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Trend-cycle estimation: Concepts, interpretation, and calculation, 2026

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Trend-cycle estimation: Concepts, interpretation, and calculation, 2026

Statistics Canada releases graphical information on trend-cycle movements for several monthly economic indicators. Estimates of the trend-cycle are presented along with the seasonally adjusted data in selected charts in [The Daily](#). The inclusion of trend-cycle information is intended to support the analysis and interpretation of the seasonally adjusted data.

This reference document provides information on trend-cycle data. It outlines basic concepts and definitions and discusses selected issues related to the use and interpretation of trend-cycle estimates. The document includes a specific example using data on monthly retail sales. Detailed information on the computation of the trend-cycle is also provided.

1 Defining trend-cycle

Trend-cycle data represent a smoothed version of a [seasonally adjusted time series](#), providing information on longer-term movements, including changes in direction underlying the series.

The trend-cycle is the combination of two distinct components:

- The **trend** provides information on longer-term movements in the seasonally adjusted data series over several years.
- The **cycle** is a sequence of smoother fluctuations around the longer-term trend in part characterized by alternating periods of expansion and contraction.

Changes in trend-cycle data reflect the influence of factors that condition long-run movements in the economic indicator over time, along with fluctuations in economic activity associated with the business cycle. These two components, the trend and the cycle, are often paired together because of the difficulty involved in estimating them individually.

2 Trend-cycle versus seasonally adjusted data

A [seasonally adjusted data series](#) is a series that has been modified to eliminate the effect of seasonal and calendar influences in order to facilitate comparisons of underlying conditions from period to period. Seasonally adjusted data series can also be defined as the combination of the trend-cycle and the irregular component of a time series.

In much the same way as a seasonally adjusted series represents the raw series with seasonal and calendar effects removed, the trend-cycle estimates represent the seasonally adjusted series with the irregular component removed. As its name suggests, the irregular component is the part of the time series that is not in line with the usual or expected pattern of the series. This irregular component is not part of the trend-cycle, nor is it related to current seasonal factors or calendar effects.

The irregular component of a time series can represent unanticipated economic events or shocks (for example, strikes, disruptions, natural disasters, unseasonable weather, etc.) or can simply arise from noise in the measurement of the unadjusted data. In some cases, this irregular component can make large contributions to the period-to-period movements in a seasonally adjusted time series.

By removing this irregular component from seasonally adjusted data, the trend-cycle data can yield a better picture of longer-term movements in the time series. In this sense, the trend-cycle can be interpreted as a smoothed version of the seasonally adjusted series.

3 Analytical value of trend-cycles

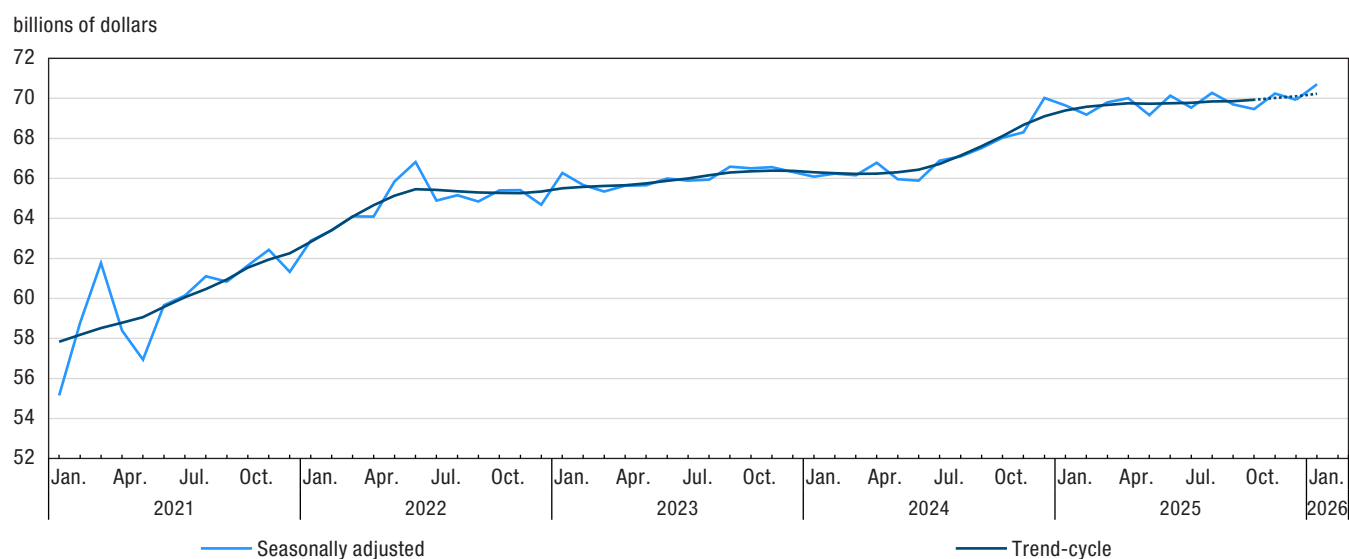
Trend-cycle data provide information on longer-term movements in a seasonally adjusted time series, including changes in the direction of the data. These smoothed data make it easier to identify periods of positive change

