STATISTICS

Business Tendency Surveys

A Handbook

OECD

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Publié en français sous le titre :

Manuel sur les enquêtes conjoncturelles

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BUSINESS TENDENCY SURVEYS: A HANDBOOK

Division for Non-Members

Statistics Directorate, OECD

FOREWORD

Business tendency surveys – also called business opinion or business climate surveys – ask company managers about the current situation of their business and about their plans and expectations for the near future. Experience in OECD Member countries has shown that surveys of this type provide information that is valuable to the respondents themselves and to economic policy makers and analysts. Although they do not provide precise information on levels of output, sales, investment or employment they can be used to predict changes in these aggregates and, for that reason, they are particularly useful for analysing the business cycle.

In collaboration with the European Commission, the OECD has developed a system of harmonised business tendency surveys and, under the auspices of the Centre for Co-operation with Non-Members, the OECD Statistics Directorate has been encouraging transition countries in Europe and other non-Member economies to adopt this harmonised system. *Business Tendency Surveys: A Handbook* is based on the experience gained by OECD staff in working with a wide range of countries on the implementation of harmonised business tendency surveys and the use of the results for short-term economic analysis.

This programme of technical co-operation with non-Members has been managed by Ronny Nilsson and the Handbook is based largely on the analytic reports, workshop documents and other instruction material which he has prepared over the last decade. Mr. Nilsson has benefited from discussions with OECD colleagues, including Derek Blades, Enrico Giovannini and Denis Ward, and with many survey experts outside the OECD including Sudhir Junankar (Confederation of British Industries), Franz-Josef Klein (European Commission), Åke Lönnqvist (Statistics Sweden), Gernot Nerb and Karl Heinrich Oppenländer (ifo Institut für Wirtschafsforschung, Munich), Frank Schönborn (Eurostat) and George van Gastel (National Bank of Belgium).

This document has been prepared within the framework of the programme of work of the Centre for Co-operation with Non-Members and is published on the responsibility of the Secretary-General.

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1. INTRODUCTION

Purpose

1. *Business Tendency Surveys* are carried out to obtain *qualitative* information for use in monitoring the current business situation and forecasting short-term developments. Information from these surveys has proved of particular value in forecasting turning points in the business cycle. The purpose of this *Handbook* is to show how these surveys are designed and carried out, how the results are processed and how they can be used for economic analysis.

2. The OECD Statistics Directorate has an extensive programme of technical co-operation with non-member countries. This programme includes assistance in developing business tendency surveys because these surveys have proved particularly useful in obtaining information on current economic developments and on the short-term outlook in countries where there are often long delays in publishing results from traditional enterprise surveys.

3. The OECD programme encourages countries to adopt the *harmonised system* of business tendency surveys. The European Union established a standard framework for business tendency surveys during the 1970s[1]. The OECD subsequently worked with the EU during the 1990s to adapt this system for use by transition countries in Europe and Central Asia[2] and the OECD, in collaboration with regional agencies, is now helping countries in Asia and Latin America to adopt the same system. The harmonised system provides the core recommendations for this *Handbook* and is described in Chapter 8 and Annex A below.

4. This Handbook is primarily aimed at helping non-member countries to develop their business tendency surveys. On the other hand, there are at present no international standards outlining best practice for the development of business tendency surveys, so this Handbook could also be useful for Member countries. In addition, business tendency surveys are often carried out by trade associations or chambers of commerce and while many of these surveys have proved to be useful for economic monitoring and forecasting, they do not always apply the more rigorous survey procedures which are used for official statistical surveys and which are recommended in this Handbook. More generally, the discussion of the analytic uses of business tendency survey results should be of interest to statisticians and analysts from both OECD Member countries and non-members.

Qualitative *versus* quantitative data

5. The information collected in business tendency surveys is described as *qualitative* because respondents are asked to assign *qualities*, rather than *quantities*, to the variables of interest. For example, in a business tendency survey, respondents might be asked to assign *qualities* to the value of their order books such as “higher than normal”, “normal” or “below normal”. In a conventional industry survey, on the other hand, respondents may be asked to give *quantitative* information about their order books, such as the actual value of outstanding orders.

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1 . *European Economy, No 6*, Directorate for Economic and Financial Affairs, European Union, Brussels, 1997

2 . See, for example *Development of Business and Consumer Surveys in Central and Eastern Europe: Summary of Workshops 1991-1996*, OECD/GD(97)84, OECD, Paris, 1997.

6. It is generally much easier for respondents to give qualitative rather than quantitative information because the former does not require respondents to consult their accounting records. As a result, the questionnaires can be completed quickly and the results of the survey can be published much sooner than the results of traditional statistical surveys. This is one of the main advantages of qualitative surveys.

7. *Consumer Opinion Surveys* also provide qualitative information that has proved useful for monitoring the current economic situation. Typically they are based on a sample of households and respondents are asked about their intentions regarding major purchases, their economic situation now compared with the recent past and their expectations for the immediate future. However, questionnaire design and sampling methods for consumer opinion surveys differ from those applicable to business tendency surveys and they are not discussed in this *Handbook*.

