

European Data Watch

This section will offer descriptions as well as discussions of data sources that may be of interest to social scientists engaged in empirical research or teaching courses that include empirical investigations performed by students. The purpose is to describe the information in the data source, to give examples of questions tackled with the data and to tell how to access the data for research and teaching. We will start with data from German speaking countries that allow international comparative research. While most of the data will be at the micro level (individuals, households, or firms), more aggregate data and meta data (for regions, industries, or nations) will be included, too. Suggestions for data sources to be described in future columns (or comments on past columns) should be send to: Joachim Wagner, University of Lueneburg, Institute of Economics, Campus 4.210, 21332 Lueneburg, Germany, or e-mailed to wagner@uni-lueneburg.de.

Cost Structure Surveys for Germany

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1. Introduction

Information about the cost structures of companies is of central significance for carrying out empirical economic analyses. One of the most important sources of macroeconomic analyses, the German national accounting system, requires quantitative details about the cost structure in order to establish a consistency between the source of income and income distribution inter alia. Accordingly, input-output calculations can scarcely be carried out without information about the cost structures of companies. In microeconomic analyses, cost structures of companies play an important role in the evaluation of corporate strategies. In particular, they are required in order to acquire evidence about the relationship between factor allocation and company success.

For many decades, official statistics in Germany and cost structure surveys in the various sectors of the economy were predominantly based on the Law

on Cost Structure Statistics. The introduction of the European regulation concerning structural business statistics in 1999 brought about extensive changes in this field of statistics. Thus the surveys in wholesale and retail trade, in the craft trades and in the catering trade, as well as those in the service sector such as transport and communication, real estate and housing, letting of movable property and other services provided by companies are now carried out as structure surveys on the basis of various statistical legal foundations.

The first thing to be emphasised here is the German Law on Business Services Statistics of 19 December 2002 that made it possible to close an important information gap concerning business activities in the expanding service sector. Furthermore, the Law on Statistics in Production Industries, which as of 2001 require a structure survey of companies in the manufacturing sector and the construction industry with fewer than 20 employees, an area previously covered by cost structure statistics in the craft trades only.

These structure surveys are always carried out as an annual survey with a legal obligation to provide information and a considerably shorter catalogue of characteristics as compared to previous cost structure surveys. The characteristics investigated are, however, still in accordance with the requirements of the national accounting system and, in addition, they also fulfil the requirements of the EU regulation on cost structures. It is only in some health professions, in the entertainment industry and for personal services that cost structure statistics are still carried out in accordance with the Law on Cost Structure Statistics as surveys conducted every few years but still with a legal obligation to provide information.

The cost structure surveys in the producing sector, consisting of the surveys in the subsectors of mining and quarrying, manufacturing, power and water supply and the construction industry, were based on a logical, integrable concept even before the introduction of the EU regulation on cost structures. They also had to be adapted in 1999 to the requirements of the EU regulation on cost structures, but the changes were restricted to a slight modification of the relevant catalogue of questions.

What is particularly beneficial from the viewpoint of economic analyses are surveys where the companies are obliged to provide information by law. For many years, companies in the manufacturing, mining and quarrying sector have been affected in particular by the obligation to provide information, in so far as certain criteria apply to them. Hence, the part of the economy covered by the survey is almost 40% of the net production of all companies in West Germany in the mid-1980s. Even in 2000, a good quarter of companies' net production in all Germany was accounted for by this survey. Since the companies concerned are also questioned in longitudinal dimension, this survey opens up a variety of opportunities for microeconomic evaluations based on

panel data. Hence, this central survey in the manufacturing sector (KSE-VG) is to be examined here in more detail.

2. The cost structure survey in the manufacturing sector

The survey is carried out annually as a representative random sample survey of around 18,000 companies in the manufacturing sector as well as in mining and quarrying conducted centrally by the Federal Statistical Office in Wiesbaden. The legal basis for the cost structure survey for the manufacturing sector (KSE-VG) is the Law on Statistics in Production Industries in the version of 21 March 2002 (Federal Law Gazette I, p. 1181). The obligation to provide information ensues from Section 9 of the Law on Statistics in Production Industries and Article 6, Para. 2 of the EC Regulation no. 58/97 in connection with Articles 15 and 18 of the Federal Statistics Law.

