From Surveys to VAT - Smarter Production of Official Statistics

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Abstract.

Statistics Sweden has implemented a revised approach for producing the Monthly Production Value Index (PVI) with the aim of improving efficiency, reducing respondent burden, and strengthening the quality of short-term economic statistics. Previously, preliminary PVI estimates were based on a sample survey with direct data collection, while final estimates relied largely on Value Added Tax (VAT) data. This methodological divergence contributed to revisions between preliminary and final estimates. To increase consistency, VAT data were introduced into preliminary PVI production for the industrial sector in April 2023. The reform substantially reduced respondent burden and administrative workload while maintaining or improving estimate quality. Building on this experience, the application of VAT data monthly has been evaluated for the service sector. Based on project results for 2025, implementation was set for reference month April 2026. The Swedish experience demonstrates how administrative data can be successfully integrated into short-term business statistics while improving coherence, transparency, and sustainability.

Keywords: administrative data, VAT, production index, short term statistics (STS), respondent burden, official statistics.

1. Introduction

National statistical offices face growing demands to provide timely, reliable, and coherent economic indicators while simultaneously reducing respondent burden and production costs. Administrative data sources offer significant potential in this regard, particularly in short term business statistics, where traditional survey-based methods can be resource intensive.

In Sweden, the Monthly Production Value Index (PVI) is a key indicator of short-term economic activity. Historically, preliminary PVI estimates were based on a sample survey with direct data collection from enterprises. Final estimates, however, relied on administrative data covering all small and medium-sized enterprises in the sampling frame, primarily Value Added Tax (VAT) records, combined with direct data collection from all large or complex enterprises, effectively making the PVI a census. This dual system resulted in methodological differences between preliminary and final estimates and, consequently, in revisions that were sometimes difficult to interpret for users.

To address these issues, Statistics Sweden (SCB) initiated a methodological reform centred on expanding the use of VAT data in preliminary estimation.

2. Background and Motivation

The reform was motivated by three main objectives. First, reducing methodological discrepancies between preliminary and final PVI estimates to improve coherence and credibility. Second, lowering respondent burden for enterprises, especially small and medium sized enterprises. Third, modernising statistical production by integrating administrative data already in use for final estimation.

VAT data provide broad coverage of economically active enterprises and are closely aligned with the turnover concept underlying PVI (Lindblom, 2014) . This made VAT data well suited for expanded use in preliminary monthly estimation, provided quality and timeliness requirements could be met.

3. Implementation in the Industrial Sector

The VAT-based preliminary estimation framework was implemented in April 2023 for the industrial sector (NACE B-C). Under this approach:

- VAT data replaced direct survey collection for small and medium-sized enterprises,
- Large and economically important enterprises continued to report turnover directly.

Direct reporting from large enterprises remains necessary due to complex organisational structures, the need for activity-specific turnover information, and the importance of maintaining direct analytical contact (Elezović and Lindblom, 2019).

The transition has streamlined the production process, resulting in fewer follow-ups, fewer extreme values, and a more stable operational workflow. At the same time revisions between preliminary and final estimates remained small or declined.

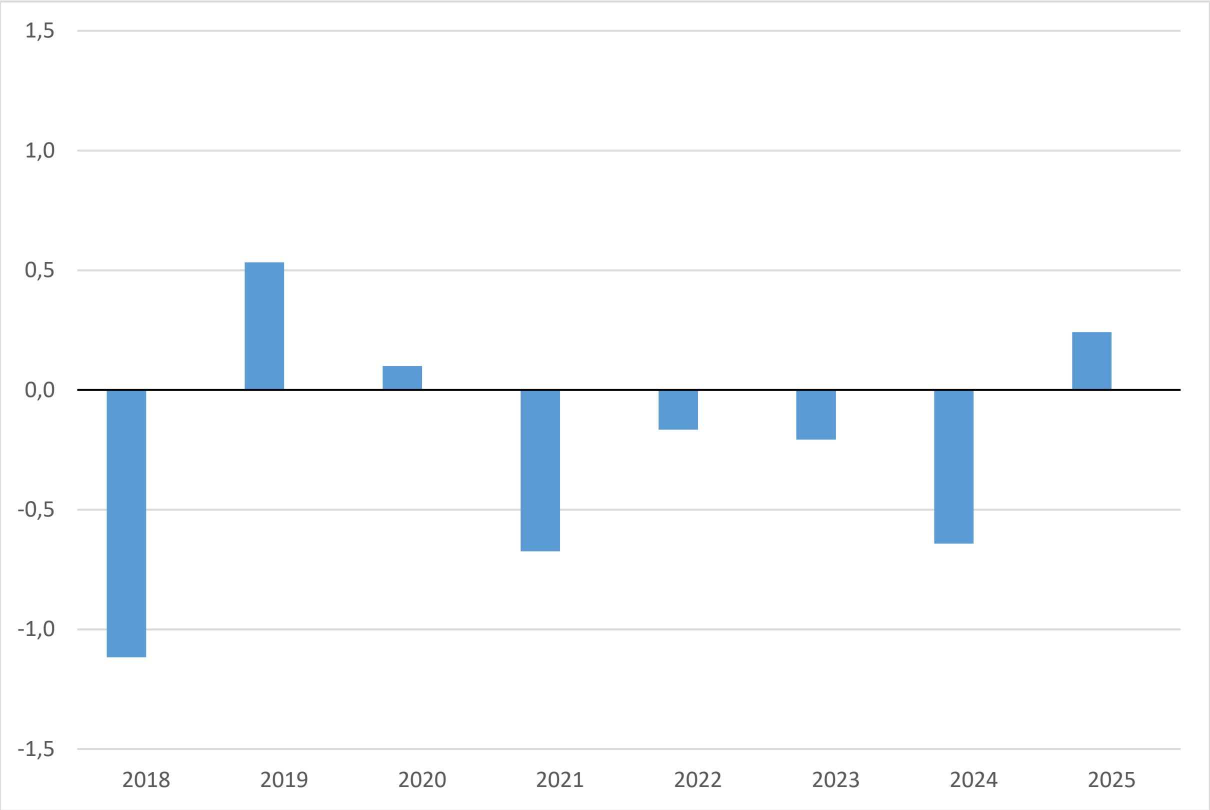
The initial focus on the industrial sector reflected more favourable implementation conditions than in the service sector (NACE E-S). The industrial sector is generally more homogeneous and dominated by larger enterprises that report VAT more frequently, ensuring more timely data. In contrast, the service sector includes a higher share of smaller enterprises that are not obligated to report VAT monthly, as well as industries with substantial VAT-exempt activities. These factors may complicate the production of timely and reliable estimates using VAT data, leading SCB to prioritize the industrial sector initially.

