

DESCRIPTION OF PATENT TRENDS AND TECHNICAL NOTES

Annual Patents (Table 6.4)

Table 6.4 presents, in the first two columns, the total number of Washington and U.S. patents issued annually between 1978 and 1998, with lump sum totals for prior years. The third column indicates that the state's patents have grown faster than U.S. patents, rising from just under 1 percent of the U.S. total in the pre-1978 era to over 2.2 percent in 1998. The last column reveals that Washington's per capita share of patents also rose from 70 percent of the U.S. figure to 105 percent. Comparing the period prior to the existence of the programs, 1990-94, with 1995-99, the data show an 8.6 percentage point increase in Washington's average share of per capita patents.

Ranking by Patent Class (Table 6.5)

Table 6.5 compares Washington and U.S. patent growth over the 1990-94 and 1995-99 periods. The table presents only the rankings for the 40 patent classes (out of 394) that looked to be most closely related to the definition of "high tech" under RCW 82.63.010. The first two columns indicate the growth ranking for Washington and the U.S., while the average annual number of Washington patents is presented in the last two columns.

Table 6.5 shows that Washington patent growth over this period has tended to be in the "high tech" patent classes. Thirteen out of 40 "high tech" classes are in the top portion of the table with Washington growth ranking higher than the U.S. growth ranking. Though the state and U.S. growth rankings are not strictly comparable, this result implies that the state is well represented in "high tech" classes and is improving more rapidly than the nation in many of them.

However, the data indicate that Washington's emphasis on "high tech" fields is less than in the U.S. Of the top ten growth classes in the U.S., only two of Washington's top ten growth classes are in "high tech" fields (Washington rankings 1 and 7). While it is to be expected that the U.S. would have more diversified "high tech" patents than Washington does, there is room for the state to improve on this score.

Detailed Patent Counts by Firm

The Department obtained a list of firms that had been granted patents from the U.S. Patent Office. There were 2,254 firms with Washington addresses. The Department was able to match registration numbers to 1,815 of these firms which amounted to about 95 percent of patents granted between 1995-1999. Of these firms only 185 firms participated in either of the R&D programs but received 53 percent of the patents. About the same number of the patents are granted to firms that did not participate in these programs, even though many of these firms are in the same industries as the participant firms. However, average wage growth for the firms receiving patents was significantly higher than for firms that didn't receive patents.

Regressions were calculated on patents received by firms that participated in the R&D programs. The result is that for each \$1 million in R&D credit received, approximately 5.2 patents are generated, and for each \$1 million of R&D deferral received, about 2.3 patents are generated. These estimates remove the effect of trend and the effect of the machinery and equipment exemption.

TECHNICAL NOTES

Washington Patent Class Rankings (Table 6.5)

For this table, patents are divided into 394 patent classes with only those 40 that looked to be “high tech” presented in the table. The patent classes were ranked 1 through 394, with the final ranking depending upon the product of the absolute and percentage growth rankings.

Since the intention is to compare Washington State patents with the U.S. as a whole, the first step was to determine the annual Washington percentage of U.S. patents for each of the 394 patent classes; annual averages for both time periods were then computed as well. These annual average Washington shares of U.S. patents, for each class, were compared to the state’s total share of U.S. patents for the pre-1995 and the post-1995 periods. The value used in the ranking was the difference between the pre- and post-1995 shares.

Table 6.5 lists in the top portion those patent classes having better growth rankings for Washington compared to the U.S., while the bottom portion lists those classes having worse growth rankings compared to the U.S. It must be pointed out that the Washington and U.S. growth rankings are not strictly comparable because the Washington rank is based on relative growth to Washington and the U.S. rank is based on relative growth to the U.S.