

The panelist

1 □ 1994 Bi-annual

Newsletter of the Enterprise Panels project

Foreword

Eurostat - the statistical office of the European Communities, has the responsibility of providing, in close cooperation with the statistical services of the Member States, comparable information on the European society and its economy. The growing role of the European Union as regards its policies of ensuring a favourable environment for the small and medium size enterprises (SMEs), promoting competitiveness, and for stimulating technological innovation, to mention but a few, calls for detailed information on business structures and better understanding of the behaviour of the enterprise.

The existing harmonised data can not fulfill all the needs which are expressed by the users. More in depth analyses on the dynamics of the enterprises, their strategies, the way they react to the increasing europeanisation of the market are needed. The links between

competitiveness, growth and employment have to be studied.

Presently, the contrast, for instance between internationally comparable data which is available on the supply side of the labour market and the demand side is striking. No existing data can be used to compare the choice processes of firm at the microlevel in the same way as that in which the choice processes of household and individuals can be compared. To meet these concerns, new statistical initiatives are needed at the European level: the European enterprise panels project is one of them.

The international workshop on techniques of enterprise panels organised in February 1994 has shown clearly the broad interest on the topic and the need to stimulate the exchange between the different countries, between national statistical institutes and universities, and between users and panel managers.

This newsletter is a first tentative response to that need and forms

part of a set of actions launched by Eurostat to promote the longitudinal analysis of enterprise behaviour in the European Economic Area (EEA). It will be complemented by different meetings, projects proposals and consultations, launched or supported by Eurostat. Our objective is to provide through longitudinal studies comparable or harmonised information to support regional, national and Community initiatives and to improve our knowledge of the business world. Any suggestion which will go along these lines will be welcomed.

Table of Contents

Foreword	1
The Panels Project	2
The Panelist (Newsletter)	3
Impact of Internal Market	3
Enterprise Behaviour	4
Nonresponse & Weighting	7
In brief (The Netherlands)	9
Agenda	11
Books Choice	12
Readership service	14

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The Enterprise Panels Project

The Enterprise Panels Project is one of the projects of the Directorate for Business and Energy Statistics, Research and Development and Statistical Methods of Eurostat. It operates under the guidance of an internal steering group consisting of members from the various units within the directorate and is supported by an international network of experts on panels methodology. The programme is managed by Unit D3 (Research and Development and Statistical Methods) headed by Mr. Daniel Defays and the director is Mr Photis Nanopoulos.

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The Panelist is one in a series of three newsletters prepared by Unit D3 of Eurostat. The others are *REDIS News* (on R&D and Innovation Statistics) and *Research in Official Statistics* (on DOSIS Development of Statistical Information Systems).

General Notes on the Newsletter:

All contributions for the next edition must be received by the editor not later than 30th January 1995. Contributions may be sent by mail, fax or via E-mail (e.ojo@mhsg.cec.rt.be)

The opinions expressed are those of the authors alone. Neither the European Commission nor any person acting on its behalf is responsible for the use which might be made of the information contained in the newsletter.

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The Panelist

This newsletter is intended to serve as a link for all those interested in business statistics (either as users or providers of data) in general, and enterprise panels in particular. It will highlight the latest developments as regards methodologies in this field, give an insight into what is happening especially in the Member States of the European Union, and give information on the progress of the Enterprise Panels Project of Eurostat.

The Panelist will be published twice a year in March and September. Contributions within this general frame on issues of interest to the target group will be welcomed from readers. Announcements of conferences, seminars, workshops, research activities and findings, books journals etc. related to this field will be welcomed for inclusion in the newsletter.

In this issue.....

On December 5 1993, the European Commission adopted the *White Paper* on "Growth Competitiveness and Employment"- a document which gave guidelines on policies aimed at rejuvenating the European business enterprise with a view to creating jobs for the millions of unemployed people within the Community. A general call was made for debate on its proposals.

Six month later, as a part of this debate, the Enterprise Panels Project commissioned five experts with practical experience in longitudinal analyses

of the enterprise to study how a better understanding of the behaviour of the enterprise, through the use of panels, could help policy makers in monitoring and evaluating the impacts of the *White Paper*.

This issue of The Panelist contains some short extracts from the reports of the experts which were presented at the July meeting of the group in (Surrey) London. See page 4.