(growth) or negative change (decline) in the time series, as the noise of the irregular component has been removed. This allows for a more accurate identification of turning points in the data.

For example, the accompanying graph presents data on monthly retail sales in Canada from January 2021 to January 2026. Two data lines are shown: the seasonally adjusted time series and the trend-cycle estimates. The trend-cycle estimates for the most recent reference months are more subject to revision than the estimates for previous periods, and are presented as a dotted line.

While the seasonally adjusted data can be used to examine basic changes in the direction of the time series, it is easier to see the longer-term movement in these data from the trend-cycle line. The trend-cycle estimates show that retail sales trended upward at a relatively constant rate from early 2021 to mid-2022 and then expanded at a slower pace until mid-2024. Spending accelerated during the second half of 2024 before moderating in 2025. Estimates for the most recent months are based on a preliminary estimation of the trend-cycle and should be interpreted with caution as they are subject to revision as noted above.

Chart 1
Retail sales



Note: The higher variability associated with the trend-cycle estimates is indicated with a dotted line on the chart for the current reference month and the previous three months.

Sources: Statistics Canada tables 20-10-0056-01 and 20-10-0067-01 extracted on April 16, 2026; and trend-cycle computations.

Trend-cycle data are particularly useful when the irregular component makes large contributions to the month-to-month movements in a seasonally adjusted time series. In these cases, graphical information on the trend-cycle helps to interpret the movements in the seasonally adjusted series.

4 Data revisions and use

4.1 Necessity of data revisions

Existing estimates of the trend-cycle are revised with each release of new seasonally adjusted data. As new seasonally adjusted data becomes available, the trend-cycle data for previous months can be better estimated. If the trend-cycle data were not revised along with the seasonally adjusted series, the resulting trend-cycle data could contain series breaks, and would likely be inconsistent with the seasonally adjusted series in terms of levels, period-to-period movements, or both. It is necessary to revise the trend-cycle data to maintain their analytical value.

4.2 Interpreting preliminary estimates (dotted line)

The trend-cycle line that is published graphically is dotted in the most recent reference periods, as these periods are more likely to be subject to revisions. This is done to signal that the trend-cycle data in this period is a

preliminary estimate, and subject to change as new data becomes available. New data make it possible to more accurately estimate the various components that make up the time series. These revisions can change the location of economic turning points, as well as reverse movements between individual months. These types of revisions are more likely to occur in the most recent reference periods.

4.3 Trend-cycle is not a forecast

The trend-cycle should not be viewed as a way to forecast the underlying seasonally adjusted data. These estimates are based solely on the **historical** values of the seasonally adjusted series and do not take into account any other information that could be used to project data for future reference periods. Furthermore, since the trend-cycle is subject to revision when additional reference periods are added to the series, the shape of the trend-cycle in the most recent reference periods should be viewed as a preliminary estimate.

5 Estimation methodology

5.1 Available estimation methods

There is no unique method that is recommended to estimate the trend-cycle that underlies a time series. A variety of methods have been developed in the literature, ranging from very simple to highly complex. Some methods introduce restrictions on the shape of the trend (for example a linear trend of several years), others are based on explicit models that estimate a trend-cycle component, and others, still, are based on variations of moving averages, where the mean of the data is calculated from successive sub spans or intervals of the data.

