

The ‘Service Sector Business Survey’ (SSBS) collected by the Centre for European Economic Research and Creditreform

By Ulrich Kaiser*

1. Introduction

The statistical recording of business-related services is still somewhat inversely related to their overall economic importance and their marked economic growth in recent years (Janz and Licht 1999). Although the data situation will improve within the next few years, since the provision of a service sector statistic became law in fall 2000, up-to-date information on the current state of the economic development in the business-related services sector will remain scarce. The ‘Service Sector Business Survey’ (SSBS) was originally developed in order to provide economic policy and supply the media with recent information on the economic development in the business-related services sector. Recently, the SSBS has also been used to study structural changes in the business-related services sector from an economic research perspective.

The SSBS is collected by the Centre for European Economic Research (Zentrum für Europäische Wirtschaftsforschung, ZEW) in cooperation with Germany’s largest credit rating agency, Creditreform, since the second quarter of 1994.¹ It is constructed as a panel data set. Roughly 1,000 firms take part in the quarterly survey. It is well established in the media and empirical researchers have recently become more interested in working with the collected data.

The SSBS and the Mannheim Innovation Panel in the Service Sector (MIP-S), thoroughly described by Janz et al. (2001), are often assumed to be similar or even identical data sets. They are, however, not related to one another. In fact, the only similarity between both surveys is that they are con-

* I am indebted to the German Science Foundation (Deutsche Forschungsgemeinschaft, DFG) for partially funding this paper within the ‘Industrial Economics and Input Markets’ program under grants PF331 / 1-1,1-2,1-3 and PO 375 / 3-1,3-2,3-3.

¹ To call up further information on these institutions, refer to the Internet at <http://www.zew.de> and <http://www.creditreform.de> respectively.

cerned with the German service sector. There also is no overlap in the firms included in the samples.

This paper refers to the survey methodology in Section 2, describes the information being collected in Section 3 and summarizes recent research on the basis of the SSBS data in Section 4. The final section informs about data availability.

Table 1
Sectors included in the SSBS and their industrial classification code

Sector	NACE-Rev. I code
Computers and related activities	72100, 72201 – 02, 72301 – 04, 72601 – 02, 72400
Accounting & book-keeping, tax consultancy	74123, 74127, 74121 – 22
Management Consultancy	74131 – 32, 74141 – 42
Architectural activities	74201 – 04
Engineering activities	74205 – 09, 74301 – 04
Advertising	74844, 74401 – 02
Renting of automobiles & transport equipment	71100, 71210
Renting of other machinery & equipment	45500, 71320, 71330
Cargo handling and storage	63121, 63403, 63401
Sewage & refuse disposal	90001 – 90007

2. Survey Methodology

Since no broadly accepted definition of ‘business-related services’ exists, ZEW and Creditreform define them by enumeration, following a convention of Miles (1993). Table 1 lists the sectors included in the SSBS along with their industrial classification code.

ZEW and Creditreform send out a single page questionnaire every three months to about 4,000 firms belonging to the ten sectors listed in Table 1. The survey is a stratified random sample, stratified with respect to the ten sectors, five size classes (two for East and three for West Germany), as well as with respect to regional affiliation (East/ West Germany). The stratified target population thus consists of 50 cells.

A sample refreshment takes place on an annual basis. Firms which have not taken part in the survey more than six times in a row are removed from the panel. One marked sample size enlargement took place in the second

quarter of 1997, where it was increased from 2,000 to 4,500 firms, since the realized sample size had been constantly decreasing since the second quarter of 1995. First survey results of the pilot study and a description of the original sample survey can be found in Saebetzki (1994). Current survey results are released in the media and in ZEW publications.²

The ZEW/Creditreform business survey starts three weeks prior to the end of a quarter. Questionnaires and a personal letter to the prospective survey respondent are sent out by mail. The questionnaires are mostly returned to the ZEW by fax. After two weeks, those firms which have not replied are sent a reminder. Altogether, the response rate amounts to about 30 percent. As a thank you for filling out the questionnaire, the participating firms receive an analysis in the form of a four page report containing the main findings of the survey. In addition, they can access further information over the Internet.

The questionnaire is divided into two parts. In the first part the firms are requested to indicate whether their sales, prices, demand, returns and number of employees have, in the respective previous quarter, either decreased, stayed the same, or increased. Moreover, they are asked to give an assessment for the upcoming quarter. The second part of the survey is dedicated to present-day economic and political issues. Issues cover (i) training, apprenticeship training and skill mix, (ii) diffusion of information and communication technologies, (iii) current and expected development of the demand for heterogeneous labor and (iv) adjustment to demand fluctuations. These questions are repeated annually. Since the first quarter of 2001, the sampled firms also have the option of filling out the questionnaire online. Eight percent of the participants actually used the online option. Kaiser (2001) finds that online and paper & pencil – respondents who returned the questionnaire either by mail or by fax – significantly differ from one another with respect to their sales assessments. Moreover, item-nonresponse is more widespread among online participants.