On page 7, Professor Peter Hauptmanns of Ruhr-University of Bochum, Germany takes a look at the contemporary issue of **Nonresponse and Weighting possibilities**, giving some remarks on the experience and structure of the German NIFA-Panel.

Insight, our focus section takes a look at the current state of panel surveys in the Netherlands.

Evaluating the Impact of the Internal Market A challenge to the enterprise panels statisticians

One of the biggest achievements of the European Union has been the creation of the Internal Market (IM) which brought down trade barriers between the Member States and opened up frontiers to the benefit of all enterprises. It is generally assumed (or should we say hoped) that the great majority of Community enterprises has been *affected* directly or indirectly by this action. By saying *affected*,

it is generally assumed (or should we again say hoped) that the effect has (overall) been positive.

In 1996, the European Commission will have to give account (through a report which it is obliged to prepare by the Council of the European Communities) on the impact of the internal market.

It will not be enough to say what the net effect of the IM has been; Otherwise, ordinary snap-shot (cross-sectional) statistics would have been sufficient. The issue is not only of *what has changed and by how much*. There is the need to understand *why* the changes and *what form they have taken*. The evaluation will involve finding out who the winners and losers are. There is also the need to find out

the attitude, as a result of the IM of the enterprise, to a number of issues: Issues such as capital structure and geographical spread, employment and training, employer-employee relations, innovation, and a host of others. These call for a clear understanding of the behaviour of the European business enterprise. This is only possible through longitudinal analysis of enterprise data. The realisation that this aspect is of great importance to the 1996 report now poses a great

challenge to the enterprise panelists who have to come up with answers to a number of burning questions which the policy evaluation project will have to answer.

One of the services of the European Commission (DGXV) is responsible for the preparation of the 1996 report, while Eurostat is responsible for the provision of adequate statistics to support this effort. The main contacts for further information on this project are:

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Understanding the behaviour of European Business Enterprise through Longitudinal analysis.

The meeting of the Contact Group on Enterprise Panels and the European Commission's *White Paper* discussed various issues which centered around the nature of statistical information on the behaviour of European business enterprise.

Such information, which should complement cross-sectional data presently available from other sources, will aid policy makers in particular in understanding the reasons and trends of changes taking place within the enterprise sector.

These extracts were taken from the proceedings (recently published by the Office for Official Publications of the European Communities- OPOCE) of the Contact Group's meeting which was held in London in July 1994. (See Book Choice)

Dr. Tor Viking Eriksson
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T.S.E.G., Turku, Finland

.....The European Commission's *White Paper on Growth, Competitiveness and Employment* (1994) emphasises the importance of creating improved opportunities for small firms and formation of new firms in general as a means of new job creation. Firm size, firm growth and firm formation are all issues about which it is possible to enhance our understanding by the help of enterprise panels. An oft repeated argument is that economic policy measures should be targeted at small firms since they have the greatest growth potential. Clearly, this question which is highly relevant from a policy perspective

points to the importance of looking at the relationship between firm size and growth. For this longitudinal data is needed.

.....One of the key messages of the *White Paper* is the importance of enhancing labour market flexibility. As has been stressed in the OECD's recent *Unemployment Project*, the empirical knowledge of the nature and extent of the flexibility of European labour markets is limited. Thus, not much is actually known about if and to what extent various forms of flexibility affect employment levels and patterns. Enterprise panel information could be of great help in filling in some of the major gaps here.

Labour market flows is the key to the study of labour market flexibility. The gross flows of jobs and workers reveal the dynamics,

Labour market flows is the key to the study of labour market flexibility. The gross flows of jobs and workers reveal the dynamics, or the lack thereof, of the labour market which are only to a limited extent indicated by stock data. A complete picture of the dynamics consists not only of changes within firms but also flows of people between firms, between labour market states like unemployment and out of the labour market status.

Dr. Andrew K.G. Hildreth
ESRC Research Centre
University of Essex, England

.....Adjustment of the employment of unskilled workers is faster than that of skilled workers. Evidence suggests that adjustment costs are not symmetric (enterprises do not hire at the same speed as they fire).

.....Recent empirical work, using individual level data, has shown that there exists unexplained differentials in wages between otherwise identical workers across industries and across size of plant

..... This has implications for sectoral policy designed to encourage employment growth particularly in open economies. In particular, the objective of the White Paper to tie workers pay to company performance may not help reduce unemployment in the European Union. Non-competitive wage differentials may drive a 'wedge' between the number of workers who could be employed (at the competitive wage), and the number actually employed.

