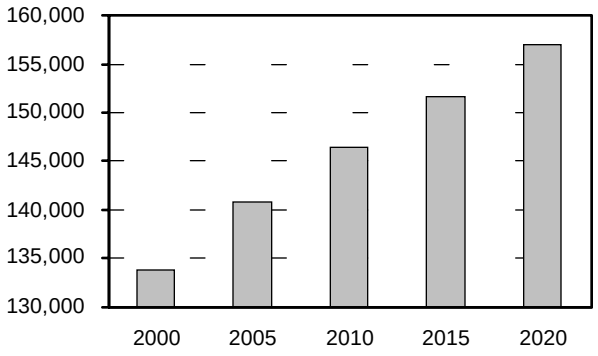
Construction Outlook

Construction employment is projected to grow at a 0.8 percent annual rate from 2000-20, with the sector's annual rate of growth gradually slowing over the period *(see Figure 7)*. Construction employment is expected to be around 158,000 by the end of the forecast period. Though employment will have risen, the sector's annual rate of growth will have fallen well below the 2.5 percent pace over the past 50 years.

Between now and the year 2000, however, a number of high profile construction projects are being actualized, among them construction of the new Seattle Mariners Stadium as well as plans for the construction of a new Seahawks Stadium and demolition of the King County Stadium (Kingdome). This will augment continued construction activity by technology companies and K-12 and higher education.

While the halcyon days of large-scale infrastructure projects might appear to be a thing of the past, there are a considerable number of significant transportation-related projects on the horizon. For example, the Central Puget Sound Regional Transit Authority (or Sound Transit) received voter approval for a 10-year, $3.9 billion plan to build and operate a high-capacity transportation (HCT) system for the King, Pierce and Snohomish region. Key features of the plan requiring

Figure 7
Construction Employment Forecast
Washington State, 2000-2020
Source: *Employment Security Department*



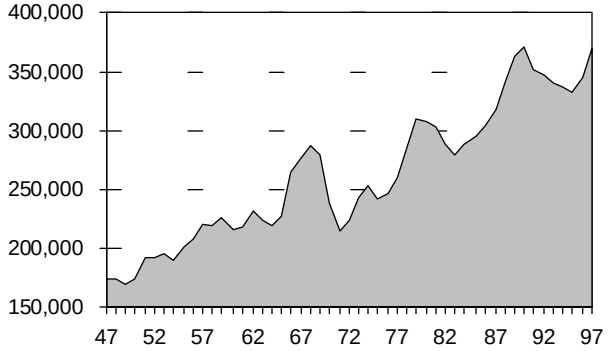
construction are 25 miles of new electric light rail connecting Sea-Tac, Rainier Valley, Downtown Seattle, First Hill, Capitol Hill and the University District; 81 miles of commuter rail connection points along existing railroad tracks between Everett, Seattle, Tacoma and Lakewood; and 100+ miles of HOV lanes and HOV direct access ramps. Furthermore, over the next six years, Washington can expect to receive somewhere in the neighborhood of $500 million from the anticipated federal transportation bill making its way through Congress. And then there is the anticipated construction of a third runway at Seattle-Tacoma International Airport in the not too distant future as well as the longer-term possibility of an entirely new regional airport somewhere in western Washington.

With several species of Chinook salmon having recently been upgraded from threatened to endangered by the federal government, there is talk about demolishing several dams, namely the Elwha, to promote salmon passage. Also, federal dams are going to start to come up before the Federal Energy Regulatory Commission (FERC) for 50-year renewal of their operating licenses. FERC may make renewal incumbent upon the inclusion of costly environmental and conservation efforts. If too cost-prohibitive, the owners may choose to close, give back, or demolish their dams. The City of Wenatchee and County of Chelan (as well as Alcoa) and their Rocky Reach dam are an example of a party facing such a situation. Though still conceptual, if actualized, such projects would be hugely labor-intensive undertakings.

Manufacturing

The post-World War II history of manufacturing in Washington is punctuated by several prominent employment expansions and contractions. These have been tied largely to cyclical and structural changes in its key sub-sectors (e.g., aircraft and parts, lumber and wood products, food and kindred products, paper and allied products, and primary metals). Manufacturing, however, has also been driven by a plethora of events in specific sectors. Consequently, while Washington's manufacturing employment more than doubled from 173,500 in 1947 to 369,400 in 1997 *(see Figure 8)*, the development of manufacturing in Washington is best discussed not as a whole, but as a list of events in those different sectors.

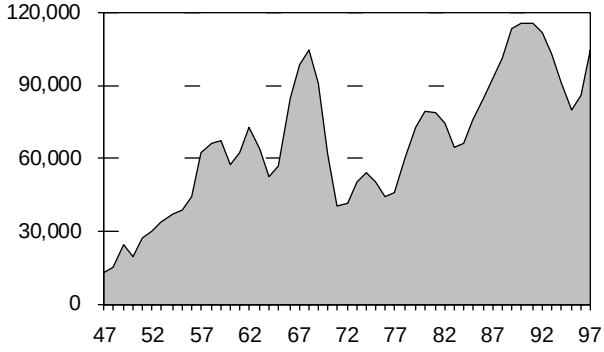
Figure 8
Manufacturing Employment
Washington State, 1947-1997
Source: *Employment Security Department*



Transportation Equipment (SIC 37)

Aircraft and Parts. The emphasis within this sector is, not surprisingly, on aircraft and parts (SIC 372) because The Boeing Company and its subcontractors exercise such a dominant presence over all other players in the sector *(see Figure 9)*. Transportation equipment is a sector whose employment pattern reflects more than the obvious business cycles. War—real and anticipated—was a driver in the sector's early days, while the rise of commercial aviation emerges as a more prominent factor in recent times.

Figure 9
Aircraft and Parts Employment
Washington State, 1947-1997
Source: *Employment Security Department*



Washington's aircraft and parts sector underwent precipitous downsizing from a war-time high of more than 44,000 in 1944 to fewer than 9,000 by 1946. However, employment bounced back to 24,000 by 1949 as commercial orders picked up some of the slack. By 1950, though, the orders had been filled, recession kicked in, and aircraft employment fell to 19,500.

Boeing set upon designing and building the world's first commercial jet, the 707, in the early 1950s. This, combined with Korean War defense contracts, carried aircraft and parts employment up at an annual rate of 15 percent to 39,000 by 1955. That was followed by another buildup from defense, commercial and space contracts, which carried employment forward at an annual rate of 11 percent to 73,300 by 1962. Among the space contracts was one in 1959 for the X-20 Dyna-Soar, which was significant for having introduced the concept of a reusable orbital space vehicle. It was ultimately abandoned in favor of the single-use capsule eventually used for the space race. Ironically, Dyna-Soar's basic design re-emerged in what is now recognized as the space shuttle (a further irony is that Boeing's purchase of Rockwell International makes the space shuttle principally a Boeing product). The aircraft and parts industry was rocked over the next several years, however, by mass cancellations of defense contracts that cut employment at an 11 percent annual rate to 52,600 by 1964.

Boeing introduced the 747 jumbo jet and was lead contractor on the proposed federally funded Super Sonic Transport (SST) project in the latter half of the 1960s and employment soared to record levels. From 1964-68, aircraft and parts employment climbed from 52,600 to 104,500 an annual rate of nearly 19 percent. That, in turn, was followed by record losses as a combination of recession and Vietnam War commitments precipitated government cancellation of the SST project. The infamous Boeing Bust had begun. From 1968-1971, aircraft and parts employment plummeted at an annual rate of 27 percent to 40,500. As noted earlier, this event precipitated the only net population decline recorded in Washington's post-war history (1972).

During the early and mid-1970s, the aircraft and parts sector mounted a modest rebound fueled largely by what at that time was a relatively new factor—foreign or overseas orders. Employment climbed to 54,100 in 1974 before a downturn in the business cycle coupled with oil embargo-related shocks pulled employment back to 45,000 by 1976.

The next business cycle would see aircraft and parts employment rise at an annual rate of 20 percent to 79,600 by 1980 as commercial orders came on strong. The downcycle eventually cut into orders, though, and employment fell at an annual rate of 6.5 percent to 65,000 by 1983. The latter half of the 1980s brought major airline expansion from deregulation, federally-mandated noise and air quality standards, and as air carriers fell into a pattern of "one-ups-man-ship" with regard to aircraft inventories. Orders and backlogs soared to record levels. Employment did the same by rising at an annual rate of 9 percent to a record peak of 116,300 by 1990.

In a classic cyclical pattern, however, the aircraft and parts industry entered yet another period of severe contraction and expansion in the 1990s. As the 1990s unfolded, the rosy picture turned suddenly grim as airlines, especially domestic carriers, were hit by a national economic recession, the Gulf War, and rising fuel prices causing the worst operating losses in history. Aircraft orders were cancelled and/or delayed and aircraft and parts employment in Washington subsequently plummeted to 80,200 by 1995, which translated into a 7.2 percent annual rate of decline over the 5-year period.

As quickly as it had fallen, though, aircraft and parts employment found itself back on the fast track and up to 104,600 by 1997 (14.2 percent annual growth over two years) as the nation's airlines shifted to record earnings and the Asian markets embarked on a major expansion drive. Of course, the current Asian financial crisis and criticism of Boeing's production inefficiencies by the financial markets suggest that the current rapid employment growth will be short-lived. Plans are already being laid for some modest work force reductions in the second half of 1998 and into 1999.

Ship and Boat Building and Repairing. Lest it be forgotten, ship and boat building and repair have also contributed much to Washington's transportation

equipment legacy. Though long a presence in Washington's economy, the sector really came into its own during World War II as Puget Sound Naval Shipyard in Bremerton and Kaiser Shipyard in Vancouver spearheaded the hiring of 140,000 workers to build vessels for use in the Pacific Theater. By the war's end, shipyard employment was half that number.

Shipbuilding activity took off again during the Korean War. However, a real rebirth of the industry in Washington State came during the 1960s as Tacoma Boat, Todd Shipyards, Puget Sound Bridge and Drydock Company (later Lockheed Shipyards), Puget Sound Naval Shipyard, and others built carriers, destroyers and gunboats for the war in Vietnam. On the side, these shipyards also did a fair business in non-military commercial vessels such as ferries, hydrofoils, cutters, seiners and crabbers for the regional use. This boom time would last until the late 1960s.

Through the 1970s, the state's shipbuilding industry would fall into gradual decline. The greatest pain, though, was inflicted during the 1980s as order books dried up and shipyards went bankrupt, among them Lockheed Shipyards. It was clear that the military specification (Mil Spec) expertise that had propelled Washington's shipbuilding and repairing industry during the 1960s had cast them in an increasingly narrow niche by the 1970s and 1980s. The Mil Spec expertise so vital to landing military contracts was of little use in the design and building of non-military commercial vessels which were designed, built and tested under ISO 9000 certification.

Based largely in the Puget Sound region, shipbuilding today is a literal shell of the powerful industry it once was. Over the past several decades, defense cutbacks and foreign competition have forced significant restructuring and layoffs. Puget Sound Naval Shipyard is the biggest shipbuilding and repairing presence in Washington. It is, however, public (federal), not private. Even PSNS finds itself in lean times due to defense budget cuts. PSNS cut 1,300 workers by the end of 1993 as part of Navy-ordered downsizing. PSNS remains one of the Navy's most productive, efficient facilities, but that carries no guarantees in today's budget climate. The best formidable Todd Shipyards can boast is a state contract for three passenger/auto ferries, a far cry from the days when it had order backlogs for military vessels.