Due to the fact that no official business register is available in Germany, the sample is drawn from the "MARKUS" firm data base made available to the ZEW by the Creditreform. It is a CD-Rom containing information on the entire set of firms found in the registers of Creditreform. Besides the industrial classification code and number of employees, the data base contains firm sales, firm addresses and, in most cases, a contact person. Although this data base does not actually cover the entire population of firms in Ger-

² The ZEW offers to send current survey results to an interested public. Send an email to konjunkturumfrage@zew.de to receive copies. The website <http://www.zew.de/de/publikationen/branchenreportdienstleistungen.php3> also contains some information concerning the SSBS.

many, the MARKUS data base is the most complete sampling frame available for Germany (Licht and Stahl, 1995). The SSBS survey methodology is described in greater detail by Kaiser et al. (2000). Kaiser (2001) deals with unit–nonresponse and item–nonresponse, finding that firm size, sector affiliation and affiliation to East Germany significantly affect either.

Although the SSBS is constructed as a panel data set, the use of panel data information is effectively hampered by two problems: First, since the second set of questions often requires that the respondent give metric information, which is difficult to provide, item – nonresponse is a problem in the second part of the questionnaire. Firm size, sector affiliation and affiliation to East Germany cannot, however, explain item–nonresponse here. Secondly the SSBS is a versatile data set. Few firms regularly take part in the survey. Only 28 firms have participated in each of the SSBS-waves (28 to date). The mean number of surveys in which 3 firms within the sample participated is 4.5 and the median is 1. The 25 and 75 quantiles are 0 and 15 respectively. Since sample refreshments take place and a marked increase in sample size occurred in the second quarter of 1997 firms however, had an unequal chance to take part in the SSBS. The ratio of the number of times a firm took part in the survey to the number of times it is included in the sample therefore might be more informative with respect to firm response behavior. Its mean is 0.3 with the 25, 50 and 75 percent quantiles being 0, 0.2 and 0.6 respectively.

3. Surveyed information

The survey's core is its first part, which is repeated quarterly by the survey participants. Information includes firms' assessment of current and expected development of (i) sales, (ii) prices, (iii) demand, (iv) profit and (v) employment. Item – nonresponse very rarely occurs in the first part of the questionnaire.

While the first set of questions does not change quarterly, the second set does. With the exception of the second quarter, the questions contained in the second part of the questionnaire are, however, repeated annually. Table 2 briefly summarizes the general topics and the questionnaire contents in each quarter.

4. Recent research

Economic research carried out using the SSBS data can be divided into three main areas: (i) survey methodology, (ii) business cycle research and (iii) labor economics and firm performance.³

Survey methodology: Kaiser and Spitz (2000) suggest an econometric technique to quantify ordinal variables and apply it to SSBS data. The effects of political announcements on firms' answering patterns are analyzed by Kaiser (1998). He investigates the impact of discussions about the EMU starting date on firms' expectations concerning the eventual Euro-introduction, finding highly significant effects.

Business cycle research: The lead/lag-relationship between manufacturing industries and business-related services is studied by Kaiser and Voß (2000). While it is usually assumed that services lag behind manufacturing, the authors find mixed evidence. Depending on the choice of variables representing economic activity in manufacturing industries, they find either a contemporaneous relationship or that business-related services in fact lag behind manufacturing in the business cycle. A business climate indicator for the business-related services sector is developed by Kaiser and Buscher (1999). This indicator, the 'Service Sentiment Indicator' has been developed for and is distributed by the news agencies 'vereinigte wirtschaftsdienste' and 'Bloomberg'.

Labor economics and firm performance: In a contribution to the current debate on the effects of ICTs on labor productivity, Bertsek and Kaiser (2001) investigate the joint effects of information- and communication technologies (ICTs) and workplace reorganization on labor productivity, finding insignificant differences in labor productivity between firms with and without workplace reorganization. They also show that the partial output productivities of ICT and non-ICT are insignificantly different from one another. The effects of collective wage agreements on the adjustment of workers and worker hours is investigated by Kaiser and Pfeiffer (2001). They demonstrate that collective wage agreements decrease firms' propensity to hire additional labor when faced by positive demand shocks, while they do not significantly affect their decision to release labor in case of a negative demand shock. Finally, Nguyen van et al. (2000) analyze the determinants of firm performance within a dynamic panel econometric framework. They find that effects of firm size, firm age and legal status depend very much on the initial state of economic health.

³ In addition, Kaiser and Stirböck (1999) study the effects of the introduction of the Euro on firms' export behavior.

