

Truflation U.S. Consumer Confidence Index (TruCCI-US)

Methodology

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1. Executive Summary

In the complex landscape of economic analysis, understanding the ebb and flow of an economy's health is of paramount importance. Economic indicators serve as critical compass points, guiding policymakers, business leaders, and retail investors as they navigate the financial environment.

These indicators provide insight into current economic conditions, help anticipate future trends, and inform decisions with far-reaching consequences. Among them, measures of consumer confidence stand out due to their strong influence on consumer spending and overall economic stability.

The primary objective of the Truflation U.S. Consumer Confidence Index (TruCCI-US) is to measure household sentiment regarding both current and future economic conditions. It functions as a leading economic indicator, capturing perceptions of the broader economy, specifically consumers' willingness to spend, expectations for personal financial conditions, and views of the labor market.

Within the landscape of consumer confidence metrics, established benchmarks include the Conference Board Consumer Confidence Index, the University of Michigan Consumer Sentiment Index, the Morning Consult Confidence Index and numerous other measures. The Truflation U.S. Consumer Confidence Index represents a new addition to this ecosystem, offering a comprehensive framework and a distinct perspective on evolving economic dynamics. This methodology document outlines the structure and construction of the index.

Unlike traditional confidence measures that rely on weekly or monthly survey data, the TruCCI-US integrates high-frequency social media sentiment with established institutional survey indicators. Leveraging Natural Language Processing (NLP) and advanced sentiment analysis, the index quantifies public discourse across social platforms and combines it with weighted survey data from leading institutions. The resulting hybrid indicator delivers a more timely, adaptive, and nuanced representation of consumer confidence; well suited for real-time economic monitoring, forecasting, and policy evaluation.

2. Truflation U.S. Consumer Confidence Index Framework

The primary objective of the Truflation U.S. Consumer Confidence Index is to construct a composite, dynamically updated measure of consumer sentiment that:

- Integrates traditional survey-based indicators with high-frequency, real-time data sources.
- Enhances the timeliness, granularity and responsiveness of consumer confidence measurement.
- Serves as a leading indicator for shifts in consumer spending behavior, financial optimism, and macroeconomic expectations.

Positioned as an early, data-driven proxy for consumer mood, complementing the lagging survey-based instruments traditionally relied upon by policymakers, economists and market analysts.

The Truflation U.S. Consumer Confidence Index is calculated as an equally weighted combination of two components; a baseline monthly consumer confidence index derived from established survey-based measures and a social media sentiment component, a daily sentiment derived consumer confidence measure. Each component contributes 50% to the final index value.

Step 1: Data Collection

The two primary data sources utilized:

1. Social media data is collected daily from X using predefined economic and financial keyword filters including but not limited to “U.S. economy,” “inflation,” “jobs,” “interest rates,” “housing market”.
2. Traditional survey data is collected on a weekly or monthly basis from established providers, including the OECD Consumer Confidence Index, University of Michigan Consumer Sentiment Index and the Conference Board Consumer Confidence Index.

Step 2: Data Preprocessing

Textual data from social media is cleaned to remove URLs, mentions, hashtags, emojis, and special characters, standardizing the corpus for sentiment analysis. Each cleaned post is processed using a trained Natural Language Processing (NLP) model that produces:

- A sentiment classification label (positive, neutral, negative)
- A sentiment confidence score $S_i \in [0,1]$, representing sentiment intensity.

Step 3: Sentiment Transformation

Each sentiment score is rescaled into a consumer confidence consistent range of 0-150 using the transformation rules. To align sentiment-derived scores with the conceptual framework of traditional consumer confidence measures, the following mapping functions are applied:

$$CCI_i = \begin{cases} 100 \times (s_i + 0.5), & \text{if sentiment is positive} \\ 100 \times s_i, & \text{if sentiment is neutral} \\ 100 \times (1.5 - s_i), & \text{if sentiment is negative} \end{cases}$$

where $s_i \in [0, 1]$ is the NLP-derived sentiment score for observation i .