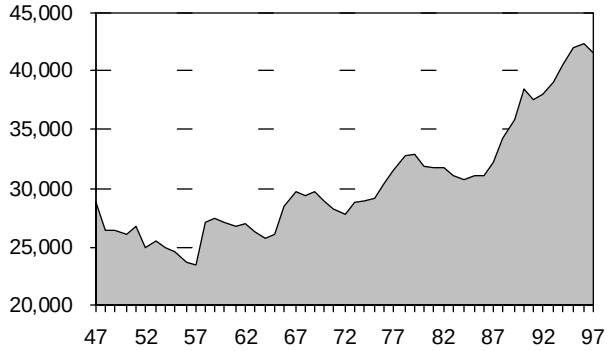
A younger but more vibrant part of Washington's transportation equipment sector is boat building and repairing. This largely western Washington-based industry (though Spokane also has a major presence) saw the writing on the wall and diversified from being almost entirely focused on fishing vessels to the building and repairing of custom yachts, passenger-commuter ferries, gaming and casino boats, and recreational and pleasure boats. Major players like Bayliner Marine Inc., Admiral Marine Works, Dakota Creek Industries, Delta Marine Industries, Nichols Brothers Boat Builders, Tollycraft, and Westport Shipyards have developed something of a national reputation in their respective niche markets.

Motor Vehicles and Equipment. Finally, Washington also boasts a solid presence in the manufacturing of heavy tractor-trailers. The most notable presence being that of PACCAR, Inc., which builds both the Kenworth and Peterbuilt line of heavy trucks. PACCAR, Inc. remains one of the nation's major heavy truck manufacturers with a solid share of the domestic heavy truck market, and is aggressively pursuing expansion of its export markets, especially in Mexico and South America.

Food and Kindred Products (SIC 20)

Washington's food processing industry has demonstrated fairly typical cyclical swings over the past 50 years—though always rebounding to employment levels higher than those prior to the downturns *(see Figure 10 on the next page)*. Food processing employment, in fact, took off at an even higher than average rate in the late 1980s to 38,500 by 1990 before its cyclical downturn. Don't expect it to stay down for long, though. Food processing is one of the fastest growing industries in Washington, with frozen potatoes and apple and grape juices and processed seafood as its major products. Moreover, a growing segment of food processing in this state is in the high-quality specialty food products (e.g., smoked fish and shellfish, roast coffee and coffee products, fruit and cheese packs, candy, etc.). Note: A visible bottoming-out in 1956-57 was caused by severe winter freeze that destroyed that year's crops and, by

Figure 10
Food and Kindred Products Employment
Washington State, 1947-1997
Source: *Employment Security Department*



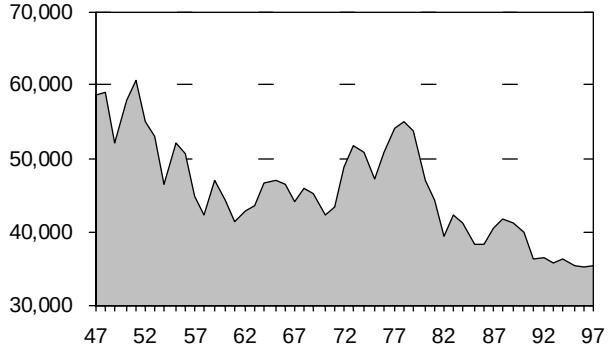
extension, the resource base of Washington's food processing industry.

Lumber and Wood Products (SIC 24)

Washington's lumber and wood products sector is a study in structural change—change that has made it one of the most productive in the world. However, these efficiency gains have in large measure been attained by substituting new equipment and technology for workers, thereby also causing a significant degree of employment loss and worker dislocation over time *(see Figure 11)*.

The 1950s ushered in a period of decline for employment in Washington's lumber and wood products industry. Much of the loss was simply slowing of the post-war construction boom, which saw thousands upon thousands of new homes built for returning GIs and their families. Some of the loss may have also reflected a shift to federal timber after the depletion of private stocks. Over this period, employment fell from a peak of nearly 61,000 in 1951 to 47,000 by 1959.

Figure 11
Lumber and Wood Products Employment
Washington State, 1947-1997
Source: *Employment Security Department*



Washington's lumber and wood products industry weathered a couple more cyclical swings during the 1960s. Employment remained rather constant within the 41,000-47,000 range. With productivity gains fully squeezed out of the labor side, additional profitability would have to come from expanding markets. And in the 1970s, it did.

Employment in Washington's lumber and wood products industry grew again in the 1970s as output expanded. This increasing output was built upon increasing foreign trade. Overseas trade had, of course, been a factor during the 1950s and 1960s, but it was a very small one. In the 1970s, however, overseas sales of wood products rose significantly. From just over 42,000 in 1970, industry employment climbed to just over 55,000 by 1978. The gains would be short-lived.

Structural and cyclical factors combined from the late 1970s through the mid-1980s to trigger heavy employment losses. Even after the recession of the early 1980s, the industry managed no better than 41,700 workers in 1988 before slipping again. As such, the state's lumber and wood products sector never participated fully in the record expansion during the second half of the 1980s.

By that time, though, restructuring was but a peripheral factor. The new dominating factor was timber supply constraints on public lands brought on by a combination of protection measures for the endangered Northern Spotted Owl, wildlife habitat preservation efforts, and legal challenges to logging practices. These developments also increased the competitive pressure from Canadian firms, which were not subject to the same constraints. The adverse impacts from these developments started emerging in 1989, but were punctuated in 1991 as lumber and wood products employment plummeted 9 percent.

Option 9 in the Draft Supplemental Environmental Impact Statement from the Forest Ecosystem Management Assessment Team allowed the sale and harvest of

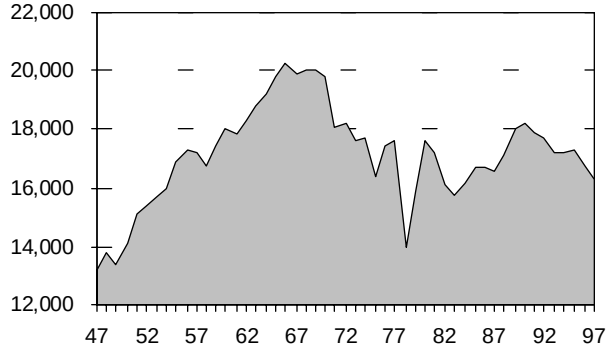
1.2 billion board feet of public and private timber in the nation's coastal region, including 280 million board feet in Washington. To underscore the scope of this ruling, sales from federal forestlands in Washington alone averaged almost 1.4 billion board feet per year in the 30 years prior to 1988. The past several years has seen continued adjustment to timber supply constraints and tightening timber supplies.

Through most of the 1990s under the limits established by Option 9, lumber and wood products employment has stabilized around 35,000-36,000 (employment was at 35,400 in 1997)—its lowest level in 50 years. Lumber production, on the other hand, nearly matched the 1989 high in 1994-95 with 12 percent less employment. It should be noted, however, that there is currently an oversupply of raw logs because of the Asian crisis and the importation of foreign logs.

Paper and Allied Products (SIC 26)

Pulp and paper is a tough call. Its employment pattern over the past 50 years has certainly been affected by business cycles, but perhaps more importantly by shifting consumer preferences *(see Figure 12)*. The 1940s through 1960s were a period of literacy both at home (newspapers) and in the office (forms). The 1970s ushered in the computer age, though, and a shifting emerged. Though the U.S. is by no means a paperless society, the computer, coupled with the dominance of television as the principal medium of communication, helped undercut paper demand for newspapers and business forms.

Figure 12
Paper and Allied Products Employment
Washington State, 1947-1997
Source: *Employment Security Department*



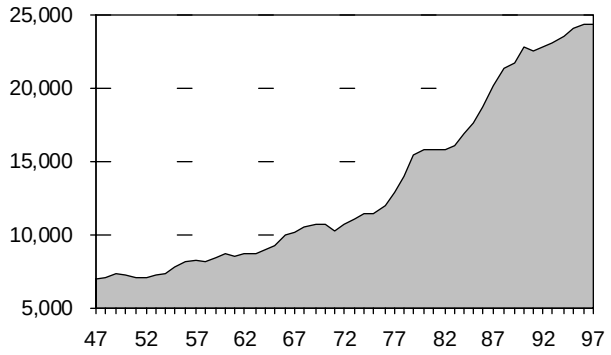
Increased foreign competition also played a role. In the latter half of the 1970s, the industry was hit hard by crippling labor disputes as firms tried to slash employment and wages as a way to become more competitive. The industry resolved those disputes, but competition still ate away at its market share and employment fell. The industry received a respite during the period of economic expansion that took place in the second half of the 1980s as it managed to recapture some of its past glory with employment rising to 18,200 in 1990. The respite, however, was short-lived. As the 1990s unfolded, continued stiff foreign competition, a lower supply of raw materials (wood chips), a glut in international paper markets, and the high costs of compliance with the federal Clean Air Act in an environment of weak demand brought on increased cost pressures and more restructuring. Plant closures began accumulating with three big mills shutting down in 1992, followed by the closure of other big mills in subsequent years. By 1997, pulp and paper employment in Washington was down to 16,300.

Printing and Publishing (SIC 27)

Over time there has been a shift in the printing and publishing industry's emphasis from traditional publishing to more varied commercial printing. This shift has enabled the industry to survive a relatively stagnant, slow-growth post-war period that lasted through the 1970s to the more robust contemporary period *(see Figure 13 on the next page)*. In the early days of the post-war period, newspapers and magazines were the principal conduits of mass communication. Radio was also common, but television was still in its infancy. Newspaper and magazine readership waned over time, though, as television became the communication medium of choice. In fact, even the Seattle Times and Seattle Post-Intelligencer now uses television to advertise.

It was, ironically, a kindred spirit of television—the computer—that revived the printing and publishing industry. Not so much the computer, but the stacks of manuals and other documents needed for its operation. The proliferation of software has also contributed with

Figure 13
Printing and Publishing Products Employment
Washington State, 1947-1997
Source: *Employment Security Department*



its manuals and packaging. Here in Washington, software has had the biggest impact. Microsoft may be the biggest player in the state's prepackaged software industry, but it is by no means the only one. And the number is rising. In this context, it is no surprise to find that printing and publishing will be one of the few manufacturing sectors in Washington expected to post gains through 2020. Also noted, however, should be the move toward built-in Help prompts in contemporary software that presumably minimizes the use of manuals.

Of course, the publishing of books has not disappeared and should not be overlooked. Washington, particularly the Puget Sound region, regards itself as a very literate region populated by life-long readers. This has translated into gradual but steady employment gains over the years in the printing industry as smaller publishers have selectively developed niche markets that churn out limited but successful titles that target specific audiences. This is in contrast to the trend among large publishers who pay huge cash advances to authors and have then found themselves hard pressed to turn a profit on the mass market.

Primary Metals (SIC 33)

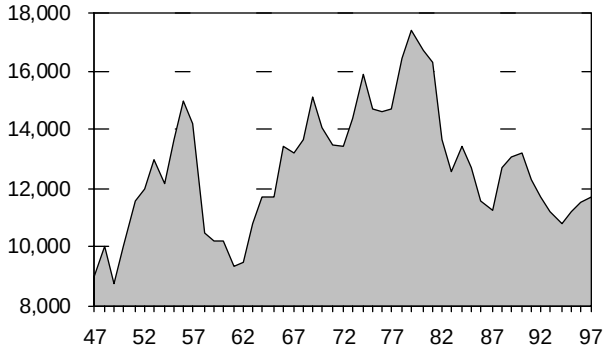
The history of primary metals in Washington is largely driven by aluminum smelting (it accounts for about three-fourths of the industry), with plants currently located in Wenatchee, Longview, Goldendale, Tacoma, Ferndale, Vancouver and Spokane. Washington plants have historically accounted for anywhere from a quarter to a third of the nation's total aluminum output. The downside of the industry is that it is one of the more volatile sectors in the state. Aluminum smelters operate on a narrow profit-loss margin. Swings in the price paid for aluminum ingots coupled with swings in the cost of electricity can heavily influence whether or not plants remain operational.