Since the trend-cycle can also be interpreted as a smoothed version of the seasonally adjusted series, a straightforward way of estimating the trend-cycle is by averaging the last three or six months of the data. While this may yield additional insight into the long-term movement in the series, some measure of caution is warranted as this approach does not take the place of more formal trend-cycle estimation techniques. It can be shown that indicators of the economic cycle derived from this simplified method tend to shift in time and may be artificially dampened.

5.2 Statistics Canada's approach

Statistics Canada uses a **weighted moving average** of the data to compute the trend-cycle. This method is based on the Cascade Linear Filter of Dagum and Luati (2008). This weighted average is computed using the previous six months, the current month and (for older estimates) up to six of the subsequent months in the series. In real time, for the most recent reference month in the series, only data for the six previous months and current month are used, as data for subsequent months are not yet known. As these data become available, the trend-cycle estimates will be revised.

This specific weighted moving average method was selected after an empirical analysis of different alternatives. The estimate of the trend-cycle obtained with the selected method exhibits good statistical properties, as it provides smooth results with limited revisions, and has a low incidence of falsely identifying turning points. As well, it is a linear process and will preserve additive relationships in the data. This implies, for example, that the trend-cycle plotted on employment for men and women separately will sum up to the plotted trend-cycle line for both sexes. The method is easy to replicate as the weights used in the calculation of the weighted average are available.

5.3 Technical calculation details

The trend-cycle is estimated by applying moving averages weighted according to the **cascade linear filter** to the seasonally adjusted series. In general, the moving average used to calculate the trend-cycle for a specific reference month is a weighted average of up to 13 consecutive months, which are centered on the reference month, where possible.

For more information on the calculation of trend-cycle estimates, please consult this document's appendix.

Appendix A: Details on the calculation of trend-cycle estimates at Statistics Canada

This appendix details the way Statistics Canada calculates trend-cycle estimates. It is intended as a technical description to support users who wish to apply trend-cycle estimation to monthly series available on the Statistics Canada website. General formulas outlining the mathematical calculations are presented below, and the derivation and application of the moving average weights are provided. For more information on the use of trend-cycle estimates in analysis, please refer to the previous part of this document.

The trend-cycle estimation method used at Statistics Canada applies moving averages and does not remove seasonal patterns. This procedure is intended for monthly series with at least 13 data points that do not exhibit seasonal patterns (either because no seasonality exists, or because it has been removed by seasonal adjustment).

A.1 The general formula

For each month t , the following formula is applied to estimate the trend-cycle, denoted as TC_t :

Formula 1

$$TC_t = \frac{\sum_{j=t-6}^{t+6} I_j W_j^{(t)} Y_j}{\sum_{k=t-6}^{t+6} I_k W_k^{(t)}}, \quad (1)$$

where Y_j is the value of the input series for month j , available for $j = 1, \dots, T$. If the value of the input series for month j is available, I_j is an indicator equal to 1. Otherwise, it is equal to 0. Applying this formula near the beginning or end of a series leads to undefined terms (e.g. Y_0), discussed in [Section A.2](#). The quantities shown as $W_j^{(t)}$ represent the moving average weights applied to month j for the calculation of the trend-cycle for month t . This is referred to as the cascade linear filter, as derived by Dagum and Luati (2008) and presented in Table 1.

Table 1

Full-precision moving average weights for calculating the trend-cycle for month t

Months	Weights
$t-6$ and $t+6$	-0.027
$t-5$ and $t+5$	-0.007
$t-4$ and $t+4$	0.031
$t-3$ and $t+3$	0.067
$t-2$ and $t+2$	0.136
$t-1$ and $t+1$	0.188
t	0.224

Applying [formula \(1\)](#) for each month $t = 1, \dots, T$ yields the trend-cycle series.

A.2 Applying the general formula

The weights presented in [Table 1](#) were developed by combining several filters that are each optimal for specific purposes. The combined results provide robust trend-cycle estimates with good statistical properties. For more information, see Dagum and Luati (2008).

By design, aggregating the weights in [Table 1](#) for all months from $(t-6)$ to $(t+6)$ gives an exact total of 1. This is necessary so that the level of the trend-cycle series is the same on average as the level of the input series. Note that when we derive the trend-cycle estimates for the first six and the last six months of the input series, [formula \(1\)](#) includes terms that are not defined, such as Y_0 . However, these terms can be assumed to be 0 since they disappear when multiplied by the corresponding indicator coefficient, I_0 , which equals 0 by definition.