What the Enterprise Panels Project needs to investigate is what generates these non-competitive wage differentials between workers. Recent work has concentrated on the profitability of firms, their investment strategies, and the technology of products or production methods.

Francis Kramark
Department for Research
INSEE, Paris

It is widely believed that small firms create employment. In fact, even if small firms account for the larger number of created jobs, they also account for a large number of destroyed jobs since these small firms do not survive very long. The empirical evidence shows in fact no clear link in the U.S.A. between job creation and size. Hence, it is essential to know if this is also true in Europe.....

.....It is often very interesting to know a firm's relations with other firms (in the spirit of a network). In this type of relationships, subcontractors are essential. Such relations should be statistically measured.

.....Longitudinal information on individuals within firms is necessary to address most of the essential questions of the White Paper.Education and training are relentlessly invoked as key elements of Europe's future growth. Even if everybody feels that such points are central to firms' success, the way education and training operate are by no means clear.

Firms do not hire or fire or train randomly and more specifically, the observable elements contained in most surveys are not sufficient to fully account for firms practices.

An issue raised by the White Paper is the quality of management (p.89 and 91). Information on owners and managers of private firms is seldom available in Europe even if it is seen as central in all modern theories of the firm, in particular incentives problems.

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Policy formulation and implementation needs (i) early warning indicators, (ii) information on the causes and characteristics of successfully growing firms in order to secure or create jobs, (iii) information on the employment effects in terms of quantity and quality due to legal, financial or bargaining action, (iv) information on the diffusion of new technologies and products among economic branches and between the single establishments of an industry, (v) studies on the links between competition and overall economic and employment performances of firms.

.....Successfully growing firms that secure or create jobs have many positive characteristics in common: orders, production and value added, profits are above average; they invest recurrently and innovate production capacities; there is much effort in

training and retraining; they pay efficiency wages; their planning system is elaborated; they offer a great variety of working hours to meet individual needs in working hours and to enlarge firms operating hours; they do not use much subsidies; they pursue a full employment strategy of their optimal workforce; they are able to keep the human capital etc.

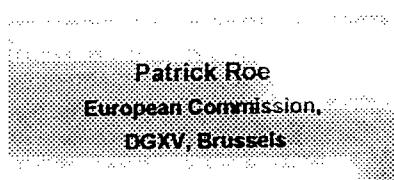
Theoretical and empirical evidence of the benefits of competition is very weak. The intensification of competition may single out inefficient firms or jobs.....

.....To monitor the policies and provide information in connection with the targets of the White Paper, it would be ideal to create a European enterprise panel for all Member States using a common sample design and questionnaire.

Edward Ojo
R&D and Statistical Methods,
Eurostat, Luxembourg

A whole rethinking of enterprise policies is no doubt necessary. New thinking should not lean too heavily either on the instincts of the policy-makers, on pressure groups or on cross-sectional data as has been the case up to date.

.....Early warning signs are important. A clear understanding of the behaviour of enterprise is indispensable. It is clear that such understanding is only possible through longitudinal analyses on enterprise data.



Patrick Roe
European Commission,
DGXV, Brussels

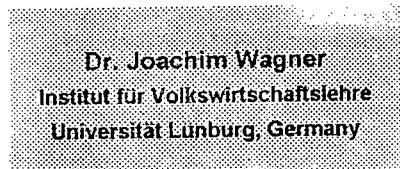
.....The elimination of trade barriers, including the harmonisation of technical standards, was the mechanism which would give the initial stimulus to the internal market. The resulting increase in trade within the Community would in turn give rise to extra competition and allow firms to exploit economies of scale. The question that now arises is to what extent firms have in fact exploited the opportunities offered by the single market programme and what as a consequence has been the overall economic impact.

The White Paper recognises that the reality of the single market is an essential condition for economic growth, competitiveness and employment.

.....The questions that need to be addressed include flexibility of the labour market in the context of the single market - the effects of industrial restructuring on employment, the regional employment impact, occupational and geographical mobility.