Developments in business tendency surveys

8. Business tendency surveys have a history dating from at least the 1920s. Some of the earliest surveys were carried out by trade associations, such as the *Confederation of British Industries* and the i*fo Institut für Wirtschaftsforschung* in Germany, although the national statistical office of France, the *Institut national de la statistique et des études économiques (INSEE)*, has also played a prominent role in this area since the 1950s. Central banks – in Japan and Belgium for example – have also been carrying out business tendency surveys for some years; central bankers need information on the current economic situation that is more up to date than the statistics released by official statistical agencies. A recent trend is for more national statistical offices to conduct business tendency surveys – Canada and Australia are examples among OECD Member countries and most national statistical offices in transition countries in Europe and Central Asia now also have their own business tendency surveys.

9. One consequence of this has been greater use of standard survey techniques, notably the selection of random samples from comprehensive business registers, the use of more accurate weights in calculating the results and, in many cases, better follow-up of non-response and closer editing of replies. This said, while surveys carried out by trade associations may be less scientific, they usually benefit from closer relations with respondents and this may improve response rates and the care taken by respondents in completing the questionnaires.

10. Another important development has been the introduction of the *harmonised system* mentioned above. The questions in the harmonised surveys have been tested in a wide variety of countries and have been shown to provide reliable information. Moreover, results from harmonised surveys can be used in comparisons with neighbouring countries and trade partners and can be combined to produce indicators for country groups such as the EU-15 or the EU candidate countries.

11. Some of the early surveys covered enterprises engaged in several different kinds of activities, and this is still the case with most of the surveys carried out in Asia and Latin America. Increasingly however, there is a trend towards activity-specific surveys using questionnaires and sample selection tailored to the particular characteristics of different activities. This is the recommendation of this Handbook and the annexes contain separate questionnaires for use in manufacturing, trade, construction and other services.

12. Much of the early development and recent improvements in business tendency surveys is due to the activities of CIRET – *Centre for International Research on Economic Tendency Surveys*[3]. Founded in 1953, CIRET is a forum for leading economists and institutions that conduct and analyse business tendency and consumer survey data. As already noted the European Union – more specifically the

3. Website - http://www.ciret.org/html/info.html

Directorate General for Economic and Financial Affairs[4] has been active in designing and promoting the harmonised system and, together with OECD, in expanding the system to transition and developing countries.

Information collected in business tendency surveys

13. Compared to traditional statistical surveys, which usually cover only variables on one aspect of an enterprise's activity, business tendency surveys collect information about a wide range of variables selected for their ability, when analysed together, to give an overall picture of a sector of the economy. For example, most business surveys collect information on production, order books, new orders, stocks of finished goods, exports, employment and prices

14. The range of information covered by business tendency surveys goes beyond variables that can easily be captured in conventional quantitative statistics. Qualitative information may be collected for variables that are difficult or impossible to measure by conventional methods. Examples include:

- capacity utilisation;
- production bottlenecks;
- plans and expectations for the immediate future;
- managers' views on the overall economic situation.

15. Business cycles are an important feature of the economies of market-oriented industrialised countries. The statistical series derived from business tendency surveys are particularly suitable for monitoring and forecasting business cycles. The cyclical profiles of the series are in many cases easy to detect because they contain no trend. Usually the series are seasonally adjusted, at least to some extent, by the respondents and this adds to the smoothness of the series. This and the fact that they usually do not need revisions facilitate their use in forecasting and, in particular, in predicting turning points in the business cycle. Many survey series provide advance warning of turning points in aggregate economic activity as measured by GDP or industrial production. Such series are known as *leading indicators* in cyclical analysis.

Use of business tendency surveys

16. The basic purpose of business tendency surveys in the past was to collect information on business conditions for the benefit of respondents and this explains why many of them are carried out by trade associations. Today, business survey statistics have become a valuable tool for economic analysis for all types of users.

17. The main users of survey results are still the respondents themselves. Detailed survey results broken down by sectors of activity give them valuable information on business conditions in their own sector as seen by their competitors and about the current and future business situation in their suppliers' and users' sectors.

4. Website - http://europa.eu.int/comm/dgs/economy_finance/index_en.htm

18. Economic and financial analysts have also become major users of series derived from business tendency surveys. This is because the data are available rapidly and because some of the series provide advance warning of changes in aggregate economic activity. In addition, the survey information focuses on assessments and expectations of the economic situation by actors on the market. This is reflected in the extensive use of so called *confidence indicators* derived from business survey results. Such composite indicators summarise a selection of key survey variables in a single synthetic indicator.

19. Business tendency surveys are conducted in all OECD Member countries and they have proved a cost-effective means of generating timely information on short-term economic developments. Current economic information is of particular interest to developing countries and to countries in transition. Conventional quantitative statistics are often published with long delays in many of these countries so that policy makers cannot use them for analysing the current situation and they cannot take remedial action to avert financial and other economic crises. A reliable system of qualitative short-term indicators can therefore be seen as a valuable complement to the system of quantitative statistics.