The results of the investigation provide important information as a basis for economic policy at national and international level. They are also entered into the European statistical system. Thus, within the framework of national and international comparisons, the KSE-VG provides fundamental indicators for longer term examination and assessment of the economic situation in the individual branches of industry (Möncke 1995).

Initial surveys on cost structure had been conducted since the early 1950s, albeit to begin with in a four yearly rota based on voluntary replies from the companies. Cost structure surveys in the form that is still in use have been carried out for companies in mining and in the manufacturing sector in the former territory of the Federal Republic of Germany since 1975. In the former East German Länder and East Berlin, the KSE-VG has been carried out since 1991. Increasingly, there is also the opportunity to evaluate the individual details of the company participating in the KSE-VG for research purposes (see Section 5). The characteristics included in the KSE-VG is taken directly from the company accounts for the most part. As a rule, the profit and loss accounts of the company form the central database. The report units for the KSE-VG are companies as the smallest legal entity which, according to commercial or fiscal law, have to keep and balance their accounts. Legally independent subsidiaries, working parties and managerial companies, etc. have to report separately. The report is for the entire company, including all producing and non-producing sections, but excluding branches abroad.

Classification of the companies according to sectors of the economy is carried out in accordance with the economic focus of the company. Until 1994, the *SYPRO = Systematik der Wirtschaftszweige für das Produzierende Gewerbe (classification system of the sectors of the economy for the production*

industries) was taken as a basis for this classification at manufacturer level. From 1995 to 2002, the WZ 93 classification system was used (May 1991), which is based on the European industry classification NACE (Rev 1. = *Nomenclature générale des activités économiques dans les Communautés européennes*). As of 2003, the new classification system, WZ 2003, modelled on NACE (Rev 1.1) system, is the basis for classifying companies according to various sectors of the economy.

The KSE-VG is carried out on the basis of a random sample survey stratified according to the number of employees and sectors of the economy. The information on the random sample survey plan to be drawn up by the Federal Statistical Office comes from the individual material of the investment survey. The actual selection of companies is carried out using the company register. Companies with 500 or more employees are automatically included. Smaller companies with 20 to 499 employees are normally questioned up to four years in succession, and then replaced by new companies if possible (rotating panel). The aim of the rotation is to avoid overburdening of smaller companies with the survey. The total of up to 18,000 companies surveyed corresponds to around 40% of all companies in the manufacturing sector. With the stratification of the random sample survey, distinctions are made between several classes of company size. Until 2001, the cutoff point for the report units was companies with less than 20 employees. In order to harmonise German statistics with European statistics, these small enterprises have also been included since 2001 as random samples of approximately 6,000 companies chosen annually. The questionnaire for this survey is considerably shorter than the KSE questionnaire. Characteristics that are not included but are to be represented according to the EU regulation on cost structures are established by means of additional appraisals. The ratio of questionnaires returned is lower for this investigation than for the KSE. The results obtained are accordingly less precise.

Questioning of companies is increasingly carried out via the Internet. In 2002, around 1,500 (as compared to 1,000 in the previous year) of the companies surveyed made use of this option, which clearly shows the increasing acceptance of this form of questioning on the part of companies.

3. Information included in the KSE-VG

The contents of the survey are details about the business focus, the number of people employed, the stock of materials and goods and the revenue and expenses of the company in the relevant financial year. Extraordinary and other revenue and expenses are not included, so that the results are limited to companies' typical and specific production of goods and services.

