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Rogue Transfer & Recycling Transfer Station Index: Synopsis

Northwest Economic Research Center

Portland State
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Rogue Transfer & Recycling

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NeRC

Northwest Economic Research Center
College of Urban and Public Affairs

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Executive Summary

Rogue Transfer and Recycling, LLC ("RTR") is a solid waste and recycling facility that collects and transfers solid waste and recycling materials from the Southern Oregon region. Currently RTR's revenue and expenses are reviewed by Jackson County, Oregon in periodic rate reviews, with rates being adjusted in interim years by applying the annual percentage change in the Consumer Price Index (CPI).

RTR requested that Northwest Economic Research Center (NERC) conduct detailed research and develop a new indicator – based on independent, reliable, and timely data – that more closely tracks RTR's changes in total expenses per ton than the CPI. In response, NERC studied RTR's expenses carefully and developed the Transfer Station Index (TSI), which takes into account the expense structure of RTR. Based on official data made publicly available by the Bureau of Labor Statistics (BLS), the TSI is transparent and easy to calculate. TSI performs modestly better than CPI growth over the past few years, and theoretically will perform better on a year-to-year basis going forward.

TSI Components and Calculation

The sole purpose of the TSI is to provide RTR and its franchisor a more accurate index to use for the annual rate adjustments for the years between rate reviews. Therefore, the TSI must be able to account for the specific structure of RTR's production costs. After a thorough analysis, NERC determined that all of RTR's expenses can be combined into one of four major expense categories. Each of these four components is tracked by an index published by the government and weighted by its 10-year average share of total expenses. The expense categories and relative weight used to calculate the TSI are shown in Table 1.

Table 1 Relative Weights, Expense Categories, and Corresponding Government Indices

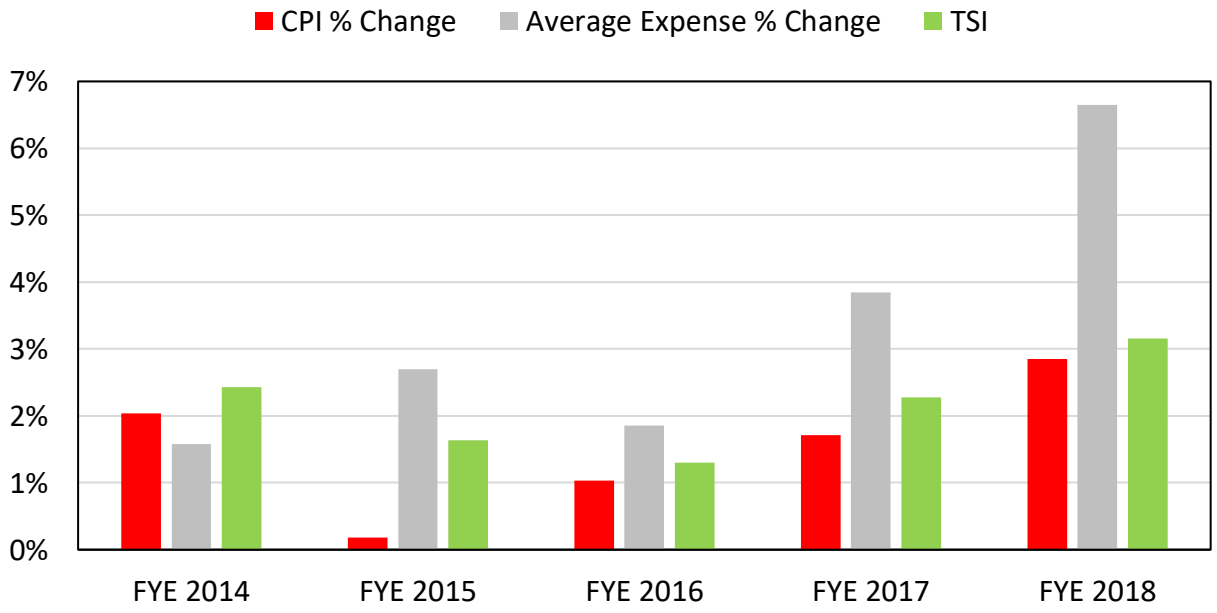
Weight	Category	Governmental Index
2.88%	Vehicle Maintenance	Consumer Price Index for all Urban Consumers: Motor vehicle maintenance and repair (CUSR0000SETD)
10.36%	Equipment	Producer Price Index for Motor Vehicle Body Manufacturing (PCU33613361)
19.45%	Employee Wages	Compensation of Employees, Received: Wage and Salary Disbursements: Private Industries (A132RC1)
67.31%	All Other Expenses	CPI for all Urban Consumers (CPIAUCSL)

Comparing TSI vs CPI over Ten Years

To test the performance and validity of the TSI, we compared the year-over-year performance of TSI vs CPI. RTR's Expense per Ton (Total Expenses/Total Tons) is calculated by dividing total expenses by total tons. The reason for using Expense per Ton is to match the intent of the annual year-over-year rate changes, which apply to the rate per ton. This method compensates for expense changes that are volume-driven, such as disposal which will increase or decrease with the number of tons.

Figure 1 presents changes in the CPI, changes in RTR's Expense per Ton, and the TSI over the past five year-over-year periods, while Figure 2 illustrates the cumulative changes in the CPI, RTR's Expense per Ton, and the TSI over the last five-year period.

