

# USING ALTERNATIVE DATA FOR GERMAN TURNOVER INDICATORS IN THE SERVICE SECTOR

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## Introduction

In 2007 Germany switched from a traditional 7.5 % survey to a multiple-source mixed mode system („Mixmodell“) in producing quarterly turnover indices in the service sector. This method is output-oriented. It combines survey data for

large enterprises with administrative data (source: turnover tax prepayment notice). The introduction of this method was uncharted waters in terms of methodology and also a challenge with regard to organisation and processing.

This poster illustrates the „Mixmodell“ and the German experiences regarding the implementation and performance of this multiple-source mixed mode method.

## Framework and Objectives

### Framework

- ▶ Strong user interest because of the sector's growing importance
- ▶ Dynamic and heterogeneous markets with many small/medium-sized enterprises

### Objectives

- ▶ (1) Produce high quality short-term data for the service sector (at least maintain quality level and keep delivery deadline of former survey)
- ▶ (2) Relieve small and medium-sized enterprises from administrative burden and save cost for German Statistical Offices

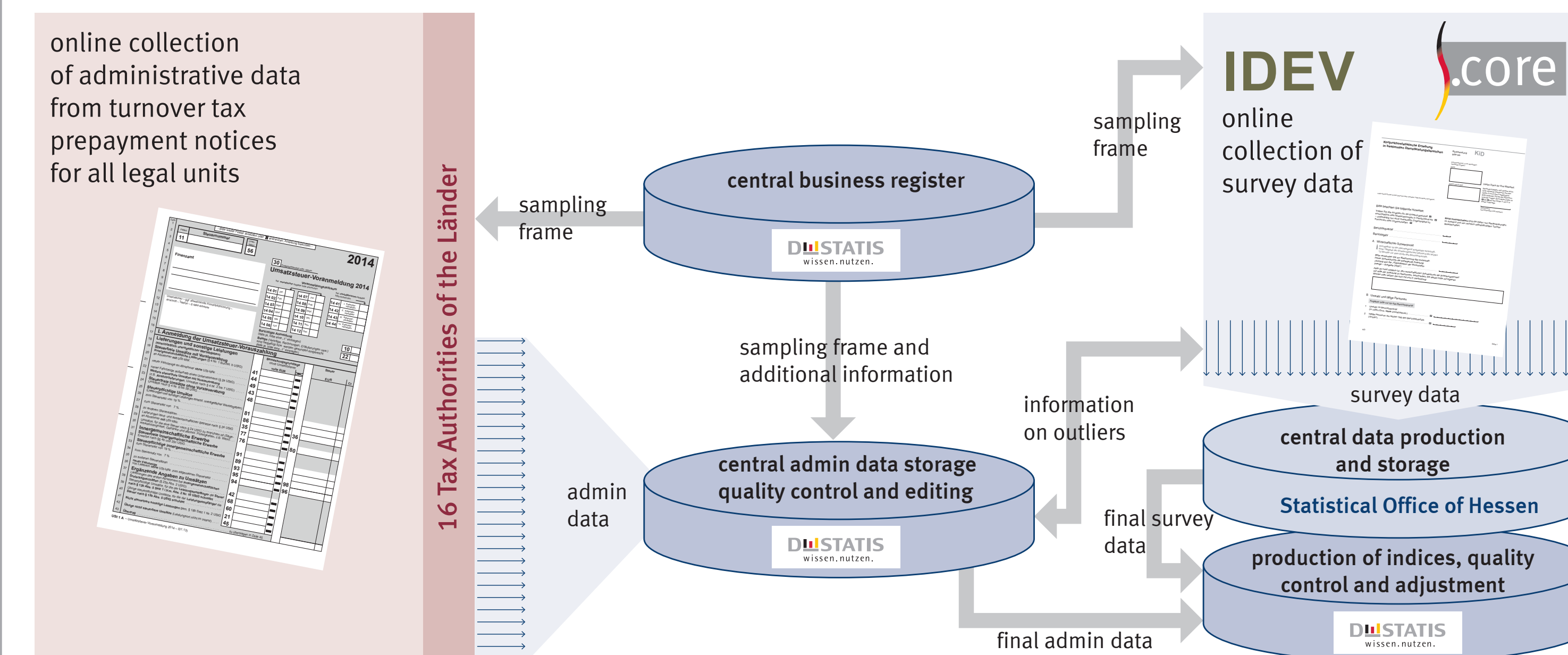
## Challenges

- ▶ Definitions differing between administrative and survey data:
  - Observation units defined differently (e. g. tax groups)
  - Turnover variable defined differently (tax purposes)
- ▶ Cases of incorrect classification of economic activity in administrative data
- ▶ Implausible administrative data caused by:
  - „Estimation“-like character of tax prepayment depending on a unit's financial situation
  - Data errors
- ▶ Matching problems among the units => danger of double counting
- ▶ Lack of both timeliness and completeness of the tax data (dependency)
- ▶ Very short time slot (ca. five days) for combining the data, quality checking, adjustment processes and delivery of the time series
- ▶ Federalism: 16 Tax Authorities, Statistical Offices of the Länder + Destatis involved