Business cycles have an impact, of course, but there are other factors. Globally, the sector is impacted by swings in aluminum ingot prices and foreign competition (especially from Australia, South America and Russia). Domestically, the sector is dependent on the ready availability of hydroelectric power for production and on national markets for sales.

Aluminum smelting requires a great amount of electricity to separate the metal from the ore. A reliable source of cheap BPA-produced electricity is the prime reason many aluminum smelters operate in Washington. Indeed, aluminum producers were courted by BPA in the early years of the hydroelectric age so that they could absorb what was then a mass of surplus power. Another reason is Boeing and its subcontractors, who utilize regionally produced aluminum for aircraft and aircraft parts.

With all of this in mind, the rather erratic post-war employment pattern in Washington's primary metals sector is somewhat more understandable *(see Figure 14)*. After the war, primary metals employment fluctuated from 9,000 to 10,000 as the defense machinery

Figure 14
Primary Metals Employment
Washington State, 1947-1997
Source: *Employment Security Department*



eased down and shortages of electricity became more acute. Employment escalated rapidly in the early 1950s to 13,000 as defense orders related to the Korean Conflict picked up. A downturn in the business cycle dented employment in 1954, but was followed up by strong peacetime expansion as high as 15,000 through the mid-1950s. The sector's employment plummeted in the late 1950s and early 1960s through a combination of recession and extremely poor world markets, bottoming out at 9,400 in 1961. A strong primary metals employment buildup took place in the latter half of the 1960s as the completion of more dams and the greater availability of hydroelectric power brought some new smelting plants on-line. Strong commercial aircraft activity also helped generate demand. Employment edged beyond 15,000 in 1969. The Boeing Bust and the national recession that foreshadowed it changed everything. Nationally and locally, aerospace demand for aluminum dried up and primary metals employment dropped to 13,400 in 1972. From there, the industry experienced a series of recessions-expansions with employment hitting a post-war peak of 17,400 in 1979. But there ended the heyday of primary metals. The double-dip recession of the early 1980s, combined with intense foreign competition and poor metals markets, brought about severe restructuring in primary metals. By 1987, employment had declined at a 5 percent annual rate to 11,300. It rebounded modestly during the 1980s expansion to 13,200 but contracted yet again to 10,800 in 1994 as Russia flooded the market with aluminum in its quest for hard currency. The state's primary metals industry has inched up since then to 11,700 in 1997. Today, despite uncertainties over BPA energy supply related to possible deregulation, some Washington producers are talking about expanding production, partly because of the possibility of cheaper electricity and partly because of rosy aluminum industry demand forecasts.

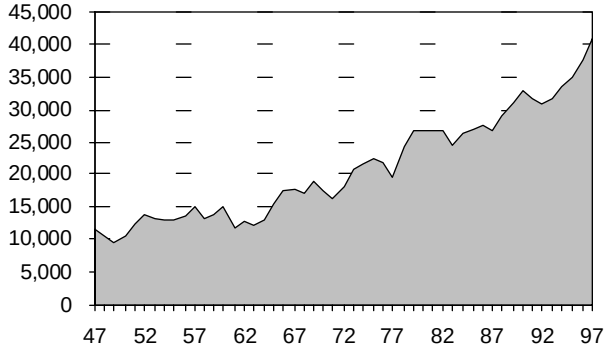
Fabricated Metals and Machinery (SIC 34 and 35)

Employment in Washington's fabricated metal and machinery sector had ranged from roughly 9,000-15,000 during a relatively uneventful period from 1947 to 1964 *(see Figure 15)*. It climbed rapidly beginning in 1965 and continuing through the late 1970s, though, as Puget Sound served as a staging area for the great Alaskan oil pipeline project. Local fabricated metal and machinery firms contracted to produce modules (i.e., ready-to-go oil processing facilities) that were assembled on huge barges and towed to Alaska.

Thanks largely to the pipeline project, metal and machinery employment climbed from 15,500 in 1965 to 26,700 by 1980 for an annual growth rate of 3.7 percent. Severe recession in the early 1980s pulled sector employment down a couple of thousand workers to 24,700. Metal and machinery rebounded over the balance of the decade, however, peaking at 32,900 in 1990 while posting annual growth of 4.2 percent. These gains were propelled largely by computer-related machinery, though the commercial real estate boom and aerospace-related machine shops contributed as well (most of the latter are carried under aircraft and parts). Moreover, these gains have been distributed more evenly across the state, rather than simply around Puget Sound.

Washington's metal and machinery sector contracted by yet another couple thousand workers in the early 1990s to 30,700 as the generally sluggish regional and national economies translated into a commercial real estate slump and severe aerospace retrenchment. Once the economy turned around (particularly aircraft and parts) the metal and machinery sector began climbing steadily to its current employment level of 40,900 in 1997, which translated into robust annual growth of 6 percent.

Figure 15
Fabricated Metals and Machinery Employment
Washington State, 1947-1997
Source: *Employment Security Department*



Note: Electronic and Electrical Equipment (SIC 36) is yet another fast-growing sector in Washington. It was not included in this report as a separate industry because it is a relatively new sector by historical standards and did not present sufficient data for the 50-year retrospective being conducted in this study. In 1997, employment in Washington's electronic and electrical equipment sector was 16,965.

Instruments (SIC 38)

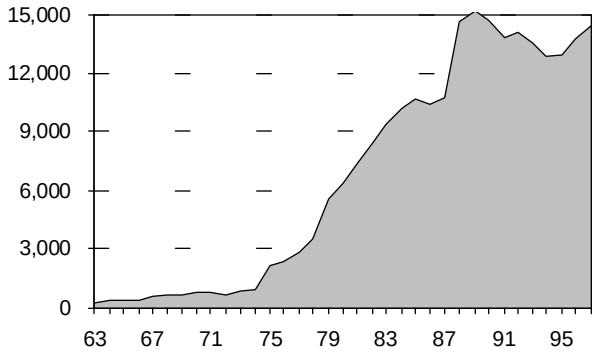
Washington's instruments sector generated tremendous annual employment growth of 11.7 percent from 1963-97, a period during which its employment grew from a mere 330 to 14,400 *(see Figure 16)*. The sector's strong employment growth was accompanied by a correspondingly rising share of manufacturing which expanded from 0.2 to 3.9 percent. Instruments employment is concentrated in engineering and scientific, surgical and medical, electromedical and electrotherapeutic, and aeronautical instruments and devices. This largely reflects the influence of aerospace and medical and biotechnology research.

Instruments began as a rather minor facet of Washington's manufacturing sector. It embarked on a path of steady expansion, though, as aerospace growth began to drive demand for aeronautical, guidance and navigational instruments. From 1963-74, instruments employment rose from roughly 330 to 1,020 for 11 percent annual growth. Still, its manufacturing share sat at less than one-half of one percentage point.

Instruments employment rose more dramatically over the next decade at an annual rate of nearly 24 percent to more than 10,000 by 1985 (the annual rate of growth is a lesser but still substantial 20 percent through 1989 when employment peaked at 15,200). Aerospace was once again a principal driver, but there were a couple of new players—medical and engineering and scientific instruments. These sectors were stimulated by the growth in health care, but also by the rapid rise of medical and biotech research in this region.

Due generally to the cyclical downturn, and perhaps more specifically to aerospace production cuts and deferred big-ticket equipment purchases to hold down health care costs, instrument employment fell to as low as 12,800 in 1994. It has, however, mounted something of a rebound over the past several years with modest, upward gains pushing employment to 14,400 in 1997.

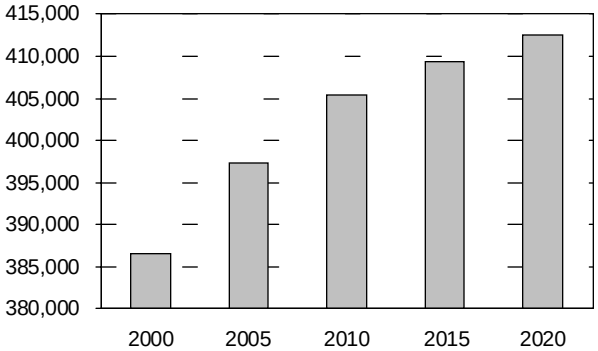
Figure 16
Instruments Employment
Washington State, 1963-1997
Source: *Employment Security Department*



Manufacturing Outlook

The long-range outlook for Washington's manufacturing division is cautious at best. The sector is projecting a 0.3 percent annual rate of employment growth from 2000-20 *(see Figure 17)*. Despite or perhaps because of the anticipated modest rate of growth, manufacturing's share of total nonagricultural employment is expected to shrink another two-and-a-half percentage points from 14.5 percent in 2000 to 12.1 percent by 2020.

Figure 17
Manufacturing Employment Projections
Washington State, 2000-2020
Source: *Employment Security Department*



The sector-by-sector picture in manufacturing is expected to present a mixed bag. Major manufacturing sectors expected to suffer employment losses over the forecast period include aircraft and parts (-14,000), lumber and wood products (-700), paper and allied products (-400), and instruments (-400). Aerospace retrenchment over the next several years is expected to dampen the short-term outlook for Washington's manufacturing sector. That, in addition to continued cost containment pressures in health care and biotech research, is reflected in the pullback in instruments employment as well. Further compounding the shaky manufacturing outlook is a cutback in the state's lumber and wood products sector arising from timber supply constraints, a situation that also affects paper and allied products.

Offsetting the aforementioned losses are expected gains in fabricated metals and machinery (+9,700), electrical and electronic equipment (+9,000), printing and publishing (+3,800), and primary metals (+1,400). Employment growth in fabricated metals and machinery and electrical and electronic equipment will continue to be driven by computer and other technology-based sectors. Printing and publishing will, as noted, also benefit over the long term from technology industries vis-a-vis its role as the commercial printer for the volumes and volumes of user guides and technical manuals for those products. Primary metals, though a notoriously unpredictable sector, is expected to benefit from cheaper energy prices brought about by deregulation as well as anticipated growing demand for aluminum.

Note: The shift to the North American Industrial Classification System (NAICS) in 1999 will significantly boost manufacturing employment in Washington since NAICS defines Prepackaged Software (namely Microsoft) as a manufacturing activity.

Wholesale and Retail Trade

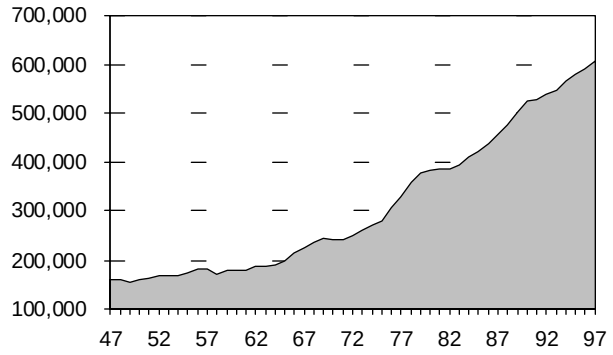
The post-World War II history of Washington's wholesale and retail trade sector is closely tied to the state's population growth and cyclicality. Its post-war history can be captured in four periods—1947-64, 1965-69, 1970-81 and 1982-97—each of which mark relatively distinct patterns in industry employment levels and shifts. These periods cumulatively drove trade employment from 158,300 in 1947 to 607,200 in 1997 for an annual growth rate of 2.7 percent *(see Figure 18)*.

The 17-year period (1947-64) following World War II saw Washington's trade employment start to rise gradually off a higher base. A highlight from this period was Seattle's Century 21 Exposition, which was a boon to the region's trade sector and helped put the city and Washington on the map. Annual trade growth was 1.1 percent over the period with employment ranging from a cyclical low of 155,500 in 1949 to a high of 189,600 in 1964.

Washington provided the first glimpse of its future during the four-year period from 1965-69. Trade employment grew rapidly as commercial orders revived an aerospace industry that had been reeling from cancellation of the Dyna-Soar project. Workers and families also poured into the state as hydroelectric and highway construction projects went full bore. In 1967 and 1968, net migration in Washington was about 80,000. How strong was trade employment growth during this period? It averaged 5.3 percent annually—the greatest sustained rate of growth in that sector to date. Trade employment rose from about 198,900 in 1965 to 245,000 by 1969.