This mapping yields:

- Positive sentiment values within the range [100,150]
- Neutral sentiment within [50,100]
- Negative sentiment within [0,50]

This continuous scaling ensures comparability and interpretability.

Step 4: Daily Aggregation

For each day t , the arithmetic mean of all sentiment-derived confidence scores yields the daily sentiment index value, CCI (sentiment, t). To mitigate high-frequency noise, a 7-day moving average is applied to the daily sentiment series.

Step 5: Integration with Baseline CCI

The smoothed daily sentiment score is then combined with the baseline monthly CCI applying an equal weighting of 50% / 50%. The baseline CCI is calculated as a fixed weight average of the three institutional survey indicators, as shown in Exhibit 1.

Exhibit 1 - Weighting of the Baseline Monthly Consumer Confidence Index

Source	Weight
OECD Consumer Confidence Index	11.5%
University of Michigan Consumer Sentiment Index	38.5%
Conference Board Consumer Confidence Index	50.0%

The weighting scheme reflects the relative sample sizes of each survey; approximately 300, 1,000 and 3,000 online respondents in the US respectively.

To prevent any single data provider from exceeding a 50% influence on the baseline index, Truflation rebalances the weight as shown in Exhibit 1.

Adding in the Social Media weights from X, the final weights for the TruCCI-US index is illustrated in Exhibit 2.

Exhibit 2 - Final Weighting of the Truflation US Consumer Confidence Index

Source	Weight
OECD Consumer Confidence Index	5.8%
University of Michigan Consumer Sentiment Index	19.2%
Conference Board Consumer Confidence Index	25.0%
Social Sentiment (X)	50.0%

3. The Output Metrics

The Truflation U.S. Consumer Confidence Index will be updated on a daily basis and produces the following indexes:

1. Truflation U.S. Consumer Confidence Headline Index today
2. Truflation U.S. Consumer Confidence Headline Index a year ago
3. Daily Headline Index year on year percentage change
4. Historical time series

The TruCCI-US index was officially launched on November 12, 2025 with history going back to the launch date.

4. Future Enhancement

1. **Expansion of Social Sources:** Integration of additional social platforms, where available to broaden coverage and improve representativeness.
2. **Enhanced Geographic and Demographic Granularity:** Incorporation of regional and demographic segmentation to better capture sectoral and localized shifts in consumer sentiment.
3. **Advanced Emotion Classification:** Transition from binary positive / negative sentiment to a multidimensional emotion framework, enabling deeper insight into consumer attitudes.

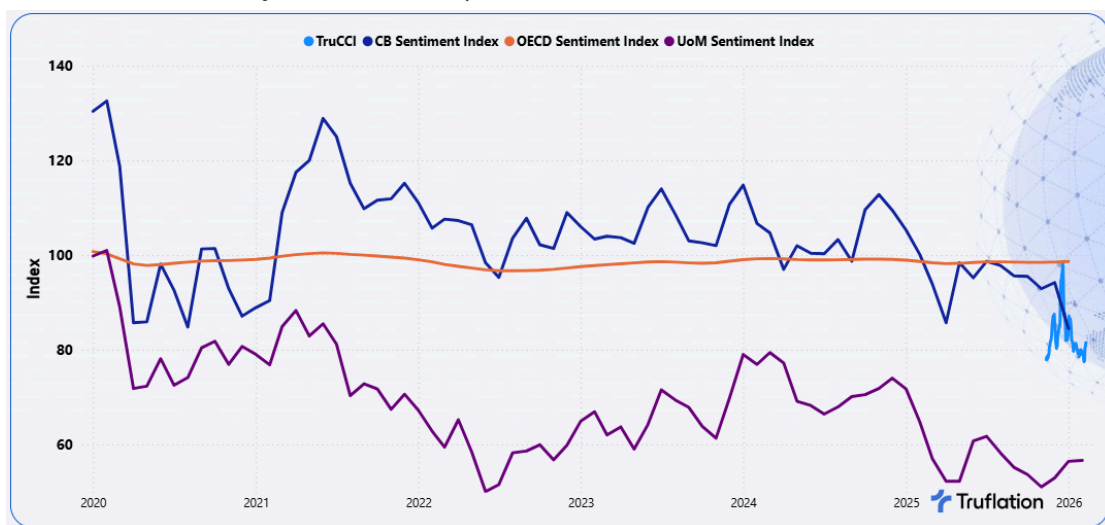
4. **Topic-Specific Economic Sentiment Models:** Development of bespoke sentiment models focused on key economic themes including inflation, employment, wages, housing, credit conditions and cost of living.