4. Quality Effects and Revisions

Evaluations show that preliminary PVI estimates based on VAT data perform at least as well as survey-based estimates. Increased methodological alignment between preliminary and final estimation has contributed to reduced avoidable revisions, enhancing consistency across the statistical production process.

These results demonstrate that improved efficiency can be achieved without compromising the accuracy or reliability of the PVI (see Figure 1).

Figure 1. Industry (NACE B-C), Mean revision between first publication and publication three months later on calendar adjusted annual development, percentage points



5. Monthly Use of VAT Data in the Service Sector

5.1 Project Based Evaluation

Using the same approach applied in the industrial sector, a dedicated project has explored the monthly use of VAT data in the service sector. Within this framework, experimental estimates based on VAT data were produced for the period from January to December 2025.

The results were analysed, validated, and evaluated through comparisons with the existing survey-based approach. The evaluation of estimates based on VAT data compared to the survey-based approach was carried out using rule-based assessments at the industry level, providing a systematic framework for identifying strengths and limitations across domains.

Overall, the findings indicate satisfactory performance despite greater structural heterogeneity in service industries. More detailed documentation will be provided in the project's final report, scheduled for completion after summer 2026.

5.2 Implementation

VAT based monthly estimation in the service sector was implemented for reference month April 2026, with the first statistical release on 10 June 2026.

6. Consequences of Introducing VAT-Based Monthly Estimation

6.1 Affected Statistical Products

The introduction of VAT-based monthly estimation affects survey design and reporting in Production Value Index, Industrial Production Index, Orders and Turnover in Industry, Service Production Index, Turnover in the Service Sector, Retail Trade Index.

The methodological changes and their consequences have been presented to the Scientific Advisory Board and the User Council for Economic Statistics at Statistics Sweden, where reception was positive, and no objections were raised.

6.2 Quality Considerations

Overall improvement in monthly estimate quality is anticipated. The transition to full enumeration eliminates sampling error, as estimates are based on all enterprises in the frame. Issues related to extreme values are expected to diminish because expansion factors are close to one.

At the same time, the relative importance of non-sampling errors may increase. These errors are difficult to quantify and may include model errors when distributing quarterly VAT declarations across months, and imperfect modelling of turnover for the current reference period.

Measurement errors and imputation-related errors for missing data are not expected to increase materially.

6.3 Respondent Burden Effects

The respondent burden in the industrial sector decreased by approximately 65 percent, which corresponds to about 1,400 enterprises no longer being required to report turnover monthly to SCB. In the service sector, nearly 4,000 enterprises will no longer be required to report turnover monthly, corresponding to a reduction in respondent burden of approximately 55 percent. Reduced direct collection is also expected to lower measurement error, validation workload, and printing and postage costs.

6.4 Limitations and Exceptions

A potential risk associated with increased reliance on VAT data is future regulatory change in VAT reporting practices. At present, no such changes are expected.

A small number of industries will transition from monthly to quarterly publication due to insufficient quality in early VAT-based monthly estimates. These industries have limited impact on higher-level aggregates.

In some service industries with a high share of VAT-exempt activity, VAT-based estimation is not applicable. These include:

- Real estate activities (NACE 68),
- Education, Human health and social work activities (NACE 85–88),

- Gambling and betting activities (NACE 92).

In these cases, the existing survey-based approach will remain in place.

7. Methodological Coherence and Transparency

The VAT-based estimation framework enables monthly estimates to be produced using a consistent methodology at every calculation occasion. This represents a clear improvement relative to the previous system, in which estimation procedures differed depending on whether sample-based or census-based calculations were used. The harmonised framework improves transparency, interpretability, and methodological robustness.

8. Conclusions

The systematic integration of VAT data into preliminary monthly estimation represents a major step toward more efficient and sustainable short-term business statistics in Sweden. The approach has reduced respondent burden, improved production efficiency, and maintained or enhanced estimate quality.

The recent implementation in the service sector further demonstrates the scalability of the approach despite greater structural complexity. Overall, the Swedish experience provides valuable insights for national statistical offices seeking to modernise their statistical systems through increased use of administrative data.

9. Future Work

Further work on the use of VAT data will continue, with a particular focus on evaluating whether VAT information can replace direct data collection for additional enterprises that are still subject to reporting turnover to SCB. If this proves feasible, respondent burden can be reduced even further.

In addition, efforts will be made to review and improve imputation methods for cases where VAT data are missing. Enhancing these methods is expected to strengthen the robustness and overall quality of the estimates

10. List of References

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