



# High-tech manufacturing employment in the draft 2024 regional forecast

*To inform the 2024 urban growth management decision, Metro completes a regional population, household, and employment forecast. The employment forecast is a key aspect of how we estimate regional demand for land for various employment sectors.*

## **Context**

Under state law, Metro's forecast must be developed using commonly accepted practices and standards and must be based on current, reliable, and objective sources and verifiable information. It must account for documented long-term trends as well as recent events that have a reasonable likelihood of changing historical trends. To ensure the validity of its forecast, Metro has periodically undertaken expert reviews of the forecast model itself. Most recently, Metro has convened an expert panel review of the draft 2024 forecast results<sup>1</sup>. In short, the forecast is intended to objectively estimate what future regional employment is likely to be. It is not intended as an aspirational statement or an economic development plan.

Because of greater Portland's relative strengths in computer and electronic products manufacturing, there is long-standing interest in this sector. Consequently, Metro often fields questions about its forecast for this sector, including questions about how the CHIPS Act and its investments in semiconductor manufacturing influence Metro's forecast.

## **Main takeaways**

- Most long-term employment growth will come from sectors that provide services, such as health care, to the resident population.
- Metro's draft regional forecast shows resilience in manufacturing sectors, including the computer and electronic manufacturing sector, despite long-term declines at the national level.
- Manufacturing jobs represent about 10 percent of total non-farm jobs in the region today and they are expected to represent about that same share in the year 2044.
- Metro's draft regional forecast incorporates positive impacts of the CHIPS Act.
- Greater Portland has significant strength in engineering and design of semiconductors. CHIPS Act investments help maintain those competitive advantages, which have different implications for land use and land needs than the construction of new semiconductor fabrication facilities.
- Metro's draft regional forecast for computer and electronic manufacturing is consistent with the forecast from the Oregon Office of Economic Analysis.

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<sup>1</sup> The 2024 – 2044 Regional Forecast and its expert panel review are documented in appendices to the draft 2024 Urban Growth Report. These documents have previously been made available to the UGR Roundtable in advance of the release of the draft 2024 UGR.

**National context for manufacturing employment**

According to the U.S. Bureau of Labor Statistics (BLS), manufacturing employment reached its national peak four decades ago, in 1979. Since then, manufacturing employment has fallen in each of the five recessions and, in each case, never recovered to pre-recession levels. In the Metro region (7-county Metropolitan Statistical Area), the peak was reached in the late 1990s. Going forward, Metro’s forecast shows more resilience for manufacturing employment at the regional scale than the S&P Global Insight forecast indicates for the nation. See Figure 1.

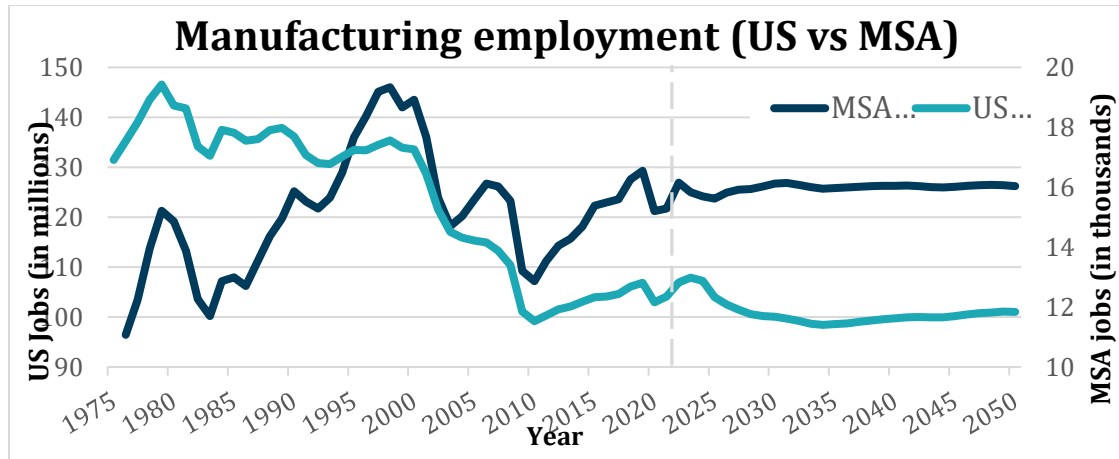


Figure 1: Manufacturing employment in the U.S. and the 7-county Portland Metropolitan Statistical Area (note different y axes)

Sources: Historic data: U.S. Bureau of Labor Statistics; National forecast: S&P Global Insight; MSA forecast: Metro

Nationally, durable goods manufacturing sectors, including the computer and electronics manufacturing sector, are all well below their 1979 job numbers. Nationally, there are 55 percent the number of jobs in the computer and electronics manufacturing sector today as there were in 1979 (see Figure 2). The causes are well established and include offshoring and automation.