5. Truflation U.S. Consumer Confidence Index Benefits

The Truflation U.S. Consumer Confidence Index (TruCCI-US) is a key economic indicator that reflects the overall confidence of consumers in the economic environment. It measures how optimistic or pessimistic households are about current and future economic conditions; sentiment that directly influences spending and saving behavior. Given that consumer spending accounts for a substantial share of economic activity, changes in consumer confidence can have meaningful implications for economic growth. Consumer confidence is widely used as a benchmark for economic performance and is closely followed by policymakers, investors, and analysts when making informed decisions.

Over the past five years, the individual consumer confidence indices have generally moved in a consistent direction, with the notable exception of the OECD Consumer Confidence Index. While the OECD index has trended downward, its movements have been relatively muted compared with the other measures (see Exhibit 3). Beyond these trend comparisons, a key distinction is that Truflation data is updated daily, providing a significantly more timely view of market conditions.

Exhibit 3: Consumer Confidence Index Comparisons



Source: University of Michigan CSI, Conference Board CCI, OECD CCI & Truflation CCI

The Truflation U.S. CCI enhances this traditional framework through the following advantages:

- ***Faster, Real-Time, High-Frequency Insights:*** By combining daily-tracked social media sentiment with established survey data, the index captures rapid shifts in consumer mood driven by economic news, elections, policy announcements and financial shocks.
- ***Better and Higher Quality Data, Broader Coverage:*** Unlike indices based solely on surveys, Truflation analyzes millions of observations across diverse demographic and geographic segments. This broader coverage improves statistical power and enables the early detection of emerging economic concerns. When integrated with survey data, the overall representativeness and quality of the index are significantly enhanced.
- ***Organic & Unprompted Sentiment:*** Social sentiment reflects opinions shared voluntarily and naturally, without prompting respondents to recall past experiences or forecast future conditions. This reduces survey design and recall bias while capturing authentic, real-world reactions.
- ***Expanded Topic Coverage Beyond Standard Surveys:*** Access to social data allows for the analysis of economic themes not typically captured in traditional questionnaires, including inflation-related discussions, job insecurity sentiment, affordability concerns, and public reactions to new economic policies.
- ***Accessible, Actionable Insights:*** The index is available through Truflation's online dashboard, providing individual investors, journalists, and financial advisors with direct, actionable access to high-quality consumer confidence insights.

The inclusion of traditional survey data enhances the index by providing probability-based samples, demographic weighting, and population controls. This strengthens statistical rigor and improves representativeness across the full population. Survey data also delivers a higher signal-to-noise ratio through clearly defined, economically relevant questions, helping to balance potential distortions in social sentiment data. Importantly, it ensures the inclusion of non-digital populations that may be underrepresented on social platforms.

6. Summary

The Truflation U.S. Consumer Confidence Index provides a transparent, data-driven, high-frequency measure of consumer sentiment, combining traditional survey data with real time social media insights. This hybrid approach provides a more responsive and comprehensive view of sentiment than conventional surveys.

7. Version History

Version	Date Released	Notes
1.0	December 16, 2025	Genesis of the Truflation U.S. Consumer Confidence Index