Essentially the single market is about firms - in particular their reactions to the opportunities provided by the legislative framework that allows them to operate and compete on an equal basis throughout the EU. It is logical therefore that analysis at the level of the firm - in addition to that carried out at the level of the sector or whole economy - can provide a clearer picture of the

processes that will determine the outcome of the single market programme. Enterprise panels could therefore play an important part in the development of a statistical methodology designed to make the necessary assessment.



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It will be hard to sustain the tradition in labour and industrial economics which views plants within industries, regions, and size classes as relatively homogeneous, or theories of vintage effects in terms of which plants within age groups are relatively homogeneous. This casts doubts on policies targeted to groups of firms from an industry, a region, or a size class.

The analysis of the components of job turnover.....reveals that, although job flows due to increase of employment in growing firms and due to decrease of employment in shrinking firms cover the majority of gross flows, both the increase of employment due to new firms and the decrease of employment due to firms that closed down is important, too.

Evidently, an analysis of the pattern of development of new firms over time is only possible with a panel data set at hand.

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For information on how to obtain a copy of the *White Paper*, the reference document for this exercise, please see Book Choice in the Classified section.

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Nonresponse and Weighting possibilities

Some Remarks on the experience and Structure of the German NIFA-Panel

Since 1989 the "Deutsche Forschungsgemeinschaft (DFG)" has funded a panel survey on the technical, social and economic consequences of technological and organisational change in the German mechanical engineering industry (*NIFA-Panel; project management: PD Dr. Ulrich Widmaier*). The panel started in 1991; it is repeated annually.

As it is the case with nearly every (panel-) survey, the NIFA-panel suffers from non-response and panel-mortality, which is likely to cause discrepancies between sample and population. This may lead to severe misinterpretations of the results. Therefore it is common practice to correct such discrepancies by weighting. There are many different weighting procedures, especially if it is used to impute missing data. The most widespread way is to use the Horvitz-Thompson-estimator (i.e. the inverse of the sampling probability for each unit), at least if disproportional stratified sampling is used. As the NIFA-panel addresses all firms in the population, this method was not usable. To adjust the data for nonresponse the most common weighting procedure is a simple redressing. For this, information on the distribution of the redressing variables in the population is needed, only some "demographic" variables can be used, e.g. firm size or industry affiliation.

But it is widely ignored that applying weights is related to certain prerequisites (cf. Schnell 1993): unit nonresponse in a survey does rarely occur randomly; it nearly always results from an explicit missing data (MD) generating mechanism. A simple redressing, however, is based on the MAR (missing at random) assumption. The sample distributions are then adjusted not according to the MD generating mechanism, but only according to the distribution of few structural or demographic variables in the population. If it has to be assumed that missing may not occur randomly, a

weighting that does not meet the MD-generating mechanism may lead to a further distortion of the results instead of a correction. So it is essential to obtain more and deeper knowledge about the MD-generating mechanism before procedures to adjust nonresponse are applied (Fay 1989; Little/Rubin 1987).

In the analysis of the MD-generating mechanism in the NIFA-panel we have had to pay attention to two different kinds of nonresponse: first a cross sectional nonresponse, and second the panel mortality (for more details see Hauptmanns/ Ostendorf 1994).

Cross-Sectional Nonresponse

To identify the MD-generating mechanism, three approaches were chosen: First, it is analysed for each wave whether the early respondents differ from the late ones on central variables. Secondly, a separate survey was carried out among the firms that did not participate in the first wave. Thirdly, differences between respondents and nonrespondents of a specific wave are analysed by comparing the data of the two groups in the wave before.

A test of the willingness to participate in the survey showed a positive correlation between the response-time and the technical equipment implemented in the firm ($\eta^2 = .36$); that means firms which did not reply before the second reminder usually have less CIM-technology implemented than early respondents. This leads to the conclusion that nonrespondents will have less or even no CIM-technology implemented, or, in reverse, firms that did participate in the survey will have more CIM-technology implemented than nonrespondents. This hypothesis was confirmed by the separate nonresponse-study.

To obtain deeper knowledge about the structure of the nonrespondents, a separate nonresponse study was carried out after the first wave. For this, a random sample of some 5% (=135 firms) was drawn out of the nonrespondents. These firms received a very short questionnaire with only four questions: whether the firm agrees in the affiliation to the mechanical engineering industry, whether the firm actually produces machines or machine tools at the respective address, whether the firm has any CIM-technologies implemented and why the firm did not participate in the survey. Several reminders were given by phone, so that at last 127 out of the 135 firms participated in this nonresponse study. Firm size and industry affiliation were added to the data from the register from which the sample was drawn.