More specifically, the KSE-VG includes the following information:

- I. Main economic activity (WZ 2003)
- II. Number of people employed (by gender, full or part-time employment and status as employer or employee).
- III. Output
 1. Turnover (VAT excluded) by kind
 - a. Turnover of own produced goods and services (repair, maintenance and similar) related to industry.
 - b. Turnover of externally produced goods for resale.
 - c. Turnover from other activities not related to industry (income from letting and leasing, revenue from the sale of patents and the granting of licences, revenue from consulting and planning activity, commissions received and similar).
 2. Stocks of unfinished and finished own produced goods at the beginning and the end of the year (valued at cost of production).
 3. Own produced assets for own use at the beginning and the end of the year (valued at costs of production).
- IV. Stocks of raw materials and supplies at the beginning and the end of the year (valued at acquisition costs with deductible VAT excluded).
- V. Stocks of goods for resale at the beginning and the end of the year (valued at acquisition costs with deductible VAT excluded).
- VI. Costs of production
 1. Total gross wages and salaries (including wages for home workers). Employers' social contributions (compulsory and voluntary).
 2. Cost for employees rented from special agencies (since 1999).
 3. Cost for contract work performed by other enterprises (deductible VAT excluded).
 4. Cost for other services (repair, maintenance, and the like) related to industry supplied by other enterprises (deductible VAT excluded).
 5. Rents and non-financial leases (deductible VAT excluded).
 6. Other costs (patenting, licences, consulting and planning costs, commissions, bank charges, travel costs and similar, deductible VAT excluded) and insurance premiums.
 7. Taxes on production, public fees and charges.
 8. Depreciation on fixed assets (according to tax law).
 9. Interest on liabilities.
- VII. Subsidies on production in the current year
- VIII. Billed and deductible VAT
- IX. Number of employed personnel and expenditure for Research and Development (R&D) activity (since 1999).¹

¹ All expenditure for the firm's own R&D activity, disregarding the source of funds (deductible VAT excluded) (Haug and Revermann 2003).

The revenue and expenses recorded for each company can be transferred to a production account from which the gross output and net production can be derived. The different definitions of these measures largely follow the conventions of the national accounting system. The production accounts for the individual companies can be put together to form non-overlapping accounts for sectors of the economy and finally for the entire scope of the report. The extrapolation of the results from the random sample surveys makes it possible to draw up a production account, from which changes to the individual positions may be identified with sufficient certainty. The derived measures of performance, which are each determined residually, can be used as reference sizes for more extensive analyses (for instance, for surveys of productivity.)

In order to show the facts clearly, the main performance for the manufacturing sector, mining and quarrying overall is shown in the following diagram. The net value added based on factor costs includes income from the factors of production used in the production process after maintenance of the real asset base (consideration of depreciations, indirect taxes and state subsidies). It is divided into gross wage and salary income, interest on borrowings, ground rent and business income.

4. Use of cost structure surveys

Within the framework of the German statistical system, cost structure surveys are used to estimate the national income in the national accounting system. Evidence of the national accounting system on income distribution and the sectoral composition of the value added of the economy as a whole is based, together with other primary statistical information, on cost structure surveys (Bollmeyer, R ath and Kreitmair 1991). In particular, examinations of the development and determinants of the sectoral profits may be carried out on the basis of cost structure surveys (Luh 1996, G rzig and Schmidt-Faber 2001). Moreover, cost structure statistics are an important basis for industry analyses (Kullmann 1997, Hillebrand 1997, Weiss 2000) as regularly carried out both by research institutes (Kn dler 2000, Leinwand 1999) and by trade associations (Stuttgart Chamber of Industry and Commerce, 1999, Bertram-Pfisterer 1995), consulting companies, banks and craft unions. Following German reunification, the cost structure statistics were used to a large extent to compare the East and West German economic structures (Wei  1998, G rzig 1998, Brautzsch and Ludwig 2004).

A series of studies on the determinants of the company's success and in the field of productivity and efficiency analyses resort to the microdata of cost structure statistics (G rzig and Stephan 2002, Fritsch and Stephan 2003, 2004). These studies using KSE-VG microdata have been carried out to date

Performance¹ of the manufacturing, mining and quarrying sector (2002)