The 1970s got off to a terrible start with the Boeing Bust virtually crippling statewide manufacturing. Add to

Figure 18
Wholesale and Retail Trade Employment
Washington State, 1947-1997
Source: *Employment Security Department*



this a scaling-down of large federally financed infrastructure projects (highways and dams) and a national economic recession and you have a severe downturn. The first half of the 1970s saw net out-migration, troughing in 1972 with a loss of 30,000. Trade employment declined more than 2 percent from 1969-71 before the hemorrhaging ceased.

Commercial aerospace orders rebounded and Washington began to capitalize on international trade. Moreover, population in-migration was reaching record levels (+120,000 in 1980). Buoyed by exports abroad and consumer spending at home, employment in Washington's trade sector built up rapidly. Trade employment hit 388,200 by 1981, significantly higher than the 239,800 posted a decade earlier.

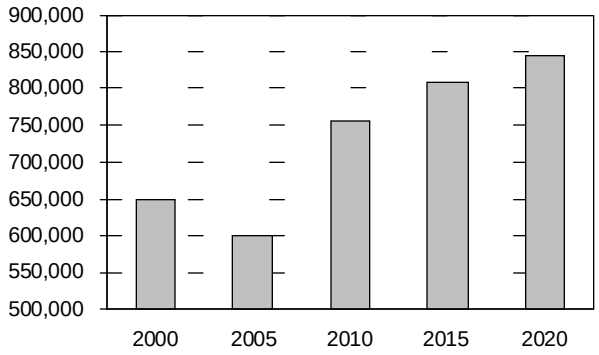
The early 1980s through the present period, like the decade before it, saw a recession-induced employment decline followed by sustained growth. In this case, the decline (388,200 to 385,400 from 1981-82) was relatively small, at least compared to the previous decade. The growth that followed was also less vibrant than that in the previous decade as trade employment rose from 385,400 in 1982 to 607,200 by 1997 for an annual rate of 3.1 percent.

What is different about this current period of trade employment expansion in Washington, however, is that it has been unfettered over the period, remaining relatively unaffected even by the national economic recession in 1990-91. Indeed, that recession transpired as a mere slowdown in Washington. Ultimately, there was still net growth. This all points to the underlying strength of the Washington economy, including trade. Trade growth remains largely a product of international and state consumer activity. The latter continues to be fueled by rising personal income and strong net in-migration, which peaked at just under 100,000 in 1990 and reached at least 50,000 in subsequent years.

Trade Outlook

Washington's trade sector is projected to continue its healthy pace of growth over the next two decades. Trade employment should grow at an annual rate of 1.3 percent from 648,900 in 2000 to 845,200 by 2020 *(see Figure 19)*. This rate, however, is half of the rate

Figure 19
Wholesale and Retail Trade Employment Projections
Washington State, 2000-2020
Source: *Employment Security Department*



over the past 50 years. Nevertheless, since all other sectors are also expected to experience slower growth, trade will maintain its 24 to 25 percent share of total nonfarm employment.

The outlook for Washington's wholesale and retail trade sectors remains solid. For the retail sector, a strong economy coupled with continued net migration means broadening consumer markets. Much of the thrust will be in metropolitan areas beyond Puget Sound where population growth is gaining, but markets are not yet saturated. Retail's outlook is further enhanced by the growing popularity of year-round tourism in Washington.

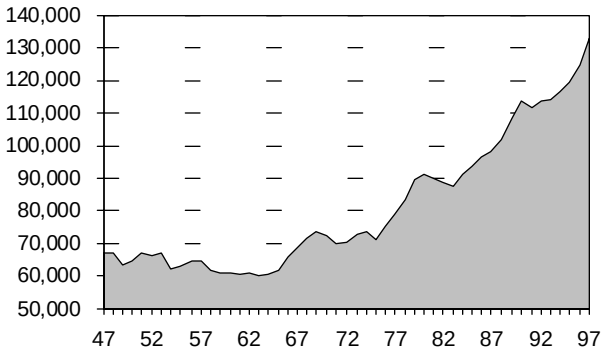
Wholesale trade is buoyed by continued expansion in international trade. Continued growth in Washington's agriculture and food processing sectors will also further wholesale trade. The specter of trade wars, however, looms as a potential downside.

Of further interest are possible hikes in Washington's retail sales tax and gas tax, which, if implemented en masse, could modify the employment outlook for a number of trade sectors. Smaller establishments within trade are also watching carefully the implementation of recently passed state health care reform legislation. The legislation assigns much of the responsibility for health coverage to employers.

Transportation and Public Utilities

The post-World War II history of Washington's transportation and public utilities (TPU) sector is closely linked to the development of a number of large-scale

Figure 20
Transportation and Public Utilities Employment
Washington State, 1947-1997
Source: *Employment Security Department*



infrastructure projects. These projects have combined to push TPU employment from 67,100 in 1947 to 133,200 in 1997, which translates into an annual growth rate of 1.4 percent over the period *(see Figure 20)*. The employment impact of these developments was such that the entire post-war history can be viewed in three distinct stages: (1) pre-infrastructure, (2) post-infrastructure, and (3) trade infrastructure.

Pre-Infrastructure

This was the period from the mid-1940s through the late 1960s during which an array of large-scale, infrastructure systems were put in place: hydroelectric dams, an interstate highway, a natural gas pipeline, a major airport and seaports.

Nonagricultural employment in the TPU sector ranged from 60,000-65,000 during the pre-infrastructure period, a level essentially reflecting a state in the predawn of modern economic development. It began to rise sharply during the late 1960s with the Boeing Boom and as U.S. involvement in Southeast Asia saw Puget Sound transportation sectors ferrying both personnel and supplies across the Pacific.

During this period, the Bonneville Power Administration was overseeing construction of approximately 20 multipurpose dams on both the Columbia and Snake rivers in Washington. There were other hydroelectric projects prior to World War II, namely Bonneville (1938) and Grand Coulee (1941), but nothing to the extent witnessed from 1945-70. These dams represent part of what is today the largest hydroelectric system in the world (one encompassing 35 additional dams in Idaho, Montana, Oregon, and British Columbia).

From the late 1950s through early 1960s, the federal Department of Roads and Highways (predecessor to the Department of Transportation) was busy constructing the Seattle-Everett-Tacoma Highway, which would become part of Interstate 5. At about the same time, a statewide network of natural gas pipelines was also being created.

Owned and operated by the Port of Seattle since 1947, the Seattle-Tacoma International Airport embarked on an ambitious expansion program: one in the mid-1950s to mid-1960s which expanded concourses, the other from the late 1960s through the mid-1970s which created a second runway and a new main terminal, satellite terminals, and airport-highway link.

The ports of Seattle, Tacoma and Everett, not to mention inland ports on the Columbia-Snake waterway, all existed in some form for decades. More modern developments and improvements, however, were made during the late 1960s and 1970s as Asia emerged as a major trade bloc. It was then that the Port of Seattle embarked on an innovative plan for containerized cargo handling that pushed it to the forefront.

With so much activity, why call the period pre-infrastructure? The term is, admittedly, something of a misnomer since most of the projects were constructed and became operational during the period and not after. The term is used because most of the systems, while operational, had yet to generate much employment impact in Washington's TPU sector (the impact being primarily construction-related).

Post-Infrastructure

This refers to the 10-15 year period from 1970 through the early 1980s during which major infrastructure was brought on line. This signaled the rapid proliferation of the transportation, communication, and utility sectors necessary to manage the electric and water resources from the dams and the rise of those who took advantage of the economic opportunities made possible by power and water.

These factors combined to accelerate employment growth in Washington's TPU sector from around 70,000 entering the 1970s to more than 90,000 by 1980. Recessions in the early and mid-1970s stalled employment growth temporarily, but could not long suppress the overriding upward pressure. The result was an employment gain of nearly 40 percent over the period.

By this time, BPA's hydroelectric system was nearly complete (except for Lower Monumental and North Bonneville, which were finished in the late 1970s). Hydroelectric plant employment was rather limited, but gains were strong in secondary sectors—public and private utility districts, irrigation districts, flood control districts, tugboats and barges, dredging, fish hatcheries, and air travel. Hydropower also promoted telecommunications in Washington by providing the energy needed to service vast geographic areas.

Worthy of special note because of their vital importance to Washington's water transportation sector—not to mention wheat and other grain producers in southeast Washington and southwest Idaho who are its primary users—are the series of locks constructed during the 1970s that enable cargo to move via the Columbia-Snake waterway as far inland as Lewiston, Idaho. Extending 465 miles, the Columbia-Snake system is the furthest inland waterway in the U.S. (which makes the Port of Lewiston the furthest inland port in the U.S.). Before the locks were built, the waterway was navigable only as far as the Tri-Cities.

Even greater impacts emerged in the wake of highway, airport and seaport development—namely in transportation. Trucking and warehousing boomed as the new Interstate 5 tied together Puget Sound's largest urban areas and stimulated regional growth along the corridor. Coupled with the Interstate 90 improvements (though this project was less pronounced and extended over a longer period), interstate trucking and warehousing grew rapidly. Population gains during the period also contributed to the gains.

Airports and seaports undertook major expansions beginning in the late 1960s and running through 1970s as Pacific Rim trade, gave the first real glimpses of its contemporary importance to the state's economy. Most of the activity revolved around the Puget Sound region with the major players being the Seattle-Tacoma International Airport, Port of Seattle, and Port of Tacoma. The pace of expansion and employment was accelerated by American involvement in Southeast Asia. Both took employment hits when the U.S. began a phased withdrawal from Southeast Asia in the early 1970s.

Trade Infrastructure

This refers to the 10-year period from the early 1980s through the present in which Washington's TPU sector, though first hobbled by a severe national recession, emerged from the experience and embarked on yet another period of significant employment growth. This period marked Washington's emergence as a formidable trade state. What was new? Had not Washington engaged in interstate and overseas trade for nearly a century? Yes. But major infrastructures were finally in place. Washington's seaports and airports were models of organization and efficiency. And the state's highway system was thoroughly modern, thus extending its intermodal transport capabilities beyond just rail.

The expansions of the previous decade proved to be worthy investments as Pacific Rim trade—largely exported aircraft and parts and forest and agricultural products and imported containerized goods—spurred growth in transportation sectors. The latter half of the 1980s, for example, saw container traffic grow by leaps and bounds. In addition to fueling growth at the ports, containers were a boon to both trucking and warehousing.

Strong population growth, meanwhile, fueled expansion of the state's communication and utilities sectors. But make no mistake, rapid population growth was made possible, in large measure, by the state's vibrant economy—an economy in which one in six jobs was tied either directly or indirectly to international trade. During this period, employment rose from around 90,000 at the start of the 1980s to more than 113,000 by 1990—an increase of better than 25 percent. TPU employment suffered a short-lived setback in 1991 as a global economic slowdown adversely affected Washington and its largest Asian trading partners. Though TPU employment fell to 111,900 in 1991, an exceptionally strong rebound in both the national and Asian econo-

mies set employment surging upward at an annual rate of 3 percent to 133,200 in 1997.

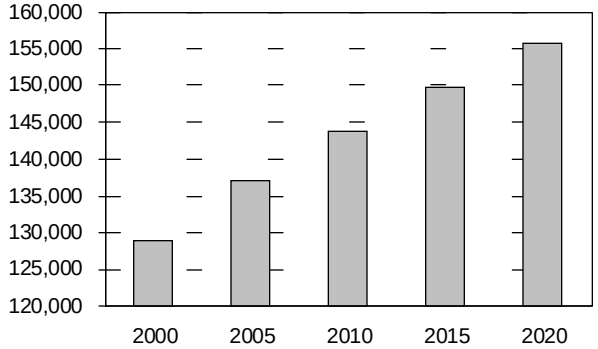
At the outset of 1998, there emerged a couple of serious issues with which Washington's international trade-based industries had to contend. First was the upheaval in Asian financial markets, which prompted a currency crisis that jeopardized the U.S. export situation. Inasmuch as a significant share of U.S. exports flow through Washington ports, there is good reason to be concerned. Furthermore, there has been a notable decline in container activity at Puget Sound ports due to shipping line decisions to route more containers through the ports of Los Angeles-Long Beach and Vancouver, BC. A number of factors, including shipping time to major inland markets, have been cited as reasons for this shift.