As small firms were underrepresented in the NIFA-panel, they were - as expected - overrepresented in the non-response study. 48% of the participants in this sample had 20-50 employees, versus 43% in the population. But further analysis proved that participation in the sample was not - as it seemed - primarily a question of firm size: an analysis of the use of CIM-technologies showed, that 26% of the firms in the nonresponse study did not use any CIM-technology, versus only 11% in the panel ($t=2.98$; $df=109.8$; $p=.002$). An ANOVA-model made clear that not firm size but use of CIM-technology was the decisive factor for or against participation in the NIFA-survey. Though respondents and nonrespondents showed significant differences on both variables, in the multivariate analysis only the technology variable had a significant effect on the willingness to respond.

Panel Mortality

In the NIFA-panel, the effect described above is correlated only with the firms' principal decision of participating in the survey or not. It cannot be detected if wave nonresponse respectively panel mortality is analysed. The first analysis to test this was a comparison between the firms that participated in the first wave's main survey with the ones that only took part in the basic survey (cf. Flimm/Saurwein 1992). These two groups differ neither on firm size nor on industry affiliation. A significant effect of the "technology"-variables is not detectable either: Neither for the question whether they use CIM-technology at all

nor for the number of CIM-components implemented ($t = .41$; $df= 1767.66$; $p=.342$). A comparable analysis was carried out for the group of firms that did participate in the first two waves of the NIFA-panel but not in the third. With several statistical tests we tried to identify significant differences between these two groups for a number of variables. None of them showed significantly different means or distributions between respondents and nonrespondents of wave three. So we may assume that panel mortality is - other than the participation in general - not caused by an explicit MD-generating mechanism but indeed occurs randomly.

To confirm this we tried to identify variables which have a significant impact on the drop-out for one wave. We first applied a classification tree with the software CART (cf. Breiman et.al. 1984), an ideal tool for data exploration. The model CART generated was then tested in a logit analysis several times with modifications. Even with this procedure we could not identify a model with an adequate goodness of fit for "panel participation" as dependent variable. Thus, we can be rather sure that mortality in the NIFA-panel is based on random effects only. This result could also be confirmed with a micro-simulation approach for drop-outs between the first and second wave (Niggemann 1993).

Conclusion

Small firm size is often seen as the main reason for nonresponse in an enterprise survey. But very often it is ignored that variables like firm size are just a proxy for other factors that really determine the decision for or against participation. The most important one is without doubt the survey theme and the judgement of the firm if this survey is relevant for them - and if they are relevant for the survey. Our results, for example, gave proof to the assumption that an adjustment of data by weighting with firm size would lead to a larger proportion of firms using CIM technologies; in reality this proportion should be lower than it actually is in the NIFA-survey. Thus a simple redressing would lead to further distortion in the data, because not the structural variables are decisive for the participation but the use or non-use of CIM-technology (which the firms believed to be the main subject of the survey).

Thus it has to be emphasized that weighting as a correction mechanism for non response must not be used unless very clear information about the MD generating mechanism is available. If this mechanism is known it can be modeled and used in imputation procedures for instance. If it is not known, MD-imputations will mostly be unsatisfactory, and simple weighting may even lead to results that are worse than from an analysis with unweighted data.

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In brief.....

Towards the end of 1993, as a part of the groundwork done by Eurostat on the Enterprise Panels project, a survey, (more of a quick check than a detailed study) was conducted in all the Member States of the European Economic Area (EEA) to find out what panels and panels potentialities exist in each of them. Under this heading The Panelist will, starting with this edition, take a brief look at the findings. We shall also look at what is new in the Member State under the highlight.

The Netherlands

Although not specifically designed as panel surveys, most surveys in the Netherlands are conducted as a full census and can be used for panel

research. The Research Division of the Department of Industry and Construction maintains such a panel, using data from the Annual Production and Investment Statistics for Manufacturing Industry. The panel contains individual data for kind of activity units of 10 employees and more for the period 1977-1990. The variables covered include: production, number of employees, energy consumption, operation surplus and investment.