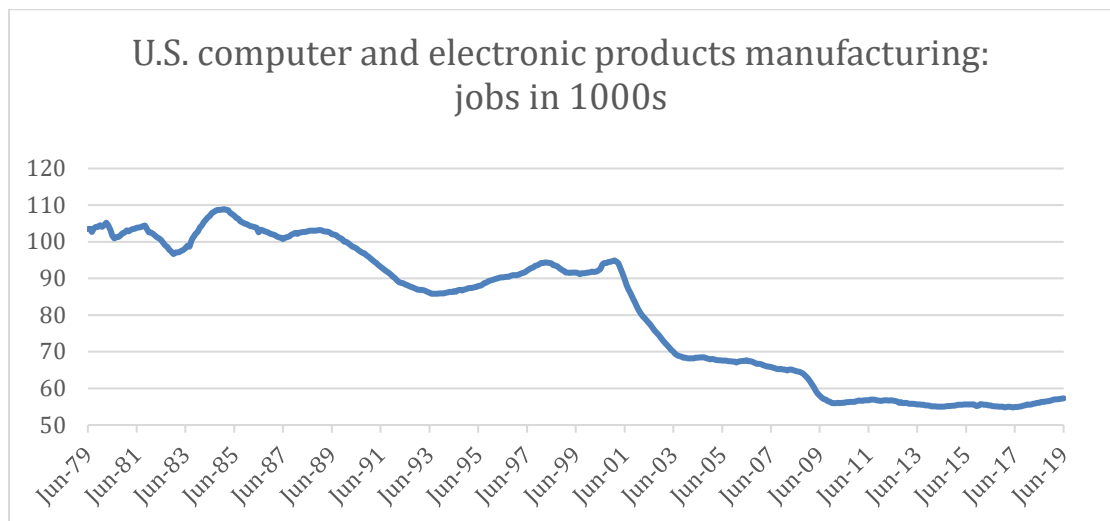


Figure 2: U.S. jobs in computer and electronic products manufacturing 1979-2019 (source: U.S. Bureau of Labor Statistics)

### State context for computer and electronic product manufacturing

For the state of Oregon, early 2001 marks the high point for employment in the computer and electronic manufacturing sector. For this sector, the state is currently at the same employment level as it was 20 years ago.

The Oregon Office of Economic Analysis (OEA) forecasts that the CHIPS Act will result in an additional 3,000 computer and electronic product manufacturing jobs statewide over the next five years (Oregon Office of Economic Analysis, 2023) before flattening for the duration of the 10-year forecast. Figure 3, depicts the OEA statewide forecast for this sector with CHIPS Act investments (dotted green line) and without. As depicted, OEA does not forecast a major upturn in this sector.