Companies with 20 employees or more
Million euros

Consumption of raw, indirect and operating materials		576.787	Gross output	Turnover from own produced goods and services and industrial / manual services (contract work etc.)	1.169.056
Use of merchandise		172.772			
Cost for contract work performed by other enterprises		37.172			
Cost for other industrial / manual services (only external services)		27.549	Net output	Turnover from merchandise and trade mediation	213.046
Cost for hired labour		5.687			
Tenancies		23.509			
Other costs		139.658			
Other indirect taxes, minus subsidies for current production		44.502	Gross value added	Turnover from other non-industrial / non-manual activities	22.616
		421.125			
Depreciations	47.414	Gross value added at factor costs		Inventory changes to finished and unfinished own produced products, self-constructed assets (incl. buildings and general overhauls carried out by the company) insofar as these are activated	-460
Net value added at factor costs	329.209				
including gross wage and salary income	296.516				

¹ Performance ratio is not shown according to scale. – VAT excluded. Federal Statistical Office 2004 - 06 - 0169.

as cooperation projects with the Federal Statistical Office (Görzig, Hennchen und Stephan 2003). In this case, researchers are given the status of unpaid members of staff of the Federal Statistical Office. During the period of their employment, they have access to selected records of the office. At the same time, they are, however, like everyone employed at the Federal Statistical Office, obliged to maintain silence by contract and by law. A prerequisite for this access to data is that there is a research interest on the part of the Federal Statistical Office.

5. Data access

The results of the KSE-VG are published in the annual reports of the Federal Statistical Office ‘Kostenstruktur der Unternehmen des Verarbeitenden Gewerbes sowie des Bergbaus und der Gewinnung der Steine und Erden’, Series 4, No. 4.3. The results from the report year 2002 onwards are also available from the Statistics Shop of the Federal Statistical Office in electronic form. Details of the KSE-VG can also be obtained from the GENESIS database as a time series. In addition, the Federal Statistical Office also carries out special analyses for a fee. These make it possible to make information not included in the published standard tables available for research purposes.

Access to the KSE-VG microdata in the form of a factually anonymised scientific use file should be possible from 2005 through the newly established Research Data Centre of the Federal Statistical Office (Zühlke et al. 2003). Since 2003, an absolutely anonymised public use file has been available, which is intended for teaching purposes (<http://www.destatis.de/fdz/leistungen/campusfiles.htm>).

Further information on the KSE-VG is available from the following address:

Statistisches Bundesamt Wiesbaden
 Gruppe IV C
 D-65180 Wiesbaden
 Tel. +49 (0)611 / 75 23 08
 Gruppe.ivc@destatis.de

References

- Bertram-Pfister, B./Landecki, H.* (1995): Deutsche Branchenstudie im Steinmetz- und Steinbildhauerhandwerk: erfolgs-, personal- und absatzwirtschaftliche Analyse, Handwerkswirtschaftliche Reihe, 111.
- Bolleyer, R./Räth, N./Kreitmair, S.* (1992): Methoden und Grundlagen der Sozialproduktsberechnung – Entstehungsrechnung. Schriftenreihe Ausgewählte Arbeitsunterlagen zur Bundesstatistik No. 23. Wiesbaden.
- Brandner, H./Glaab, H./Frank-Bosch, B./Krassning, P.* (1978): Methodology of Cost Structure Surveys in Production Industries, in: Reform of Statistics of Production Industries, 29–39, Statistisches Bundesamt Wiesbaden.
- Brautzsch, H.-U./Ludwig, U.* (2004): Gewinne der Industrieunternehmen in Ostdeutschland noch im Aufholprozess, *Wirtschaft im Wandel* 3, 63–70.
- Frank-Bosch, B.* (1977): Kostenstruktur im Bergbau und im Verarbeitenden Gewerbe (ohne Handwerk): *Wirtschaft und Statistik* 12.