In these cases, the denominator in [formula \(1\)](#) represents an adjustment to the moving average weights. Referred to as the cut-and-normalize approach, this ensures that the moving average weights used to estimate the trend-cycle for each month add up to 1. In the cut-and-normalize approach, the weights of the months for which data are unavailable are redistributed proportionally to the months for which data are available. For all other months, the denominator in [formula \(1\)](#) is equal to 1, and the formula is reduced to a simple symmetric moving average with the weights specified in [Table 1](#).

A.3 Alternate expression

In [formula \(1\)](#), a cut-and-normalize approach is used to derive the moving average weights for the first and last six months of the input series. In effect, the cut-and-normalize approach to estimating the trend-cycle employs modified moving average weights to calculate the trend-cycle of the first six months of the series and the final six months. For example, when the trend-cycle estimate for the final month of a series is calculated, the values of the six subsequent months are not yet known. The cut-and-normalize approach proportionally rescales the weights for the months that are available so that their sum is 1. An equivalent expression to [formula \(1\)](#) is given in [formula \(2\)](#), which is based on the rescaled moving average weights, $\tilde{W}_j^{(t)}$, given in [formula \(3\)](#).

Formula 2

$$TC_t = \sum_{j=t-6}^{t+6} I_j \tilde{W}_j^{(t)}, \quad (2)$$

Formula 3

$$\text{where } \tilde{W}_j^{(t)} = \frac{W_j^{(t)}}{\sum_{k=t-6}^{t+6} I_k W_k^{(t)}}. \quad (3)$$

A.4 Illustration

To illustrate how to compute and apply the moving average weights, we consider a monthly series, Y_t , that spans from January 2010 to July 2015—a total of 67 months. The rescaled moving average weights in the formulas below have been rounded to six decimal places. This rounding will sometimes lead to an overestimation or an underestimation at the beginning and end of the series. Because of rounding errors, the trend-cycle obtained using these rounded weights will not be precise within these sections. The full-precision weights must be used to reproduce published trend-cycle estimates exactly.

Three examples below illustrate trend-cycle estimates near the beginning, middle and end of the series. These demonstrate the application of the moving averages when not all months of the 13-term moving average are available ([example 1](#) and [example 3](#)), as well as when they are ([example 2](#)).

Example 1

For the March 2010 trend-cycle estimate ($t = 3$ of the series), the Y_j values are available only for $j = 1, \dots, 9$, which correspond to January 2010 to September 2010. Therefore, a nine-term moving average is used.

According to [formula \(3\)](#), the rescaled weight applied to January 2010 for this moving average is

$$\tilde{W}_1^{(3)} = \frac{0.136}{(0.136 + 0.188 + 0.224 + 0.188 + 0.136 + 0.067 + 0.031 - 0.007 - 0.027)} \approx 0.145299.$$

Approximate values of the rescaled moving average weights, $\tilde{W}_j^{(3)}$, calculated for the months included in the moving average to estimate the trend-cycle for month 3, are shown in [Table 2](#).

Table 2
Rescaled moving average weights (approximate values) for March 2010

Reference month	Weight	Approximate value
$j=1$ (Jan 2010)	$\tilde{W}_1^{(3)}$	0.145299
$j=2$ (Feb 2010)	$\tilde{W}_2^{(3)}$	0.200855
$j=3$ (Mar 2010)	$\tilde{W}_3^{(3)}$	0.239316
$j=4$ (Apr 2010)	$\tilde{W}_4^{(3)}$	0.200855
$j=5$ (May 2010)	$\tilde{W}_5^{(3)}$	0.145299
$j=6$ (Jun 2010)	$\tilde{W}_6^{(3)}$	0.071581
$j=7$ (Jul 2010)	$\tilde{W}_7^{(3)}$	0.033120
$j=8$ (Aug 2010)	$\tilde{W}_8^{(3)}$	-0.007479
$j=9$ (Sep 2010)	$\tilde{W}_9^{(3)}$	-0.028846

