

## Summary of variance estimates for PPI price changes, 2022

Variance is a measure of the uncertainty caused by the use of a sample of producer prices instead of the complete universe of producer prices. The most commonly used measure of variability is the standard error of the estimate—the square root of the variance. The standard error of the percent change in the Producer Price Index (PPI) can be used to construct confidence intervals and to determine whether the percent change for a particular PPI series is significantly different from zero.

For example, the 1-month median absolute percent change for the final demand index in 2022 was 0.66 percent, and the 1-month median standard error (SE) was 0.16 percent. (See table 1 of the 2022 PPI variance data release.) Margins of error for a point estimate are commonly expressed as plus and minus two standard errors. The margin of error for the 1-month final demand index in 2022 is approximately 0.66 percent plus and minus 0.32 percent ( $2 \times 0.16$  percent). Therefore, in a typical 1-month period in 2022, the percent change in the final demand index was probably somewhere between 0.34 percent and 0.98 percent. On a 12-month basis in 2022, the median absolute percent change for the final demand index was 9.89 percent, and the median SE was 0.37 percent. Margins of error for the 12-month period can be calculated in the same way as for the 1-month period.

Table 1 provides variance estimates for 1-month and 12-month percent changes for the Producer Price Index Final Demand-Intermediate Demand Indexes.

Table 2 provides variance estimates for selected 1-month and 12-month percent changes for the Producer Price Index commodity-based indexes.

Table 3 provides variance estimates for selected 1-month and 12-month percent changes for the Producer Price Index industry-based indexes.