TPU Outlook

The long-range employment outlook for transportation and public utilities in Washington is best characterized as modest. The sector is projected to expand at an annual rate of 0.9 percent from 2000-20 with the pace of growth slowing over the period. Employment is expected to rise at a gradual pace to nearly 156,000 by 2020, though its share of total nonfarm employment will slip to 4.6 percent *(see Figure 21)*.

Growth in Washington's communications and utilities sector is largely tied to population growth while growth in its transportation sector is largely tied to economic gains. That both population and economic growth are forecast to slow from 2000-20 partly explains the modest TPU forecast. However, another key to modest employment growth in an otherwise vibrant industry are the technological advances in telecommunications, trucking, shipping and air transportation that have made it possible for these sectors to increase productivity without a corresponding increase in employment. Telecommunications and trucking deregulation are the most notable moves to date with electricity deregulation the current focus.

Figure 21
Transportation and Public Utilities Employment Projections
Washington State, 2000-2020
Source: *Employment Security Department*



The outlook for the transportation component of Washington's TPU sector appears, at first glance, to be favorable in light of continued modernization of container capacity and container-handling capability at Puget Sound ports. However, two items to watch closely are transportation taxes and infrastructure needs and their potential impact on competitiveness. Western Washington ports may be closer to Asia than other West Coast ports, but they are farther from the country's major consumer markets. Therefore, increased costs, whether through taxes or shipping delays, can adversely impact the competitiveness of Washington ports. And in the port industry, advantages and disadvantages are quickly exploited. Washington ports are currently being out-positioned by the Port of Vancouver, BC and the Port of Los Angeles-Long Beach, CA where infrastructure improvements have cut down on delays with which Washington ports must still contend.

Also watched is a proposal to eliminate federal waterway subsidies used to keep secondary waterways navigable. This is an issue to bargers and other firms that use the Columbia-Snake River System to ship grains and other commodities to coastal ports since the Snake may be considered a secondary waterway. Eliminate the subsidy and bargers say they will be forced to pass on costs and, therefore, their competitiveness. Others, though, feel bargers can absorb the cost without surrendering an edge.

Finance, Insurance and Real Estate

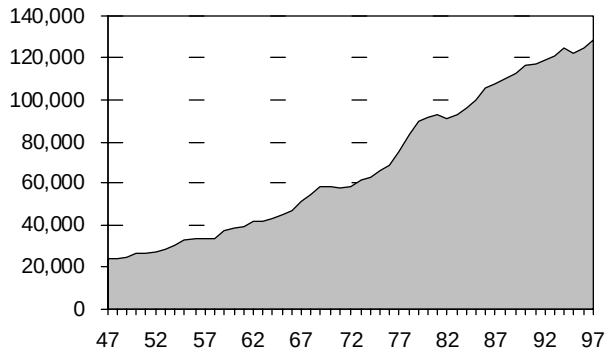
Finance, insurance and real estate (FIRE) is one of the more predictable sectors in Washington. Activity in this sector is, as elsewhere, tied predominantly to

business cycles (most notably within the interest rate-sensitive finance and real estate sectors) but that activity tends to be even more pronounced when economic growth and population migration are factored in. From 1947-97, this sector saw its employment climb more than five-fold from 23,500 to 128,300, which represents an annual growth rate of 3.4 percent *(see Figure 22)*.

Strong economic growth and net population migration, for example, translate into commercial and residential activity in the finance, insurance, and real estate sector. As the economy shifts into gear, business startup and expansion activity heats up and generates commercial-based finance, insurance, and real estate activity. Those business activities also generate jobs, which put locals to work and draw new residents (in-migrants). Those jobs create personal income growth, which fuels home buying and housing starts. This creates additional finance and real estate activity; the former because developers and homebuyers both need loans, the latter because new and existing homes tend to move when personal income growth is strong. The employed are also consumers of goods and services, which fuels additional commercial development and further boosts finance and real estate. The insurance sector benefits as developers, homebuyers, and businesses require underwriting.

The 1947-58 period saw FIRE employment climb at a 3.5 percent annualized rate from 23,500 to 34,300. Employment growth was quite slow during the early 1950s as the Korean Conflict ended and a national economic recession ensued. This resulted in employment contraction and modest population out-migration. Employment picked up in the mid-1950s as work at Hanford and on hydroelectric projects added jobs.

Figure 22
Finance, Insurance, and Real Estate Employment
Washington State, 1947-1997
Source: *Employment Security Department*



The 1959-69 period was a healthy one for FIRE. Washington welcomed more new residents attracted by a growing economy and the promise of work on highways, missile bases, Century 21 Exposition, and more hydroelectric projects. Net migration, which ran positive and negative in the early 1960s, moved strongly positive in the latter half of the decade. The result was 4.4 percent annual growth for the period. FIRE employment rose from roughly 38,000 to 58,000.

The 1970-71 period arrived on the heels of the Boeing Bust (as well as a downturn in the business cycle). The direct and indirect Boeing fallout—which included four consecutive years of net population out-migration (a combined -44,200)—stalled FIRE employment at between 58,000-59,000 with annual growth only 0.3 percent.

By 1973, however, Boeing was on the rebound, the state economy strengthened, and net migration started to pick up. Migration truly exploded, however, as the economy expanded and the WPPSS projects got underway in the late 1970s. FIRE employment grew likewise, posting a 5.2 percent annualized rate of growth from 1973-81—strong enough to climb unfazed through a recession in the mid-1970s. In the end, FIRE managed 4.2 percent annual growth over the decade, and had risen to approximately 92,000.

A combination of the WPPSS collapse and severe recession staggered FIRE in the early 1980s. However, as a recovery took hold and a record expansion kicked in, FIRE climbed at a 3.2 percent annual clip from 90,700 in 1982 to 116,400 by 1990.

In the early 1990s, several factors combined to dampen the FIRE employment situation, including overbuilt residential and commercial real estate, bank mergers and restructuring, and a general sluggishness in the regional economy. During that period, only insurance managed to hold its own. The result was modest annual growth of 1.6 percent in the first half of the 1990s.

The past several years have witnessed a healthy turnaround in the FIRE sector. The finance component saw growth in smaller community banks and credit unions, and efficiencies in the larger institutions. Real estate has picked up nicely over the past several years thanks to an especially vibrant central Puget Sound economy anchored by aerospace and technology and further complemented by historically low interest rates. Insurance has piggybacked off the same vibrant economy and home buying, and was further bolstered by the siting of State Farm Insurance's regional processing center in Du Pont in the fall of 1995. All told, FIRE employment had climbed at a 2.7 percent annual rate from 121,600 in 1995 to 128,300 by 1997.

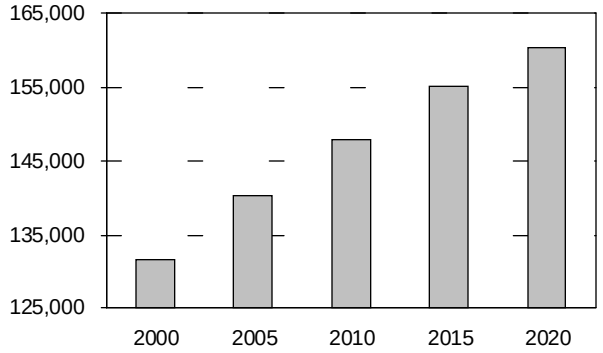
Between 1947-97, the sector gradually improved its share of Washington's nonagricultural employment base from just over 3.5 percent to nearly 6 percent by the mid-1980s. Since then, however, FIRE's share of total nonfarm employment has dipped to roughly 5 percent in 1997. Though sector employment has increased, its rate of increase has been outpaced by other sectors, thus resulting in a declining share.

FIRE Outlook

Washington's finance, insurance, and real estate industry, already quite similar to TPU in terms of employment, also shares a similar employment outlook. Like TPU, FIRE is projecting an annualized growth rate of 1.0 percent over the forecast period, which should lift FIRE employment from 131,600 in 2000 to 160,200 by 2020. FIRE, too, should see its share of total nonfarm employment slip a half a percentage point from its current share of 5.1 percent to 4.7 percent by 2020 *(see Figure 23)*.

There will be continued demand for FIRE services. However, continued technological advances (e.g., electronic banking) will offset the employment side of that demand. During the forecast period, finance will continue to restructure through mergers and acquisitions. Competition in the banking industry is fierce and there will almost certainly be further attrition as undercapitalized players realize they either cannot operate under tighter, more stringent federal regulations or can do so only by merging with or acquiring other institutions.

Figure 23
Finance, Insurance, and Real Estate Employment Projections
Washington State, 2000-2020
Source: *Employment Security Department*

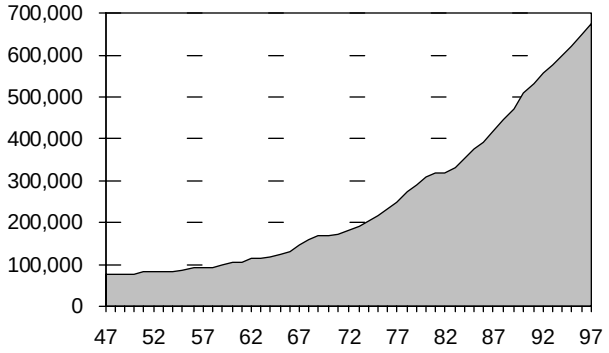


What with all the uncertainty over what health care reform will mean and how it will look, the insurance industry remains a real wild card. Any package mandating employer-sponsored health care coverage (i.e., "pay or play") would appear to favor the insurance sector. Of course, managed care options like Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs), which have direct employer-provider frameworks, could push insurance firms out of the picture. Options designating the state or federal government as sole provider of health care (i.e., single payer) do not appear viable and that is another option that would have adverse impacts on the insurance industry.

Services

Of Washington's broader nonagricultural sectors, services has shown the strongest and most consistent employment growth from 1947-97. Over that period, it grew by nearly a factor of nine from 76,300 to 677,000, which represents an annual growth rate of 4.4 percent, the highest among Washington's industry sectors over the 50-year period *(see Figure 24 on the next page)*. Services employment climbed steadily from 76,300 in 1947 to 554,100 in 1992, the one exception coming in 1981-82 when the sector contracted 0.4 percent. This translates into annual growth of 4.5 percent over a 45-year period. More impressively, Washington's service industry doubled its share of total nonagricultural employment from 11 to 12 percent in the immediate postwar years to 25 percent by the 1990s.

Figure 24
Services Employment
Washington State, 1947-1997
Source: *Employment Security Department*



Though employment change in Washington's services sector was, with that one exception, positive, the growth rates varied over time. The 1947-64 period saw Washington in an economic and demographic prediscovery stage with more ties and resemblance to Washington's past than its future. Annual growth in services employment during this stage was 2.5 percent. A relatively modest rate of growth translated into modest share gain from 11.5 percent to 13 percent.

With infrastructures and other amenities in place, Washington's economy began assuming some of its modern-day characteristics. Employment boomed and net population migration rose as high as 80,000 in the late 1960s. Annualized growth reflected this mini-boom as services employment rose 6.4 percent from 1965-69. The result was a gain in share from 13 percent to 15 percent. In this 5-year period alone, the gain in share was greater than in the previous 20 years.