- Fritsch, M./Stephan, A.* (2003): Die Heterogenität der technischen Effizienz innerhalb von Wirtschaftszweigen – Auswertungen auf Grundlage der Kostenstrukturstatistik des Statistischen Bundesamtes, in: R. Pohl/J. Fischer/U. Rockmann/K. Semlinger (Hg.): Analysen zur regionalen Industrieentwicklung – Sonderauswertungen einzelbetrieblicher Daten der Amtlichen Statistik, Berlin: Statistisches Landesamt, 143–156.
- Fritsch, M./Stephan, A.* (2004): What Causes Differences of Average Technical Efficiency between Industries? – An Empirical Investigation, Berlin: DIW discussion paper 257.
- Görzig, B.* (1998): Wettbewerbsfähigkeit und Lohnstückkosten in der Strukturanalyse, Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 4, 690–696.
- Görzig, B./Hennchen, O./Stephan, A.* (2003): Produktionsauslagerung und Unternehmenserfolg, Wirtschaft und Statistik 8.
- Görzig, B./Schmidt-Faber, C.* (2001): Wie entwickeln sich die Gewinne in Deutschland, DIW Sonderheft 171.
- Haug, H.-F./Revermann, Ch.* (2003): Statistik für Forschung und experimentelle Entwicklung im Vergleich, Wirtschaft und Statistik 12.
- Hillebrand, B.* (1997): Wettbewerb und Effizienz in der deutschen Gasversorgung, RWI-Mitteilungen 47, 133–149.
- Industrie- und Handelskammer Region Stuttgart* (1999): Kostenstruktur Industrie: Beispiele aus ausgewählten Wirtschaftszweigen des Verarbeitenden Gewerbes in Deutschland.
- Kaiser, J.* (1986): Zur Verfügbarkeit von Daten der Kostenstrukturstatistiken des Statistischen Bundesamtes, Wirtschaft und Statistik 12.
- Knödler, H.* (2000): Industrielle Kostenstrukturen im Wandel: eine empirische Untersuchung langfristiger Kostenstrukturveränderungen im produzierenden Gewerbe der Bundesrepublik Deutschland 1950 bis 1994, Heidelberg, Dissertation.
- Kullmann, S.* (1997): Kosten, Kostenstruktur und Kosteneinflußgrößen in den Grubenbetrieben des deutschen Steinkohlenbergbaus: Eine Analyse der empirischen Entwicklung und der kostenmäßigen Perspektiven, Essen, Dissertation.
- Leinwand, M.* (1999): Die Entwicklung der industriellen Kostenstrukturen im verarbeitenden Gewerbe der Bundesrepublik Deutschland zwischen 1977–1993: Ein Beitrag zur Diskussion um den Wirtschaftsstandort Deutschland, Heidelberg, Dissertation.
- Luh, Th.* (1996): Verbesserung der statistischen Erfassung der Unternehmensgewinne zur Berechnung des Bruttosozialprodukts von der Einkommenseite. Schriftenreihe Spektrum der Bundesstatistik, Band 3. Stuttgart.
- Mai, H.* (1991): NACE Rev. 1 – Die neue europäische Wirtschaftszweigsystematik –, Wirtschaft und Statistik 1, 7 ff.
- Möncke, A.-F.* (1995): Kostenstrukturerhebungen im Bergbau und im Verarbeitenden Gewerbe 1988 bis 1992, Wirtschaft und Statistik 1.
- Petrauschke, B./Pesch, K.-H.* (2004): Ergebnisse der Strukturerhebung im Dienstleistungsbereich 2001, Wirtschaft und Statistik 2, 163–172.

- Stock, G.* (1983): Kostenstrukturerhebungen im Bergbau und im Verarbeitenden Gewerbe, *Wirtschaft und Statistik* 9.
- Wehmeier, W.* (1999): Kosten- und Einkommensentwicklung bei Angehörigen der steuerberatenden und wirtschaftsprüfenden Berufe: Ergebnisse der Kostenstrukturerhebung 1995, *Die Steuerberatung*, 272 – 291.
- Weiss, Ch. R.* (2000): Determinanten und Zyklizität der Profite im produzierenden Ernährungsgewerbe Deutschlands, Wettbewerbsfähigkeit und Unternehmertum in der Land- und Ernährungswirtschaft, 249 – 256.
- Weiß, J.-P.* (1998): Zur Ertragssituation im verarbeitenden Gewerbe Ostdeutschlands im Jahr 1996, *DIW Wochenbericht* 65, 878 – 890.
- Zühlke, S./Zwick, M./Scharnhorst, S./Wende, Th.* (2003): Die Forschungsdatenzentren der Statistischen Ämter des Bundes und der Länder, *Wirtschaft und Statistik* 10, 906.