The panel has been, and is being used for several types of micro-economic longitudinal analysis. Topics that have been under review include:

- the relationship between growth and size of firms;
- the substitution between blue & white collar workers;
- energy saving under price changes; and
- investment behaviour of firms.

Results have been broken down by: branch of industry, size classes, export-share and the like. Recently, the panel has been used to construct data for the purpose of investigating the macroeconomic implications of gross job creation and destruction on micro-level.

This research has been carried out by researchers of the Free University of Amsterdam. The panel has also been exploited for an explanatory analysis of the viability of sub-optimal scale plants. The question of why in the nearly all industries so many sub-optimal scale plants are able to operate far below minimum efficient scale - defined according to traditional view of the theory of industrial organization - has been investigated both from a static point of view (using a cross-section of manufacturing firms) and a dynamic point of view (using the panel structure of the data). This research was carried out in cooperation with the Dutch Research Institute for Small and Medium-sized Business (EISM) and the Wissenschaftszentrum Berlin for Sozialforschung (WZB).

The register of enterprises gives a good basis for survey works including sample design and longitudinal analysis, for example. It was developed in 1967 and further expansion was done in 1978.

Specifically, Statistics Netherlands reported the following surveys with panel potentiality:

- annual production statistics;
- annual investment statistics;
- monthly turnover statistics;
- monthly/quarterly business survey;
- monthly/quarterly turnover indices.

What's new?

Research and development (R&D) is recognised in the Netherlands as a key factor in economic growth. It is therefore of major interest to enterprises and the government. Investigations into the determinants and the use of R&D expenditure are therefore important, in particular to policy makers.

Statistics Netherlands plans to start a project on R&D expenditure of enterprises. The research will be done on a panel of enterprises in the Netherlands. At first, the panel will contain only two years, but this is sufficient for applying panel techniques; later on the panel may be expanded to cover more years. The research will be carried out by an outside researcher from Free University and a researcher from Statistics Netherlands; the duration of the project will be at least one year.

International comparisons can be very fruitful in this kind of research. Therefore Statistics Netherlands will like to cooperate with researchers from other countries.

What's new? was contributed by the person named below from whom further information may be obtained.

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Classified

Agenda



First meeting of the European Economic Area - **EEA Working Party on Enterprise Panels**

Luxembourg, 15 and 16 September 1994

The first meeting of this group will be held in Luxembourg on 15 and 16 September 1994. It will be attended by official national representatives of the EEA Member States and Switzerland. A number of experts have also been invited to take part in the meeting. The main focus will be on strategies aimed at meeting the needs for statistical information of longitudinal nature on the European business enterprise. Eurostat's plan of action in the short, medium and long term will be discussed and the present situation in this respect in each of the Member States will be reviewed.

While this is a fairly "closed" meeting, copies of its report will be available at the end of October 1994. Anyone interested in receiving one should contact the Secretary, Enterprise Panels Project. (The address is given on page 13.)

Longitudinal Data Analysis and Repeated Measures

European Courses in Advanced Statistics - V
11 to 15 September 1995
The Open University, Milton Keynes, UK

European Courses in Advanced Statistics is a biennial series, aimed at statisticians from throughout Europe. The series seeks to cover recent developments in advanced statistical methodology. Previous courses

have been held in Italy, Germany, France, and The Netherlands, and the 1995 course will be organised by The Open University in Milton Keynes, UK. The title of the 1995 course will be *Longitudinal Data Analysis and Repeated Measures* and the Scientific Programme will be chaired by Professor Peter Diggle.

The course will last five days and will consist of an intensive series of presentations by six leading researchers in the field. Thus participants will have the opportunity to meet experts in the area and discuss problems with them.

The course has the support of the Statistical Office of the European Communities.

Further details may be obtained from:

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Chair: ECAS-95 Organising Committee
Department of Statistics
The Open University
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Call for Comments **Enterprise Panels Seminar 1995/96**

The Statistical Methods Unit of Statistics Finland is interested in organizing a seminar in the near future on Enterprise Panels subject to having a reasonable number of interested participants. They will like to have suggestions and comments from any interested panelist on the proposed seminar as regards interest, possible dates for the seminar and the theme.

Below are some possible themes:

- From cross-sectional towards longitudinal designs in enterprise surveys;

- Creation of longitudinal files from censuses, registers and surveys;
- Handling frame problems and non-response in enterprise surveys and censuses;
- Real use of enterprise panels; and
- Empirical panel data analysis for businesses.