The Boeing Bust and national recession that followed tempered gains in Washington's services sector, but not much. The sector rebounded well, as economic recovery was coupled with strong net population migration (as high as 120,000 at the turn of the decade). From 1970 to 1981, sector employment rose from 169,700 to 318,200, which meant annual growth of 5.9 percent. This healthy growth saw the sector's share rise from 16 percent to 19 percent.

The severe national recession in the early 1980s, as noted, caused the one and only employment contraction in Washington's services sector in this 50-year period. But the sector rebounded quickly. From 1982-97, services employment climbed at an annual rate of 5.2 percent from 316,900 to 677,000. This was somewhat less than the rate of growth the previous decade, but very strong nonetheless. During this period, the industry's share of total nonfarm employment climbed from 20 percent to 27 percent. The strength of the state's services sector can be discerned from the fact that it has generated about half of all net new nonfarm jobs in the state since 1990.

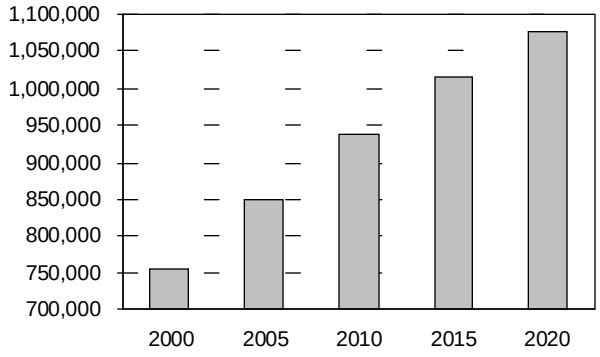
The steady rise of service employment in Washington is attributable to many different components within the broader industry. The standout, however, has been business services. Business services growth has been fueled by healthy expansion in virtually all of the state's employment sectors. That growth has been accompanied by the increasingly common practice of outsourcing work not directly tied to the good or service. Additionally, the state's economic expansion has precipitated a relatively broad-based labor and skill shortage that has forced greater use of temporary help personnel. Finally, no assessment of the state's services sector would be complete without mentioning the rapid growth in prepackage software development, led by Microsoft, which is also counted under business services.

Gains in health services have been major drivers of services employment growth in Washington due to strong population growth and the aging of the baby boom generation. More recently, though, lower reimbursements to health care providers has forced cost cutting pressures which are holding the line on employment despite rising demand for health care services.

Services Outlook

Services is projected to be the fastest growing sector in Washington with an annual growth rate of 1.8 percent (compared to 1.2 percent rate for total nonfarm employment) from 2000-20 though it, too, will see its growth rate slow progressively through the forecast period as population and economic growth slow. Services employment is expected to surpass the vaunted one million threshold during the course of the forecast period, reaching 1,076,700 by 2020 *(see Figure 25)*.

Figure 25
Services Employment Projections
Washington State, 2000-2020
Source: *Employment Security Department*



During this time, the sector's share of nonfarm employment will climb from just over a quarter (27 percent) to nearly a third (31.5 percent).

Services employment growth will be driven by what are known as producer services. Producer services are essentially those that add value to goods or services that originate within another business. A firm would be providing a producer service if, for example, it marketed another firm's product or executed a legal or sales contract for another firm or did the accounting for another firm or developed software for another firm. Producer services are largely tied to the business, legal, accounting, engineering, and management components of the economy.

Business services specifically will continue to be fast growing, thanks in part to the ability of at least one Washington company, Microsoft, to make computer software a part of our daily personal and working lives. Moreover, Microsoft, while the largest, is only one of the myriad Washington firms engaged in the fast-growing software industry. There are currently more than 450 Washington firms engaged in the development of prepackaged software. Other more traditional business services are also expected to grow through the turn of the millenium by using similar producer service formulas. The increasing use of and reliance on temporary help workers will also fuel growth in business services. Similar outsourcing of tasks such as security, cleaning, maintenance, equipment leasing, and accounting will further bolster this sector.

Engineering services could mount solid growth in biotechnology research. It should be noted, however, that this is the research component of biotech. Other aspects are found in manufacturing under pharmaceuticals or in trade under wholesaling.

Since the population of baby boomers is also rapidly maturing, demand for health services is expected to take center stage. However, while past employment growth in this sector had generally been tied to increased patient demand, future growth is expected to be moderated by increased cost pressures brought to bear by lower reimbursements to health care providers from third party payers (e.g., Medicare/Medicaid and private insurers).

Tourism and travel will continue to help promote other Washington service sectors such as hotels and lodging and amusement and recreation, not to mention certain aspects of eating and drinking places (which is actually in retail trade). Its impact is enhanced by the extension of Washington's tourism sector from a summer orientation to a year-round destination.

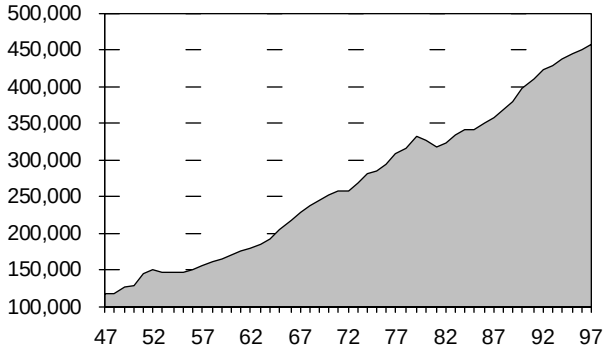
Government

Federal employment in Washington is dominated by the military (bases, test facilities, a shipyard, and hospitals), land and natural resources management (parks, forests, wilderness areas, mines), postal service, and Region X general administration. Major military installations in Washington are as follows:

Puget Sound Naval Shipyard	Kitsap	1891
Naval Undersea Warfare Engineering Station	Kitsap	1914
Fort Lewis Army Base	Pierce	1917
McChord Air Force Base	Pierce	1938
Fairchild Air Force Base	Spokane	1942
Naval Air Station Whidbey Island	Island	1942
Naval Submarine Base Bangor	Kitsap	1977
Naval Station Everett	Snohomish	1995

Federal employment currently constitutes 20 percent of public sector employment. This multi-layered sector saw its combined employment rise at an annual rate of 2.7 percent (same as the state as a whole) from 119,500 in 1947 to 457,500 in 1997 *(see Figure 26 on the next page)*.

Figure 26
Government Employment
Washington State, 1947-1997
Source: *Employment Security Department*



State government employment in Washington is most concentrated in public colleges and universities, correctional facilities, hospitals and similar facilities, land management, transportation, and social services. It represents 25 percent of public sector employment.

Local government employment in Washington is dedicated largely to K-12 public schools (though funded by the state), public transportation, hospitals, police, fire, sanitary sewage, and utilities. It currently comprises 55 percent of public sector employment.

Like a number of other Washington industries, government has demonstrated a fairly consistent cyclically influenced pattern from 1947-97. There was steady growth punctuated by a period of flatness in the early 1970s, and absolute losses in the mid-1950s and early 1980s. This is no real surprise; as the state's population grew, so too did the demand for government services—particularly at the local and state levels. Over the years, state and local government have pooled a larger and larger share of total government employment, from roughly 65 percent in the 1950s to approximately 80 percent in the 1990s at the expense of the federal share.

Government or public sector employment in Washington had annual growth of 2.7 percent from 1947-97, a rate equivalent to that of the total nonfarm economy. In the last five years, however, the pattern of growth in government payrolls has diverged from that of the state's economy as a whole. Over those last five years, public sector employment has grown at rates of roughly 1.5 percent compared to 2 percent or more for the overall state economy. For example, employment statewide grew roughly 4 percent in 1996 and 1997 compared to only 1.5 percent in the public sector. This is a trend that is likely to continue regardless of overall economic conditions given general public's sentiment regarding public spending.

Government Outlook

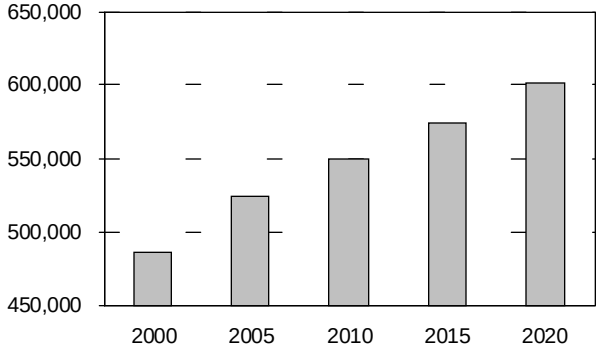
Public sector employment in Washington is projected to rise at an annualized rate of 1.1 percent over the forecast period, a bit shy of the pace of overall nonagricultural employment growth. This should translate into employment growth from 486,600 in 2000 to 601,900 by 2020. The sector's share of nonagricultural employment, meanwhile, should decline from the current 18.2 percent to 17.6 percent by 2020 *(see Figure 27)*.

The outlook for public sector employment in Washington cannot be viewed homogeneously. The federal, state, and local government sectors are each influenced by a particular set of variables; some shared, but most not. They must, therefore, be examined separately. There appears, however, at least one common theme throughout—calls for spending restraint.

Federal

In response to the general mood of the country being that government is too big and government spending is too high, the federal government has been consolidating

Figure 27
Government Employment Projections
Washington State, 2000-2020
Source: *Employment Security Department*



regional offices and facilities, including those related to the armed forces. As such, the only two federal activities expected to see increases in line with population growth are the postal service and federal parks. With respect to the military presence, Washington initially was a net beneficiary with the state emerging as one of two regions (the other being southern California), the military chose to concentrate West Coast operations. This situation may or may not last; there remains considerable pressure to continue downsizing the military. While it is possible that Washington will continue to gain military personnel who are transferred from other regions of the country, those gains are likely to be offset by declines in other federal employment throughout the state. If it holds, the balanced budget agreement struck by President Clinton and Congress will more or less ensure that federal spending remains relatively in check.

State

Growth in state government payrolls will be constrained by a couple of important factors. First is the passage of Initiative 601 in 1993 which ties state government spending to changes in population, personal income growth, and inflation. To date, state population has grown modestly and is expected to slow over the course of the forecast period. Also, inflation has been kept in check and is expected to increase only gradually. Second is the general public sentiment that government is too big, one that will keep continued pressure on state officials to slow the growth in state government employment into the future. Inasmuch as higher education is largely the responsibility of state government, it remains to be seen whether or not the increasing demand for access to public higher education over the forecast period (as the Baby Boomlet reaches college age) will translate into employment growth. If there is to be growth, it is likely to emerge in this facet of state government.

Local

Continued population growth is also having an impact on city and county governments. Steady and rapid population growth has precipitated incorporation, thus creating entirely new governmental bodies. Even where there is no incorporation, population growth still demands higher levels of municipal services. K-12 education, police, fire, and public works are among the basic services. It is difficult to fully assess the employment outlook because local governments, like the state, are caught between countervailing pressures over how much taxing authority to exercise in an atmosphere of rising demand on one hand and spending restraint on the other. Some of the current pressure caused by K-12 enrollment will ease over the forecast period, though, as growth in the primary and secondary education population slows.

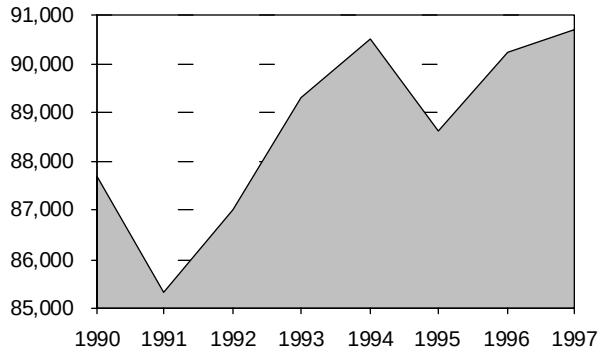
Agriculture

Empirical evidence clearly suggests that agriculture is a major employment sector in Washington. The history of agriculture in the state dates back to the earliest periods of settlement. Like logging and fishing, agriculture was one of the state's nascent industries. However, even in the increasingly urban, industrialized society that emerged following World War II, a very significant agricultural presence continued to build in Washington. Today, the central and eastern parts of Washington are associated with agriculture and related activities. Western Washington also has agricultural activity, though it is dwarfed by nonagricultural employment and continues to shrink in the face of encroaching residential and commercial development.