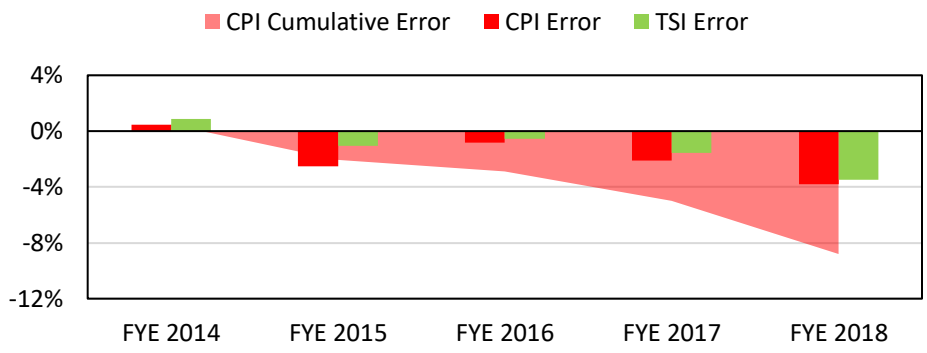
Figure 1 Year to Year Comparison of CPI, Expense per Ton, and TSI



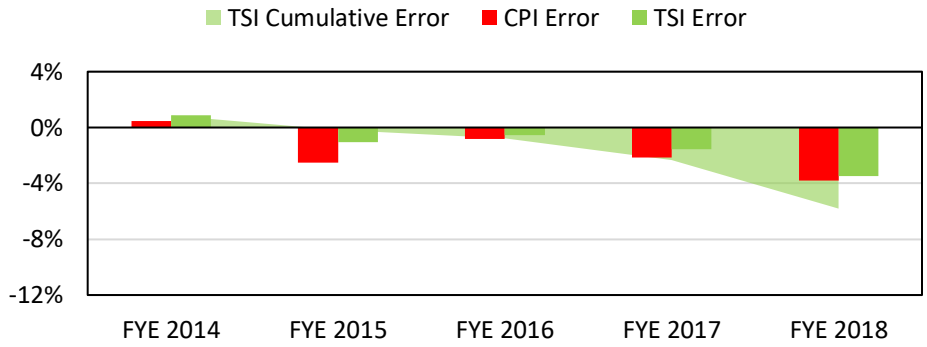
As shown in Figure 1 above, the TSI performs better than the CPI when measured from year-to-year. The TSI is also remarkably more accurate index than CPI when measured over a five-year period (which measures accumulative errors), as shown in Figure 2 on the next page.

Figure 2 Comparing Cumulative CPI, Expense per Ton, and TSI

Panel A



Panel B



The cumulative error using TSI (as seen in panel B) is significantly less than the cumulative error of using CPI (as seen in panel A). Both CPI and TSI result in an under-adjustment over the last five-years, but the cumulative error of TSI is roughly one-half the cumulative error of CPI. This means that in a five-year rate review, the necessary adjustment would theoretically be less using the TSI than CPI between rate reviews.

There is no known index that will account for all expense changes of RTR, or any other transfer station, so no index will be exact. However, the TSI does a better job of adjusting for expense changes than does CPI, even though it still under-adjusted the expenses over the last five-year period.

Implementation Example

Calculating the new service rates is simple: determine the TSI, then adjust the Service Rate Schedule by this percentage, as is currently done for CPI. The TSI weights are based on a ten-year average of RTR spending. The calculation of how the 2017 TSI is accomplished is shown in Figure 3.

Figure 3 Example of Calculating TSI for the Year of 2017

Component	6/1/2016	6/1/2017	% Change	Weight	Weighted % Change	Series
Vehicle Maintenance	275.56	279.29	1.35%	2.88%	0.04%	CUSR0000SETD
Equipment Rentals	237.30	239.50	0.93%	10.36%	0.10%	PCU336211336211
Employee Wages	6739.30	7083.70	5.11%	19.45%	0.99%	A132RC1
All Other Spending	240.07	244.18	1.71%	67.31%	1.15%	CPIAUCSL
TSI					**2.28%**	

In this example, the TSI is 2.28 percent, so the rates would be increased by 2.28 percent.

Conclusion

To avoid the need for large adjustments to rates due to the divergence in changes in the CPI vs changes in RTR's average expenses, NERC has constructed the TSI, the indicator that is able to capture the cost structure of RTR better than CPI. Notwithstanding the above, the TSI may still underestimate the growth of RTR's total expense in any given year. To this end, TSI may replace CPI growth in the yearly rate adjustment process. But with caution, there still is the possibility of a periodic rate adjustment, albeit with an expected lower amount being required.

Northwest Economic Research Center

NERC is under the College of Urban and Public Affairs at Portland State University. The Center focuses on economic research activities to support public policy and private objectives in the State of Oregon. NERC collaborates with other centers and institutes at PSU where economic expertise and analytical methods are required to produce superior research. It specializes in modeling, data management, research, and analytical methods.

NERC was previously engaged by Rogue Disposal and Recycling, a sister company to RTR, to develop a similar index for the hauling operations. The economic modeling principles of the TSI are similar to RDR's SRRI.