For more information, please contact:

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Book Choice



Just published:

Enterprise Panels and the European Commission's White Paper

Proceedings of the Seminar of the Contact Group on Statistics of Enterprise Panels & the *White Paper*.

The European Commission's White Paper on Growth, Competitiveness and Employment makes recommendations on ways in which the foundations for sustainable development of the European economies could be laid. It envisages the creation of millions of jobs over the next years, and calls for debate to assist decision-making.

This volume contains the recommendations of a group of experts, working on the initiative of Eurostat, from one of such debates. The group emphasises that enterprises create (and sometimes destroy) jobs. It argues the importance of understanding the behaviour of enterprise and the effects of common European Union policies on them. It makes recommendations on the use of longitudinal analysis, a modern statistical tool, to study this issue.

Publisher: Office for Official Publications of the European Communities (August 1994).
1994 - 100 pp. 14.8 x 21 cm ISBN 92-826-8533-0
Price: 9 Ecu (in Luxembourg).

Soon to be released:

Enterprise Panels

Proceedings of 1st Eurostat International Workshop on Techniques of Enterprise Panels

Finishing touches are now being put to the preparation of the proceedings of the workshop which was held earlier this year. (The delay in its earlier announced release date has been due to unforeseen circumstances.)

Contained in the volume is a review of the various presentations and contributions made by the participants at the workshop. The volume also looks at the user needs for longitudinal analysis of the enterprise through the perspective of potential users (from the European Commission).

The proceedings, to be published by Office for Official Publications of the European Communities, is rescheduled for release in December 1994.

For more information on any of the two publications mentioned above, please contact the Secretary, Enterprise Panels Project. (The address is given on page 13).

European Commission

White Paper

Growth, Competitiveness , Employment

The Challenges and Ways forward into the 21st Century

The White Paper (which was the reference document for the Contact Group - see page 4) sets out to foster debate and to assist decision making - at decentralized, national or Community level - so as to lay the foundations for sustainable development of the European economies, thereby enabling them to withstand international competition while creating the millions of jobs that are needed.

The document is available in the nine official languages of the European Union. It is in three parts A,B and C. Parts A+B are published in one volume with details given below:

Publisher: Office for Official Publication of the European Communities.
1994 - 167pp. - 17.6 x 25 cm ISBN 92- 826 - 7423-1
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Econometric Analysis of Panel Data

(BADI BALTAGI, Texas A&M University, USA)

Completely up-to-date, this new text provides students with a comprehensive assessment of the latest panel data techniques, especially for serial correlation, heteroscedasticity, simultaneous equations, dynamic models and incomplete panels.

Highly accessible, the book includes extensive coverage of estimation, testing and prediction methods using panel data. Baltagi uses two data sets to illustrate the techniques used and cites several empirical studies using panel data techniques, so that the reader can relate the econometric methods with the economic applications. Packed with exercises which can be assigned for classroom use, the author proceeds from single equation methods to simultaneous equation methods, making this text entirely accessible to students.

Contents:

- Introduction
- The One-Way Error Component Regression Model
- The Two-Way Error Component Regression Model
- Test of Hypothesis with Panel Data
- Heteroscedasticity and Serial Correlation in the Error Component Model
- Seemingly Unrelated Regressions with Error Components
- Simultaneous Equations with Error Components
- Dynamic Panel Data Models
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- Special Topics including: Measurement Error and Panel Data; Rotating Panels; Pseudo Panels; Limited Dependent Variables and Panel Data; Selection Bias in Panel Data; Further Extensions

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Panel Data Analysis

Eds.: W. Franz, B. Raj, A. Wörgötter

A number of advances have been made in panel data analysis during the past three decades and it continues to be one of the most active areas of research. This volume contains 13 significant contributions focusing on modelling strategies, data issues, theoretical analysis and applications. Applied econometrics papers on the economics of labor, health, telecommunications, finance and macroeconomics are provided as well as a survey of recent theoretical developments in panel data analysis. Contributors include both well known scholars and younger researchers from Australia, Canada, Europe and the United States of America.

1992. VIII, 220pp. 6 figs. (Studies in Empirical Economics.) Hardcover DM 128,- ISBN 3-7908-0593-9

For more information, please contact:

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The Panelist

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