Finally, applying [formula \(2\)](#) to the input series Y_j gives the following expression for TC_3 , the trend-cycle estimate for March 2010:

$$TC_3 = Y_1 * (0.145299) + Y_2 * (0.200855) + Y_3 * (0.239316) + Y_4 * (0.200855) + Y_5 * (0.145299) \\ + Y_6 * (0.071581) + Y_7 * (0.033120) + Y_8 * (-0.007479) + Y_9 * (-0.028846).$$

Example 2

For the August 2012 trend-cycle estimate ($t = 32$ of the series), the values of Y_j are available for each month from $j = 26, \dots, 38$, which correspond to February 2012 to February 2013. Therefore, a complete 13-term moving average is used. Because the denominator of [formula \(3\)](#) is exactly equal to 1 in this case, the rescaling has no effect and the weights used in the moving average are identical to the weights in [Table 1](#).

The rescaled weight applied to August 2012 in this moving average is given by

$$\tilde{W}_{32}^{(32)} = \frac{0.224}{(-0.027 - 0.007 + 0.031 + 0.067 + 0.136 + 0.188 + 0.224 + 0.188 + 0.136 + 0.067 + 0.031 - 0.007 - 0.027)} \\ = 0.224.$$

The rescaled moving average weights, $\tilde{W}_j^{(32)}$, calculated for the months included in the moving average used to calculate the trend-cycle estimate for month 32, are presented in Table 3.

Table 3
Rescaled moving average weights to calculate trend-cycle for August 2012

Reference month(s)	Weight	Value
$j=26$ (Feb 2012) and $j=38$ (Fe 2013)	$\tilde{W}_{26}^{(32)}, \tilde{W}_{38}^{(32)}$	-0.027
$j=27$ (Mar 2012) and $j=37$ (Jan 2013)	$\tilde{W}_{27}^{(32)}, \tilde{W}_{37}^{(32)}$	-0.007
$j=28$ (Apr 2012) and $j=36$ (Dec 2012)	$\tilde{W}_{28}^{(32)}, \tilde{W}_{36}^{(32)}$	0.031
$j=29$ (May 2012) and $j=35$ (Nov 2012)	$\tilde{W}_{29}^{(32)}, \tilde{W}_{35}^{(32)}$	0.067
$j=30$ (Jun 2012) and $j=34$ (Oct 2012)	$\tilde{W}_{30}^{(32)}, \tilde{W}_{34}^{(32)}$	0.136
$j=31$ (Jul 2012) and $j=33$ (Sep 2012)	$\tilde{W}_{31}^{(32)}, \tilde{W}_{33}^{(32)}$	0.188
$j=32$ (Aug 2012)	$\tilde{W}_{32}^{(32)}$	0.224

Applying [formula \(2\)](#) to the input series Y_j produces the following expression for the August 2012 trend-cycle estimate, TC_{32} :

$$TC_{32} = Y_{26} * (-0.027) + Y_{27} * (-0.007) + Y_{28} * (0.031) + Y_{29} * (0.067) + Y_{30} * (0.136) + Y_{31} * (0.188) + Y_{32} * (0.224) \\ + Y_{33} * (0.188) + Y_{34} * (0.136) + Y_{35} * (0.067) + Y_{36} * (0.031) + Y_{37} * (-0.007) + Y_{38} * (-0.027).$$

Example 3

For the July 2015 trend-cycle estimate ($t = 67$ of the series), the values of Y_j are known only for each month from $j = 61, \dots, 67$, which correspond to January 2015 to July 2015. Therefore, a seven-term moving average is used.

The rescaled weight applied to July 2015 in this moving average is

$$\tilde{W}_{67}^{(67)} = \frac{0.224}{(0.224 + 0.188 + 0.136 + 0.067 + 0.031 - 0.007 - 0.027)} \approx 0.366013.$$

The rescaled moving average weights, $\tilde{W}_j^{(67)}$, calculated for the other months included in the moving average used to calculate the trend-cycle estimate for month 67, are presented in Table 4.