## Quality improvement

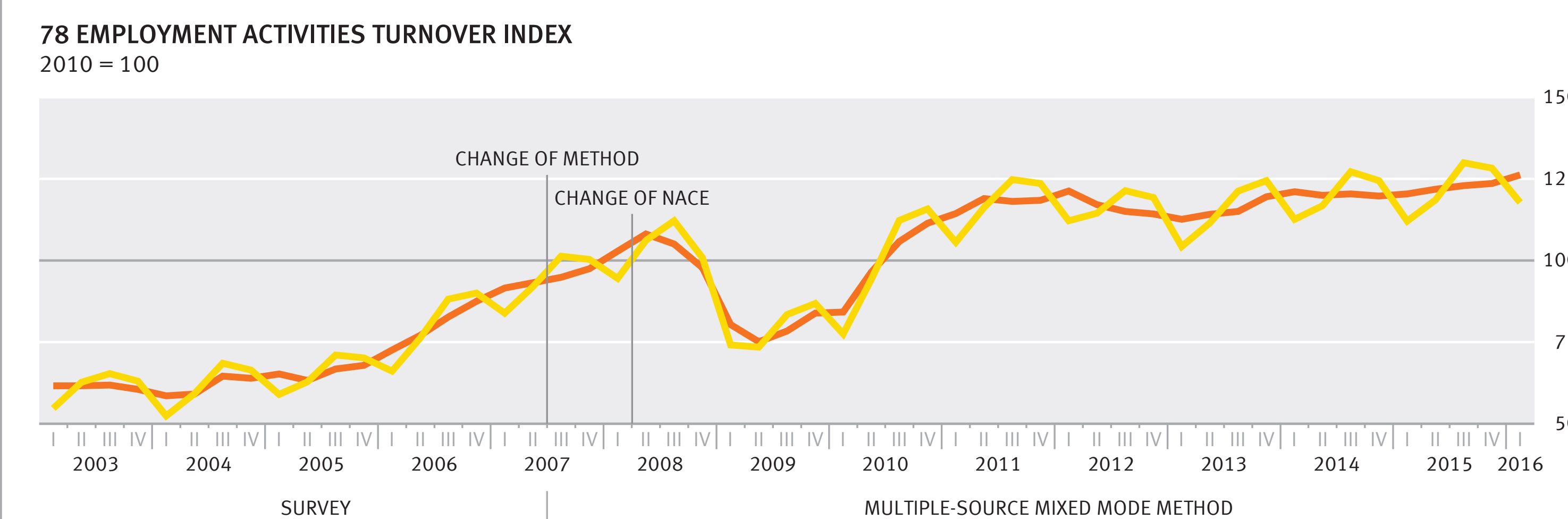
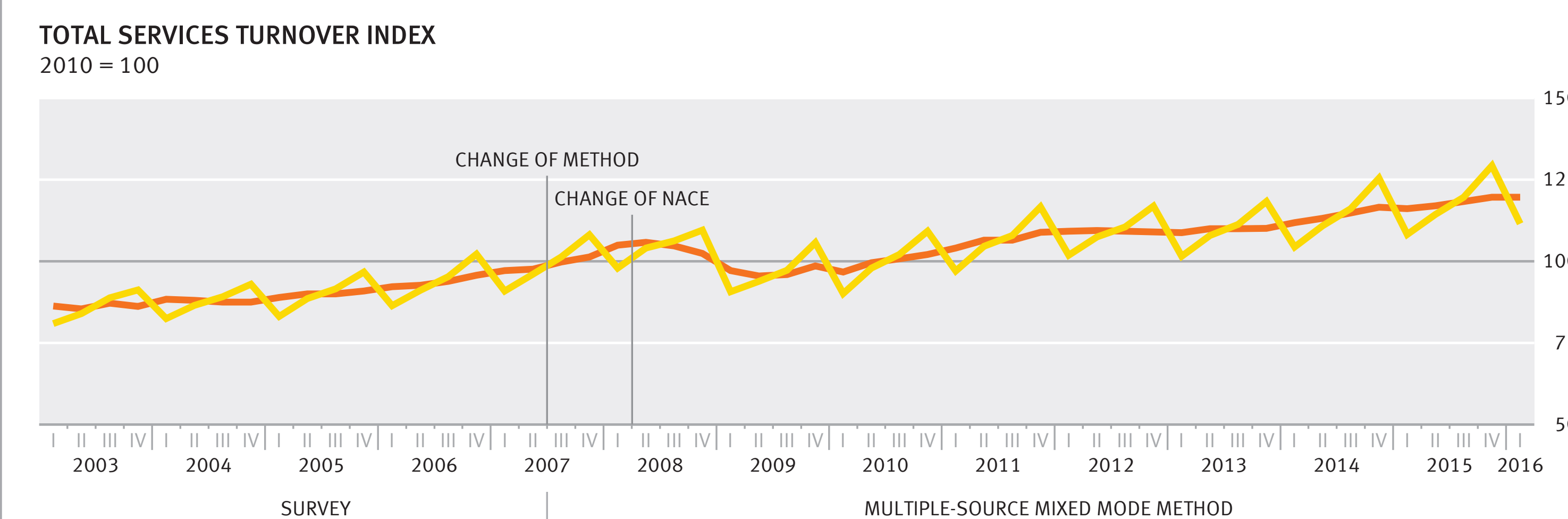
- ▶ System tailored to output requirements; no absolute figures published, only indices and rates of change
- ▶ Data combination on variable level (not on unit level)
- ▶ Pairing principle: only use units with data from the same source for both current and last quarter
- ▶ Checks of completeness and plausibility in both data sources, estimates for missing data
- ▶ Improving the quality of administrative data by means of the business register (e. g. recoding economic activity, matching, distributing tax-group turnover)
- ▶ Outlier checking in both data sources and automated/manual correction of implausible data
- ▶ Two regular revisions for each quarter

