

The Spec files, etc. adopted in the seasonal adjustment of the Indices of Industrial Production using the X-12-ARIMA method

(1) Method

Not only seasonal but also 'trading-day and holiday' and 'leap-year' effects are adjusted as follows.

Seasonal adjustment index = Original Index / (Seasonal, 'Trading-day and holiday' and 'Leap-year' indices)

(Indices of Producers' Inventories and Inventory Ratio were adjusted by only seasonal effects.)

(2) Spec File

The spec files of X-12-ARIMA for seasonal adjustment are as follows.

```
series { start = 2004.1
        span = (2004.1,2010.12)
        decimals = 1 }
transform { function = log }
arima { model = (2 1 0)(0 1 1) }
regression { variables = (td1 nolpyear lpyear) *1
            save = (td hol)
            user = (jap-hol)
            usertype = holiday
            start = 2004.1
            file = "xxxxxxxxxxxxxxxxxxxxxxx" }
forecast { maxlead = 12 }
estimate { save = ( mdl )
          maxiter = 500 }
x11 { print = (none + d10 +d11 +d16)
      save = (d10 d11 d16)
      seasonalma=x11default }
```

*1: The case of indices of Inventory and Inventory Ratio, delete the word "regression" within the brackets {}

(3) Employment of seasonal index, 'trading-day and holiday' and 'leap-year' indices

The method of temporary seasonal adjustment is adopted for the seasonal index after January 2011. Concretely to say, the monthly seasonal index in 2010 is adopted as those in 2011. As for 'trading-day and holiday' and 'leap-year', indices, this method is not adopted, and 'trading-day and holiday' and 'leap-year' indices are calculated from estimated parameters in (2) and calendar.