Table 4
Rescaled moving average weights (approximate values) for July 2015

Reference month	Weight	Approximate value
$j=61$ (Jan 2015)	$\tilde{W}_{61}^{(67)}$	-0.044118
$j=62$ (Feb 2015)	$\tilde{W}_{62}^{(67)}$	-0.011438
$j=63$ (Mar 2015)	$\tilde{W}_{63}^{(67)}$	0.050654
$j=64$ (Apr 2015)	$\tilde{W}_{64}^{(67)}$	0.109477
$j=65$ (May 2015)	$\tilde{W}_{65}^{(67)}$	0.222222
$j=66$ (Jun 2015)	$\tilde{W}_{66}^{(67)}$	0.307190
$j=67$ (Jul 2015)	$\tilde{W}_{67}^{(67)}$	0.366013

Applying [formula \(2\)](#) to the input series Y_j gives the following expression for the July 2015 trend-cycle estimate,

TC_{67} :

$$TC_{67} = Y_{61} * (-0.044118) + Y_{62} * (-0.011438) + Y_{63} * (0.050654) + Y_{64} * (0.109477) + Y_{65} * (0.222222) \\ + Y_{66} * (0.307190) + Y_{67} * (0.366013).$$

A.5 Exact weights

A summary of the rescaled moving average weights, $\tilde{W}_j^{(t)}$, that are used in calculating the trend-cycle estimates over the entire series are given in Table 5.

Table 5
Rescaled weights for each month, derived under the cut-and-normalize approach