Table 2

General topics and questionnaire contents*First quarter:**General topic:* training, apprenticeship training and skill mix*Available information:* # of apprentices, training targets, timing of training, skill mix, PC-endowment*Asked in waves:* 8, 12, 16, 20, 24, 28*Second quarter:**General topic:* diffusion of information- and communication technologies*Available information:* Internet access, e-commerce, e-mail access*Asked in waves:* 25*Third quarter:**General topic:* current and expected development of demand for heterogeneous labor*Available information:* ordinal assessment of changes in skill mix, export activity, innovative activity*Asked in waves:* 6, 10, 14, 18, 22*Fourth quarter:**General topic:* adjustment to demand fluctuations*Available information:* extent to which outsourcing, cooperation, part-time work, free-lance work, adjustment of working-hours etc. are used to cope with demand fluctuations*Asked in waves:* 11, 15, 19, 23, 27 5**5. Data access**

The ZEW is interested in sharing the data set with other researchers. Public use files – for scientific use only – are available upon request. The request needs to contain a sketch of the research project.

In order to avoid the identification of individual firms, metric information is provided in shares only, e.g. the number of high skilled workers is provided as a share of total employees. Researchers having experience with the public use files are invited to work with the original data at the ZEW.

Data on selected sectors are provided for academic teaching. SBSS data material has been recently used for courses in applied econometrics at the University of Mannheim (Professor Bernd Fitzenberger, Ph.D.) and at the University of Munich (Ulrich Kaiser).

All data requests should be sent to konjunkturumfrage@zew.de.

References⁴

- Bertschek, I. / Kaiser, U. (2001), Productivity Effects of Organizational Change: Microeconomic Evidence, ZEW discussion paper 01-32.
- Janz, N. / Ebling, G. / Gottschalk, S. / Niggemann, H. (2000), The Mannheim Innovation Panels (MIP and MIP-S) of the Centre for European Economic Research, Schmollers Jahrbuch: Zeitschrift für Wirtschafts- und Sozialwissenschaften / Journal of Applied Social Science Studies 121: 123 – 129.
- Janz, N. / Licht, G. (1999), Innovationsaktivitäten in der deutschen Wirtschaft, ZEW Wirtschaftsanalysen / Schriftenreihe des ZEW (41), Nomos-Verlag, Baden-Baden.
- Kaiser, U. (1998), Die Wirkung wirtschaftspolitischer Ereignisse auf Erwartungen über den Starttermin der Europäischen Währungsunion, Ifostudies 2 / 1998: 103 – 120.
- (2001), Differences in Response Patterns in a Mixed Mode Online/ Paper & Pencil Business Survey, ZEW discussion paper 01-50.
- Kaiser, U. / Buscher, H. S. (1999), The Service Sentiment Indicator – A business Climate Indicator for the German Business-related Services Sector, Center of Finance and Econometrics discussion paper 99 / 06.
- Kaiser, U. / Kreuter, M. / Niggemann, H. (2000), The ZEW / Creditreform Business Survey in the Businessrelated Services Sector: Sampling Frame, Stratification, Expansion and Results, ZEW discussion paper 00-22.
- Kaiser, U. / Pfeiffer, F. (2001), Wage Agreements and Work Time Flexibility: Empirical Evidence for German Business-related Services, LABOUR: Review of Labour Economics and Industrial Relations 15(2): 317 – 341.
- Kaiser, U. / Spitz, A. (2000), Quantification of Qualitative Data Using Ordered Probit Models with an Application to a Business Survey in the German Service Sector, ZEW discussion paper 0058.
- Kaiser, U. / Stirböck, C. (1999), The Impact of the Introduction of the Euro on Firms' Expectations Concerning Export Behavior, Product Innovation and Foreign Competition, *interconomics* 34(3): 107 – 115.
- Kaiser, U. / Voß, K. (2000), On the Lead / Lag Relationship Between Manufacturing and Services in the Business Cycle, *Ifo-Studies* 2 / 2000: 161 – 176.
- Licht, G. / Stahl, H. (1994), Enterprise Panels on Credit Rating Data, Techniques and Uses of Enterprise Panels, Proceedings of the first Eurostat international workshop on techniques of enterprise panels: 163 – 177.
- Miles, I. (1993), Services in the New Industrial Economy, *Futures*, July / August: 653 – 672.
- Nguyen van, P. / Kaiser, U. / Laisney, F. (2000), The Performance of German Firms in the Business-Related Service Sectors, ZEW discussion paper 00-32.
- Saebetzki, A. (1994), Die ZEW-Umfrage bei Dienstleistungsunternehmen: Panelaufbau und erste Ergebnisse, ZEW Dokumentation 94 – 05. 8

⁴ Note that the ZEW discussion paper are available online at <http://www.zew.de/de/publikationen/wissenschaftlichepapers.php3#discussionpapers>.