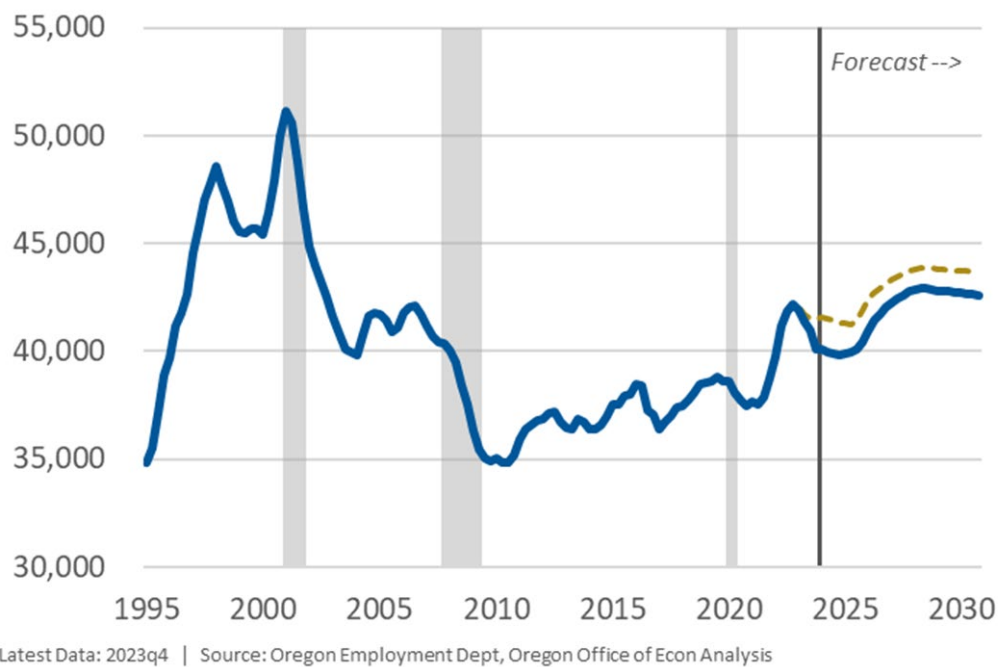


Figure 3: Oregon statewide employment in computer and electronic product manufacturing with and without CHIPS Act investment

### Regional forecast for computer and electronic product manufacturing

As shown in Figure 4, Metro’s forecast indicates short-term impacts of the CHIPS Act like those in the OEA forecast. The average annual growth rates for the computer and electronics manufacturing sector are 0.5% (statewide jobs) in the OEA forecast and 0.4% (MSA jobs) in the Metro forecast. Metro’s expert forecast review panel indicated that job increases from the CHIPS Act will be in the nearer term, followed by a longer-term slide, resulting in a slight net increase from 2024 to 2044. Panelists indicated that a second or third CHIPS Act or similarly scaled public subsidies would be necessary for computer and electronic product manufacturing job gains persist in the longer term.

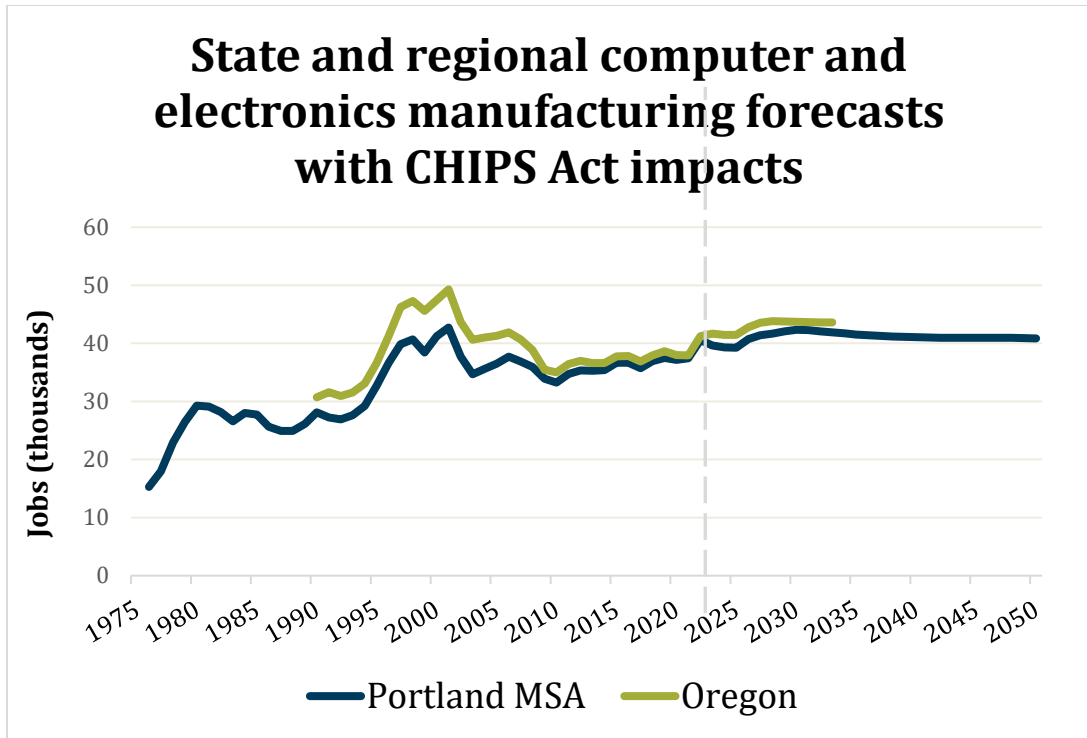


Figure 4: comparison of state and regional forecast for computer and electronics manufacturing with CHIPS Act impacts; State forecast; OEA; MSA forecast: Metro