	$j=t-6$	$j=t-5$	$j=t-4$	$j=t-3$	$j=t-2$	$j=t-1$	$j=t$	$j=t+1$	$j=t+2$	$j=t+3$	$j=t+4$	$j=t+5$	$j=t+6$
$t=1$	0	0	0	0	0	0	$\frac{=(0.224)}{/(0.612)}$	$\frac{=(0.188)}{/(0.612)}$	$\frac{=(0.136)}{/(0.612)}$	$\frac{=(0.067)}{/(0.612)}$	$\frac{=(0.031)}{/(0.612)}$	$\frac{=(-0.007)}{/(0.612)}$	$\frac{=(-0.027)}{/(0.612)}$
$t=2$	0	0	0	0	0	$\frac{=(0.188)}{/(0.8)}$	$\frac{=(0.224)}{/(0.8)}$	$\frac{=(0.188)}{/(0.8)}$	$\frac{=(0.136)}{/(0.8)}$	$\frac{=(0.067)}{/(0.8)}$	$\frac{=(0.031)}{/(0.8)}$	$\frac{=(-0.007)}{/(0.8)}$	$\frac{=(-0.027)}{/(0.8)}$
$t=3$	0	0	0	0	$\frac{=(0.136)}{/(0.936)}$	$\frac{=(0.188)}{/(0.936)}$	$\frac{=(0.224)}{/(0.936)}$	$\frac{=(0.188)}{/(0.936)}$	$\frac{=(0.136)}{/(0.936)}$	$\frac{=(0.067)}{/(0.936)}$	$\frac{=(0.031)}{/(0.936)}$	$\frac{=(-0.007)}{/(0.936)}$	$\frac{=(-0.027)}{/(0.936)}$
$t=4$	0	0	0	$\frac{=(0.067)}{/(1.003)}$	$\frac{=(0.136)}{/(1.003)}$	$\frac{=(0.188)}{/(1.003)}$	$\frac{=(0.224)}{/(1.003)}$	$\frac{=(0.188)}{/(1.003)}$	$\frac{=(0.136)}{/(1.003)}$	$\frac{=(0.067)}{/(1.003)}$	$\frac{=(0.031)}{/(1.003)}$	$\frac{=(-0.007)}{/(1.003)}$	$\frac{=(-0.027)}{/(1.003)}$
$t=5$	0	0	$\frac{=(0.031)}{/(1.034)}$	$\frac{=(0.067)}{/(1.034)}$	$\frac{=(0.136)}{/(1.034)}$	$\frac{=(0.188)}{/(1.034)}$	$\frac{=(0.224)}{/(1.034)}$	$\frac{=(0.188)}{/(1.034)}$	$\frac{=(0.136)}{/(1.034)}$	$\frac{=(0.067)}{/(1.034)}$	$\frac{=(0.031)}{/(1.034)}$	$\frac{=(-0.007)}{/(1.034)}$	$\frac{=(-0.027)}{/(1.034)}$
$t=6$	0	$\frac{=(-0.007)}{/(1.027)}$	$\frac{=(0.031)}{/(1.027)}$	$\frac{=(0.067)}{/(1.027)}$	$\frac{=(0.136)}{/(1.027)}$	$\frac{=(0.188)}{/(1.027)}$	$\frac{=(0.224)}{/(1.027)}$	$\frac{=(0.188)}{/(1.027)}$	$\frac{=(0.136)}{/(1.027)}$	$\frac{=(0.067)}{/(1.027)}$	$\frac{=(0.031)}{/(1.027)}$	$\frac{=(-0.007)}{/(1.027)}$	$\frac{=(-0.027)}{/(1.027)}$
$t=7,...,T-6$	-0.027	-0.007	0.031	0.067	0.136	0.188	0.224	0.188	0.136	0.067	0.031	-0.007	-0.027
$t=T-5$	$\frac{=(-0.027)}{/(1.027)}$	$\frac{=(-0.007)}{/(1.027)}$	$\frac{=(0.031)}{/(1.027)}$	$\frac{=(0.067)}{/(1.027)}$	$\frac{=(0.136)}{/(1.027)}$	$\frac{=(0.188)}{/(1.027)}$	$\frac{=(0.224)}{/(1.027)}$	$\frac{=(0.188)}{/(1.027)}$	$\frac{=(0.136)}{/(1.027)}$	$\frac{=(0.067)}{/(1.027)}$	$\frac{=(0.031)}{/(1.027)}$	$\frac{=(-0.007)}{/(1.027)}$	0
$t=T-4$	$\frac{=(-0.027)}{/(1.034)}$	$\frac{=(-0.007)}{/(1.034)}$	$\frac{=(0.031)}{/(1.034)}$	$\frac{=(0.067)}{/(1.034)}$	$\frac{=(0.136)}{/(1.034)}$	$\frac{=(0.188)}{/(1.034)}$	$\frac{=(0.224)}{/(1.034)}$	$\frac{=(0.188)}{/(1.034)}$	$\frac{=(0.136)}{/(1.034)}$	$\frac{=(0.067)}{/(1.034)}$	$\frac{=(0.031)}{/(1.034)}$	0	0
$t=T-3$	$\frac{=(-0.027)}{/(1.003)}$	$\frac{=(-0.007)}{/(1.003)}$	$\frac{=(0.031)}{/(1.003)}$	$\frac{=(0.067)}{/(1.003)}$	$\frac{=(0.136)}{/(1.003)}$	$\frac{=(0.188)}{/(1.003)}$	$\frac{=(0.224)}{/(1.003)}$	$\frac{=(0.188)}{/(1.003)}$	$\frac{=(0.136)}{/(1.003)}$	$\frac{=(0.067)}{/(1.003)}$	0	0	0
$t=T-2$	$\frac{=(-0.027)}{/(0.936)}$	$\frac{=(-0.007)}{/(0.936)}$	$\frac{=(0.031)}{/(0.936)}$	$\frac{=(0.067)}{/(0.936)}$	$\frac{=(0.136)}{/(0.936)}$	$\frac{=(0.188)}{/(0.936)}$	$\frac{=(0.224)}{/(0.936)}$	$\frac{=(0.188)}{/(0.936)}$	$\frac{=(0.136)}{/(0.936)}$	0	0	0	0
$t=T-1$	$\frac{=(-0.027)}{/(0.8)}$	$\frac{=(-0.007)}{/(0.8)}$	$\frac{=(0.031)}{/(0.8)}$	$\frac{=(0.067)}{/(0.8)}$	$\frac{=(0.136)}{/(0.8)}$	$\frac{=(0.188)}{/(0.8)}$	$\frac{=(0.224)}{/(0.8)}$	$\frac{=(0.188)}{/(0.8)}$	0	0	0	0	0
$t=T$	$\frac{=(-0.027)}{/(0.612)}$	$\frac{=(-0.007)}{/(0.612)}$	$\frac{=(0.031)}{/(0.612)}$	$\frac{=(0.067)}{/(0.612)}$	$\frac{=(0.136)}{/(0.612)}$	$\frac{=(0.188)}{/(0.612)}$	$\frac{=(0.224)}{/(0.612)}$	0	0	0	0	0	0

References

The following references provide more information on the topic of seasonal adjustment, including trend-cycle estimation.

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