UI tax-based time series data for agricultural employment in Washington are available only from 1990-97. The data show that the state's agricultural employment has ranged from 81,000 to 91,000 over the period on an annual basis *(see Figure 28 on the next page)*. The employment trend over this period has generally been up, though it was noticeably interrupted in 1995 by unfavorable weather conditions that adversely impacted the state's apple crop, whose low yields subsequently undercut the need for labor.

In 1997, annual employment in Washington's agriculture sector was estimated at 90,700, though typical seasonal swings caused employment to range widely from a low of 56,500 in January to a high of 126,900 in July. Employment in the state's agriculture sector is concentrated in the planting, cultivation and harvesting of labor intensive commodities, primarily (in

Figure 28
Agricultural Employment
Washington State, 1990-1997
Source: *Employment Security Department*



order of their value of production) apples, potatoes, nursery products, pears, sweet cherries, hops, grapes, and asparagus.

Much less labor intensive but nevertheless important sectors of the state agriculture industry are wheat and other grains, dairy products (especially milk), cattle, farm forest products, and hay. The less labor intensive nature of these sectors owes much to advances in technology and investment in mechanization.

Structural Composition of Washington's Economy

Washington's employment base is not static or monolithic. Though each of the state's major industry divisions has experienced employment growth, their respective shares of total nonfarm employment have shifted over time. Viewed over time, these shifts reveal a few notable structural changes in Washington's economy, perhaps debunking a few of the long-held beliefs in the process *(see Figure 29 on the next page)*.

The greatest structural shifts in Washington's economy have clearly been the dramatically declining share of manufacturing jobs and the tremendously increasing share of service jobs. Manufacturing's employment share eroded by nearly half from nearly 28 percent in 1957 to less than 15 percent by 1997, which mirrored the national trend. Moreover, its share is expected to continue sliding into the next millenium to an anticipated 12 percent by 2020. Despite the much-heralded employment booms in aircraft and parts and prosperity in food processing, machinery, and electronics, the state's other large manufacturing sectors have experienced heavy restructuring in the postwar period. The resulting employment declines and/or slow growth have translated into a loss of share in the face of more rapid growth in, for example, the service sector.

As noted, services has been a star performer in Washington for the past 50 years. In stark contrast to manufacturing, this sector's employment share expanded nearly two-and-a-half fold from roughly 11.6 percent in 1947 to 27 percent in 1997 (the sector's share nationally rose from 11.5 percent in 1947 to an even higher 29 percent). Services' employment share is projected to continue expanding into the twenty-first century and is expected to constitute nearly one-third of all nonfarm jobs by 2020. As the comparable national share suggests, this phenomenon is largely the result of the broader transition from a goods-producing economy to a services-producing economy. However, the higher-than-average concentration of computer software firms in Washington has provided a boost to offset the state's growing but below average use of health services.

Contrary to popular belief, wholesale and retail trade did not see its share of total nonfarm employment in Washington rise like that of services. Rather, it has been roughly one-quarter of the state's nonfarm employment base for most of the past 50 years. This seemingly constant employment share is tied to the fact that trade, as essentially the largest industry sector, essentially set the pace for statewide employment growth. Since it mirrored the pace of employment growth statewide, its share remained relatively fixed. One thing that can be said for Washington's trade sector is that its share of total nonfarm employment has remained somewhat higher than that for the trade sector nationally.

The same case can essentially be made for government employment. The popular belief is that public sector employment has been growing as a share of total nonfarm employment over the years. Not true. Though government's share of total nonfarm employment rose into the 20 percent range in the 1960s and 1970s, it subsided in the 1980s and 1990s to just over 18 percent in 1997. This represents the lowest share of government

Figure 29
Major Industry Employment Shares
Washington State, 1947-2020
Source: *Employment Security Department*

	1947	1957	1967	1977	1987	1997	2005	2010	2015	2020
Construction	5.8%	5.6%	5.4%	5.7%	4.8%	5.4%	4.9%	4.7%	4.6%	4.6%
Manufacturing	26.3%	27.8%	26.5%	19.0%	17.2%	14.7%	13.7%	13.1%	12.5%	12.1%
TPU	10.2%	8.1%	6.6%	5.8%	5.3%	5.3%	4.7%	4.7%	4.6%	4.6%
Trade	24.0%	22.8%	21.6%	24.1%	24.7%	24.2%	20.7%	24.5%	24.7%	24.8%
FIRE	3.6%	4.3%	4.9%	5.5%	5.8%	5.1%	4.9%	4.8%	4.8%	4.7%
Services	11.6%	11.5%	13.9%	18.2%	22.7%	27.0%	29.4%	30.3%	31.1%	31.5%
Government	18.1%	19.7%	22.0%	22.5%	19.3%	18.2%	18.1%	17.8%	17.6%	17.6%

employment in Washington since World War II. Moreover, government's share of total nonfarm employment in Washington is projected to continue sliding to 17.6 percent by 2020. It is fair to say that government's share of employment in Washington is higher than it is nationally (16.1 percent in 1997). However, Washington also has a disproportionately high share of military installations and public park systems.

Transportation and public utilities (TPU) share has been roughly halved over the past 50 years from 10.2 percent in 1947 to 5.3 percent by 1997. TPU's declining share has been brought about by a combination of modest growth offset by deregulation and restructuring. This pattern of share loss is expected to continue into the next millenium with TPU holding a 4.6 percent share by 2020. The national trend has been quite similar from its 9.5 percent share in 1947 to its progressive decline to 5.3 percent in 1997.

Two sectors—construction and finance, insurance, and real estate (FIRE)—showed the least structural shifts. Construction's share of total nonfarm employment fell gradually, almost imperceptibly, from 5.8 percent in 1947 to 5.4 percent in 1997. FIRE, meanwhile, saw its share rise from 3.6 percent in 1947 to nearly 6 percent in 1987 before retreating to 5.1 percent by 1997. By 2020, projections show that these two sectors will, along with TPU, be the smallest in Washington with shares around 4.6 percent to 4.7 percent. The structural patterns for the same two industries at the national level were very similar.

The State of Things

The sector by sector analyses of Washington's postwar employment patterns reveal an economy built upon a considerable array of demographic, topographic, geographic, and public policy factors. Many contend that just a few sectors—aerospace, forest products, and agriculture—have dictated the course of Washington's economy. Perhaps that was so in the past. Evidence, however, also suggests that those few sectors, though influential, exercise less leverage over Washington's increasingly broad-based economy than before. The shifts in Washington's industry composition over the past 50 years alone provide ample proof of that. The shift from a goods-producing or brawn-based economy to a services-producing or brain-based economy is real and will continue. While aerospace and agriculture remain prominent, other traditional industries such as forest products are being supplanted by technology-based industries.

It is also important to recognize that the next half-century may introduce currently unknown factors that redefine—perhaps even reconstitute—Washington's economic map. It is also conceivable that any one or more of the state's current economic drivers might be eliminated or rendered footnotes to history by changing economic, social, and political circumstances. Washington's economic history, after all, is proof that prosperity and decline have many origins—some of which are easy to anticipate, others of which are virtually impossible to anticipate. The only certainty is change.

Author's Note: The transition from the Standard Industrial Classification (SIC) codes to the North American Industrial Classification System (NAICS) in 1999-2000 will significantly alter employment-related time series data as we know it today. Though estimates of total employment will remain consistent, industry level detail will, in some cases, shift dramatically. For example, prepackaged software, which has been a principal driver of services employment, will be shifted to manufacturing. Logging, which is now classified under manufacturing, will move to agriculture-forestry-fishing. The SIC-NAICS conversion will significantly affect the Nonagricultural Wage and Salary Employment estimates used in this study (as well as the Covered Employment and Payroll data widely used by others).

Table 1
Nonagricultural Wage and Salary Employment by Industry
Washington State, 1947-1997 Estimates, 2000-2020 Projections
Source: *Employment Security Department*

	Total	Construction	MFG	TPU	Trade	FIRE	Services	Government
1947	659,900	38,300	173,500	67,100	158,300	23,500	76,300	119,500
1948	674,300	50,300	174,500	66,800	159,400	24,100	77,300	118,500
1949	660,000	42,200	169,400	63,300	155,500	24,500	76,600	125,400
1950	672,300	42,700	173,900	64,600	157,200	26,100	77,000	127,800
1951	722,200	47,100	191,800	67,200	163,300	26,700	79,700	143,500
1952	733,000	46,800	191,600	66,400	166,600	27,600	81,800	149,300
1953	736,000	46,700	195,800	66,800	166,600	28,500	82,200	146,600
1954	728,500	48,500	189,900	62,600	166,200	30,500	82,200	146,300
1955	756,400	46,500	202,400	63,200	175,600	33,000	84,900	148,400
1956	773,200	45,100	208,000	64,800	180,400	33,400	88,800	150,300
1957	793,200	44,500	220,400	64,600	180,500	33,800	91,000	156,300
1958	782,800	44,000	219,300	61,500	171,000	34,300	90,200	160,700
1959	812,800	45,900	225,900	61,000	176,800	37,800	99,900	166,500
1960	812,600	44,600	216,600	61,300	180,000	38,300	103,500	170,100
1961	818,500	45,600	217,500	60,800	178,100	39,000	105,600	175,400
1962	856,600	44,700	232,600	61,000	186,600	41,700	112,700	180,000
1963	850,700	43,200	224,000	60,200	186,800	42,400	112,200	184,600
1964	854,900	40,500	219,300	60,300	189,600	42,900	116,000	193,100
1965	896,600	46,400	227,000	61,700	198,900	44,400	123,300	206,200
1966	988,600	54,600	265,300	65,800	214,400	47,100	133,400	218,500
1967	1,045,500	56,300	277,100	69,000	226,300	50,800	145,700	230,100
1968	1,099,600	58,800	286,900	71,700	235,700	55,300	159,500	237,400
1969	1,120,700	57,600	278,600	73,700	245,000	58,300	168,500	244,500
1970	1,080,000	53,300	239,400	72,200	240,800	58,400	169,700	252,400
1971	1,065,200	54,000	214,700	70,200	239,800	57,900	174,500	258,700
1972	1,100,100	54,600	224,100	70,800	249,700	58,800	181,500	259,000
1973	1,152,300	58,100	244,200	72,800	262,700	61,400	192,200	269,300
1974	1,198,900	57,100	253,600	73,700	273,900	63,300	206,000	280,500
1975	1,225,700	59,500	241,800	71,000	281,700	66,200	219,200	284,800
1976	1,283,100	67,000	247,400	75,400	306,800	68,200	231,400	294,900
1977	1,367,000	77,600	260,000	78,900	329,000	75,000	249,300	308,000
1978	1,485,600	92,700	284,700	83,800	357,800	83,300	272,500	315,500
1979	1,581,200	104,400	309,600	89,400	379,100	89,400	290,800	330,800
1980	1,608,300	92,600	308,700	91,400	381,300	91,800	308,500	326,400
1981	1,612,000	90,300	303,000	90,200	388,200	92,300	318,200	318,500
1982	1,568,600	76,200	289,000	89,000	385,400	90,700	316,900	324,000
1983	1,586,100	74,200	278,400	87,900	393,900	92,300	332,800	334,500
1984	1,659,900	79,600	288,100	91,200	411,600	95,700	356,600	342,800
1985	1,710,400	80,600	295,500	93,600	420,600	99,600	375,100	342,800
1986	1,769,900	84,500	305,100	96,200	436,500	104,900	391,000	348,900
1987	1,851,800	88,900	318,400	98,500	458,200	107,500	420,100	357,200
1988	1,943,200	96,600	341,800	101,900	477,600	109,400	443,900	368,800
1989	2,052,400	107,100	362,600	108,500	503,400	112,700	474,700	379,900
1990	2,152,100	117,700	371,300	113,400	523,600	116,400	508,400	397,600
1991	2,175,400	118,200	351,900	111,900	527,200	116,900	534,000	411,600
1992	2,222,000	119,200	347,200	113,600	537,800	119,300	557,800	423,600
1993	2,251,800	119,100	340,800	114,200	546,600	121,200	576,700	430,000
1994	2,304,300	123,000	336,900	116,500	565,100	124,100	598,100	437,200
1995	2,346,900	122,000	332,400	119,600	580,100	121,600	623,500	444,400
1996	2,415,600	127,900	344,700	124,900	591,000	124,000	649,100	450,600
1997	2,512,000	135,900	369,400	133,200	607,200	128,300	677,000	457,500
2000	2,673,700	133,900	386,600	129,000	648,900	131,600	753,600	486,600
2005	2,892,600	140,700	397,300	136,900	598,700	140,300	850,100	524,800
2010	3,090,700	146,400	405,500	143,900	756,400	147,900	936,800	549,900
2015	3,266,700	151,600	409,300	149,800	807,200	155,200	1,015,400	574,200
2020	3,413,600	157,000	412,500	155,800	845,200	160,200	1,076,700	601,900