Figure 5 depicts the Metro baseline forecast for this sector with the CHIPS Act as well as the forecast for this sector if there were no CHIPS Act add factor (green dotted line). Without the CHIPS Act, the regional forecast would show a decline in this sector. To reiterate, the baseline forecast assumes positive impacts from the CHIPS Act. This is shown most starkly in about year 2030 when the baseline forecast has approximately 5,000 more jobs in this sector than would otherwise be forecast. However, this trend is not expected to persist without significant additional public investment. This reflects the longer-term national, state, and regional trend of declines in this sector from peaks achieved in earlier decades. These employment declines are widely understood to have been caused by offshoring and automation of manufacturing.

The positive effects of the CHIPS Act in the computer electronics manufacturing sector are incorporated into the regional forecast model as an exogenous assumption (added from outside the forecast model framework). The model has inter-industry demand variables which estimate indirect and induced effects of computer and electronics manufacturing job increases on other sectors such as the construction or professional and business services sectors.<sup>2</sup> In other words, each new high-tech manufacturing job will have a multiplier effect in other sectors. Those multipliers effects are implicit in the forecast results.

<sup>2</sup> Metro staff has not specifically calculated these impacts in other sectors with and without the CHIPS Act, but an increase in the manufacturing sector will generally lead to increases in some other sectors. Economic literature indicates that each high-tech manufacturing job has a multiplier effect of 3.5 to 4 jobs in other sectors in regional economies with an existing high-tech cluster.

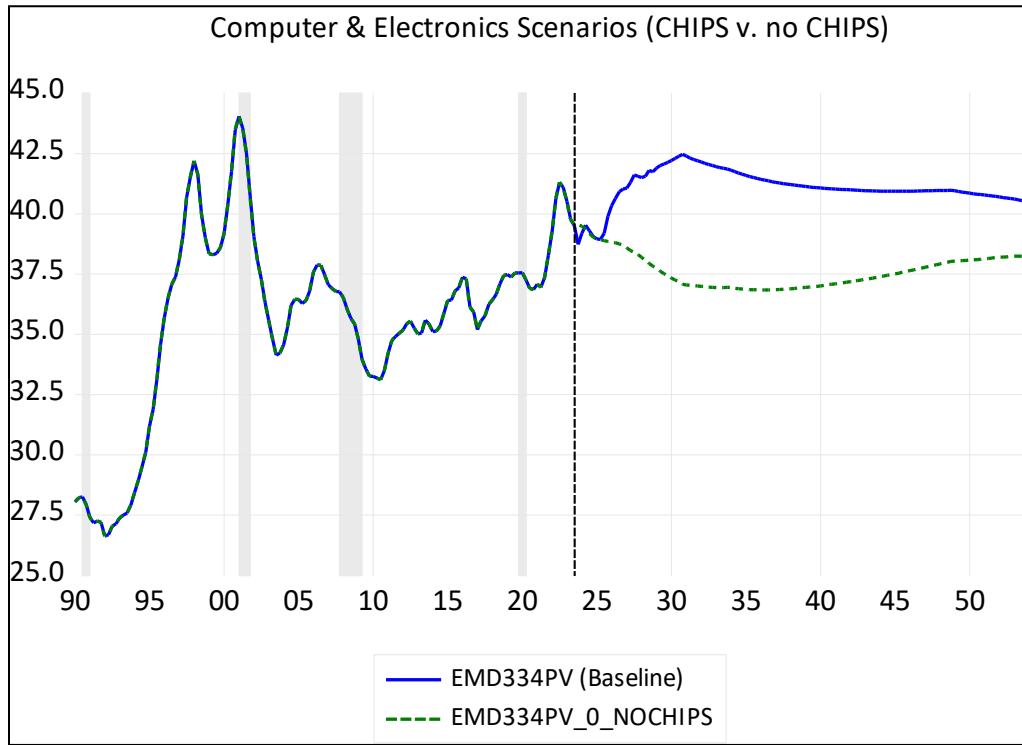


Figure 5: Metro MSA baseline forecast with CHIPS Act impacts (blue line) for computer and electronic manufacturing compared to forecast without CHIPS Act impacts (green dotted line)