## Data production process using the „Mixmodell“



ADMIN DATA + SURVEY DATA for units ≥ 250 persons employed and/or ≥ 15 million € of turnover = COMPLETE COUNT

## Results



2016-S-004

## Conclusions

### Objective (1): Quality ✓

- ▶ Results of very good quality - timely, reliable and consistent with low level of revisions! Stable seasonal figure. No break in series compared to former survey.
- ▶ 40 % to 60 % of turnover covered by primary survey
- ▶ Full count of the population (in comparison to former 7.5 % sample)
- ▶ Large enterprises are more disciplined in reporting (more timely, better quality), Statistical Offices have more capacity for quality checking
- ▶ Complex method with tight timetable involves risks regarding the delivery of timely, high quality data
- ▶ Problems with administrative data quality, completeness and timeliness

### Objective (2): Reduction of Cost and Burden ✓

- ▶ Significant reduction of cost for the Länder (Statistical Offices), but higher cost for Destatis (processing and IT) and the Tax Authorities
- ▶ Significant reduction of administrative burden on small and medium-sized enterprises

### Cost and Burden

Turnover Index in Services	Now (quarterly)			Under FRIBS (enlarged scope & monthly)		
	Units in population	Units surveyed	No. of questionnaires	Units in population	Units surveyed	No. of questionnaires
„Mixmodell“	1,000,000	6,000	24,000	1,500,000	7,300	87,600
Sample Survey (7.5%)	1,000,000	75,000	300,000	1,500,000	112,500	1,350,000

## Outlook

The „Mixmodell“ has stood the test in services so that

- ▶ ... it has also been introduced in other German short term statistics (e. g. trade)
- ▶ ... it is expected to be used for the future monthly services turnover index
- ▶ ... it will be the basis for the new index of service production

### Open issues:

- ▶ Permanent improvement of the quality of administrative data and the data production process (based on enhanced European and German legislation)
- ▶ Development of quality indicators for administrative data and mixed data

### Further Information

Data: <https://www-genesis.destatis.de/genesis/online>  
 General Information: <https://www.destatis.de/EN/Homepage.html>  
 Methodological Descriptions:  
 – Fischer, Hanna/Oertel, Jutta (2009): Konjunkturindikatoren im Dienstleistungsbereich: Das Mixmodell in der Praxis, in Wirtschaft und Statistik, Wiesbaden, WiSta 03/2009, S. 232 ff.  
 – Lorenz, Robin (2010): The integrated system of editing administrative data for STS in Germany, ESSnet Administrative data – Seminar in Rome  
 – Oertel, Jutta: Turnover and output measurement for "organisation of conventions and trade shows" in Germany; 30th Meeting of the Voorburg Group on Service Statistics (UN city group) 2015, Sydney