Table 2
Nonagricultural Wage and Salary Employment by Manufacturing Sectors
Washington State, 1947-1997 Estimates, 2000-2020 Projections
Source: *Employment Security Department*

	Total MFG	Aircraft & Parts	Food & Kindred	Lumber & Wood	Paper & Allied	Printing & Publishing	Primary Metals	Fabr. Metals/ Machinery	Instruments
1947	173,500	13,300	28,700	58,800	13,200	7,000	9,000	11,400	*
1948	174,500	15,300	26,500	59,000	13,800	7,100	10,000	10,800	*
1949	169,400	24,000	26,500	52,100	13,400	7,400	8,800	9,500	*
1950	173,900	19,500	26,200	58,000	14,100	7,200	10,000	10,800	*
1951	191,800	27,300	26,800	60,700	15,100	7,100	11,600	12,300	*
1952	191,600	29,800	24,900	55,000	15,400	7,100	12,000	13,800	*
1953	195,800	33,700	25,400	52,900	15,700	7,200	13,000	13,300	*
1954	189,900	37,000	24,900	46,500	16,000	7,400	12,200	12,900	*
1955	202,400	39,000	24,700	52,300	16,900	7,800	13,700	13,000	*
1956	208,000	44,200	23,600	50,600	17,300	8,100	15,000	13,600	*
1957	220,400	62,500	23,500	44,900	17,200	8,300	14,200	15,100	*
1958	219,300	66,200	27,200	42,300	16,800	8,200	10,500	13,200	*
1959	225,900	67,200	27,400	46,900	17,400	8,400	10,200	13,900	*
1960	216,600	57,800	27,100	44,400	18,000	8,700	10,200	15,100	*
1961	217,500	62,300	26,800	41,600	17,800	8,600	9,400	11,800	*
1962	232,600	73,300	26,900	42,900	18,300	8,700	9,500	12,600	*
1963	224,000	64,200	26,300	43,700	18,800	8,700	10,800	12,000	330
1964	219,300	52,600	25,800	46,700	19,200	8,900	11,700	13,000	380
1965	227,000	57,000	26,200	46,900	19,800	9,200	11,700	15,500	360
1966	265,300	85,400	28,400	46,600	20,300	10,000	13,400	17,500	420
1967	277,100	98,700	29,700	44,000	19,900	10,100	13,200	17,800	540
1968	286,900	104,500	29,500	45,900	20,000	10,500	13,700	17,300	650
1969	278,600	91,100	29,800	45,200	20,000	10,700	15,100	19,000	720
1970	239,400	61,500	28,900	42,200	19,800	10,600	14,100	17,400	750
1971	214,700	40,500	28,200	43,400	18,100	10,300	13,500	16,400	780
1972	224,100	41,100	27,700	48,900	18,200	10,600	13,400	18,000	730
1973	244,200	50,100	28,700	51,700	17,600	11,100	14,400	20,700	880
1974	253,600	54,100	29,000	50,800	17,700	11,500	15,900	21,600	1,020
1975	241,800	50,400	29,100	47,200	16,400	11,500	14,700	22,600	2,140
1976	247,400	45,000	30,400	51,000	17,400	12,000	14,600	21,900	2,370
1977	260,000	46,100	31,600	54,000	17,600	12,900	14,700	19,400	2,810
1978	284,700	59,800	32,800	55,100	14,000	14,000	16,400	24,300	3,500
1979	309,600	72,600	32,900	53,900	15,900	15,400	17,400	26,600	5,630
1980	308,700	79,600	32,000	47,000	17,600	15,800	16,700	26,700	6,360
1981	303,000	79,000	31,800	44,400	17,200	15,800	16,300	26,700	7,390
1982	289,000	74,900	31,800	39,400	16,100	15,800	13,700	26,500	8,400
1983	278,400	65,000	31,100	42,200	15,800	16,000	12,600	24,700	9,400
1984	288,100	66,600	30,800	41,300	16,200	16,900	13,400	26,300	10,200
1985	295,500	76,100	31,100	38,300	16,700	17,600	12,700	26,800	10,700
1986	305,100	85,000	31,100	38,400	16,700	18,700	11,600	27,600	10,400
1987	318,400	92,900	32,300	40,400	16,600	20,100	11,300	26,700	10,800
1988	341,800	101,000	34,200	41,700	17,100	21,300	12,700	28,900	14,600
1989	362,600	113,700	35,900	41,200	18,000	21,700	13,100	31,200	15,200
1990	371,300	116,300	38,500	40,000	18,200	22,700	13,200	32,900	14,700
1991	351,900	115,600	37,500	36,400	17,900	22,500	12,300	31,800	13,800
1992	347,200	111,900	38,000	36,500	17,700	22,700	11,700	30,700	14,100
1993	340,800	102,700	39,100	35,800	17,200	23,000	11,200	31,700	13,500
1994	336,900	91,800	40,500	36,300	17,200	23,500	10,800	33,400	12,800
1995	332,400	80,200	42,000	35,400	17,300	24,100	11,200	35,000	12,900
1996	344,700	86,300	42,300	35,200	16,800	24,400	11,500	37,700	13,700
1997	369,400	104,600	41,500	35,400	16,300	24,300	11,700	40,900	14,400
2000	386,600	106,800	47,300	33,800	18,200	26,700	12,100	42,100	13,600
2005	397,300	101,600	48,900	33,400	18,100	27,700	13,100	47,400	13,500
2010	405,500	96,600	50,600	32,700	18,000	28,900	13,500	50,500	13,400
2015	409,300	92,800	51,900	32,400	17,900	29,900	13,500	51,500	13,300
2020	412,500	92,800	52,600	32,100	17,800	30,500	13,500	51,800	13,200

Table 3
Unemployment Rates
Washington and United States, 1940-1997
Source: *Employment Security Department, LMEA and U.S. Department of Labor, BLS*

	Washington	U.S.		Washington	U.S.
1940	15.2%	n/a	1969	5.7%	3.5%
1941	2.1%	n/a	1970	9.2%	5.0%
1942	2.4%	n/a	1971	10.1%	6.0%
1943	10.0%	n/a	1972	9.5%	5.6%
1944	10.9%	n/a	1973	7.9%	4.9%
1945	6.9%	n/a	1974	7.2%	5.6%
1946	6.1%	n/a	1975	9.5%	8.5%
1947	6.3%	n/a	1976	8.7%	7.7%
1948	5.5%	3.8%	1977	8.8%	7.0%
1949	7.5%	6.0%	1978	6.9%	6.1%
1950	6.3%	5.2%	1979	6.8%	5.8%
1951	3.4%	3.3%	1980	7.9%	7.2%
1952	3.9%	3.0%	1981	9.5%	7.6%
1953	4.4%	2.9%	1982	12.1%	9.7%
1954	6.0%	5.6%	1983	11.2%	9.6%
1955	5.1%	4.4%	1984	9.5%	7.5%
1956	4.7%	4.1%	1985	8.1%	7.2%
1957	5.2%	4.3%	1986	8.2%	7.0%
1958	7.2%	6.8%	1987	7.6%	6.2%
1959	5.7%	5.5%	1988	6.2%	5.5%
1960	6.4%	5.6%	1989	6.2%	5.3%
1961	6.8%	6.7%	1990	4.9%	5.6%
1962	5.5%	5.5%	1991	6.4%	6.8%
1963	6.2%	5.6%	1992	7.6%	7.5%
1964	6.5%	5.2%	1993	7.6%	6.9%
1965	5.4%	4.5%	1994	6.4%	6.1%
1966	4.1%	3.8%	1995	6.4%	5.6%
1967	5.1%	3.8%	1996	6.5%	5.4%
1968	4.9%	3.6%	1997	4.8%	4.9%

Table 4
Resident Population and Net Migration
Washington State, 1940-1997
Source: *Office of Financial Management*

	Population	Net Change	% Change	Migration
1940	1,736,200	---	---	---
1950	2,379,000	642,800	3.2%	401,900
1951	2,424,000	45,000	1.9%	11,800
1952	2,448,000	24,000	1.0%	-11,600
1953	2,466,000	18,000	0.7%	-20,800
1954	2,516,000	50,000	2.0%	11,400
1955	2,604,000	88,000	3.5%	49,000
1956	2,668,000	64,000	2.5%	25,700
1957	2,724,000	56,000	2.1%	15,100
1958	2,773,000	49,000	1.8%	7,700
1959	2,821,000	48,000	1.7%	8,500
1960	2,853,200	32,200	1.1%	-6,600
1961	2,897,000	43,800	1.5%	4,200
1962	2,948,000	51,000	1.8%	13,000
1963	2,972,000	24,000	0.8%	-12,700
1964	3,008,000	36,000	1.2%	3,800
1965	3,065,000	57,000	1.9%	28,400
1966	3,125,000	60,000	2.0%	36,000
1967	3,229,000	104,000	3.3%	79,900
1968	3,336,000	107,000	3.3%	82,200
1969	3,397,000	61,000	1.8%	33,600
1970	3,413,300	16,300	0.5%	-13,700
1971	3,436,300	23,100	0.7%	-7,200
1972	3,430,300	-6,000	-0.2%	-28,700
1973	3,444,300	14,000	0.4%	-3,300
1974	3,508,700	64,400	1.9%	46,200
1975	3,567,900	59,200	1.7%	39,400
1976	3,634,900	67,000	1.9%	45,800
1977	3,715,400	80,500	2.2%	55,400
1978	3,836,200	120,800	3.3%	94,000
1979	3,979,200	143,000	3.7%	113,000
1980	4,132,400	153,200	3.9%	119,100
1981	4,229,300	96,900	2.3%	60,600
1982	4,276,500	47,300	1.1%	8,900
1983	4,307,200	30,700	0.7%	-6,200
1984	4,354,100	46,800	1.1%	11,600
1985	4,415,800	61,700	1.4%	26,600
1986	4,462,200	46,400	1.1%	10,200
1987	4,527,100	64,900	1.5%	30,000
1988	4,616,900	89,800	2.0%	54,800
1989	4,728,100	111,200	2.4%	74,200
1990	4,866,700	138,600	2.9%	98,500
1991	5,000,400	133,700	2.7%	91,200
1992	5,116,700	116,300	2.3%	73,200
1993	5,240,900	124,200	2.4%	84,500
1994	5,334,400	93,500	1.8%	54,800
1995	5,429,900	95,500	1.8%	58,000
1996	5,516,800	86,900	1.6%	50,700
1997	5,606,800	90,000	1.6%	54,500

Note: 1940-1950 was marked by a migration boom from Hanford, aircraft, shipbuilding, and troop movements.