Layout of the Handbook

20. The next three chapters deal with practical issues of designing and carrying out business tendency surveys. Chapter 2 discusses questionnaire design, Chapter 3 deals with sample selection and Chapter 4 considers possible sources of error and how these can be minimised. Chapters 3 and 4 are mainly designed for statisticians in countries conducting business tendency surveys for the first time or in countries which have limited experience in survey methodology in general.

21. Chapter 5 discusses the processing of business tendency survey results – usually in the form of "balances"– and the weighting methods used in the calculations. Chapter 6 deals with the presentation and publication of the results and the kinds of metadata that should accompany them.

22. Chapter 7 deals with the interpretation of results from business surveys, how they can be used to construct *"confidence indicators"* and how the results can be combined with quantitative statistics to produce *"composite leading indicators"*. In several counties in Latin America and Asia, business tendency surveys have been in existence for some years but rather limited use is currently made of the results. This chapter aims to encourage better exploitation of survey data for monitoring and forecasting.

23. Chapter 8 describes the harmonised system of business tendency surveys. In addition to the choice of questions, the system lays down guidelines for identification of reporting units, sample selection, sectors to be covered and the periodicity and timing of the surveys.

24. There are four Annexes:

- Annexe A contains the harmonised questionnaires recommended for four kinds of activities.
- Annexe B gives examples of questionnaires currently used for business tendency surveys in Canada, Germany, New Zealand, France, Mexico and Russia.
- Annexe C contains examples of press releases giving results of business tendency surveys.
- Annexe D gives a list of the main institutions carrying our business tendency surveys with addresses and URLs.

25. Finally, there is a glossary of technical terms and a bibliography.

2. QUESTIONNAIRE DESIGN

Introduction

26. It is obviously important to follow best practices in designing questionnaires for all surveys but it is particularly important in the case of business tendency surveys. The questionnaires are to be completed by senior managers who will not take the time to puzzle out the meaning of unclear or ambiguous questions. The layout must be attractive and the questions phrased in plain, non-technical language. A useful summary of main points in designing questionnaires is given in the OECD handbook, *Measuring the Non-Observed Economy*[5]. *Survey Sampling: a non-mathematical guide*[6], published by Statistics Canada, also provides general guidance on designing questionnaires and helpful suggestions are available on a number of web-sites.[7] The suggested wording of questions for the harmonised system is given in Annex A and examples of survey questionnaires are included in Annex B.

Choice of questions

27. Business tendency surveys can collect information about a wide range of variables for monitoring the business cycle. Priority of selection of variables goes to indicators which:

- measure an early stage of production (e.g. new orders, order books);
- respond rapidly to changes in economic activity (e.g. stocks), and
- measure expectations or are sensitive to expectations (e.g. future production plans, business climate).

28. The variables included in the survey should not only be relevant from a theoretical point of view but also in the view of the managers of the enterprises. Otherwise it will be difficult to motivate managers to participate in the survey. The number of variables should also be kept to a minimum in order to reduce response burden. For these reasons it is important to focus on a few key variables. This is particularly important if the survey is to be conducted on a monthly basis.

29. When a business tendency survey has been established on a regular basis, it can be used for *ad hoc* enquiries in response to significant shocks to the economy such as increases in energy prices, currency devaluation, changes of government and natural or man-made disasters. The special enquiry may be in the form of a separate questionnaire or the addition of questions to an existing survey. The mechanism in place for carrying out regular business tendency surveys thus provides a flexible instrument for obtaining

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5 . *Measuring the Non-Observed Economy*, (see section 6.7.3), OECD, Paris, 2002.

6 . *Survey Sampling: a non-mathematical guide*, Statistics Canada, Ottawa, 1992

7 . See for example: http://www.statpac.com/surveys/, and http://www.surveysystem.com/sdesign.htm

policy-relevant information in such situations. In what follows, however, the focus is on the design of questionnaires for regular business tendency surveys.

30. An approach that has been adopted by a number of European countries is to use a very short questionnaire each month but to add additional questions every quarter or half-year. Table 1 shows the type of variables that are most often covered in the monthly and quarterly versions of the questionnaires for surveys in *industry*[8], *construction* and *retail trade.*

Table 1. Variables typically covered in monthly business tendency surveys

Industry	*Construction*	*Retail trade*
Every month:		
Production, present tendency	Activity, present tendency	Business situation, present
Production, future tendency	Limits to production	Business situation, future tendency
Stocks of finished goods	Order books	Stocks of goods for resale
Domestic order books	Employment, future tendency	Orders placed with suppliers, future tendency
Export order books	Selling prices, future tendency	
Selling prices, future tendency		
Additional questions each quarter:		
Employment, future tendency	Months of assured activity	Employment, future tendency
Constraints on production		
Assessment of current capacity		
Capacity utilisation		
New orders, future tendency		
Exports, future tendency		
Stocks of raw materials		

31. The variables listed above can be regarded as *core* questions, but a number of additional variables are commonly covered in business tendency surveys. These are listed in Table 2.

Table 2. Other variables covered in business tendency surveys

Industry survey	*Construction survey*	*Retail trade survey*
Sales, deliveries, turnover	Technical capacity	Sales/turnover
Stocks of work in progress	Supply of labour	Income
Purchase of inputs	Own demand for labour	Prices
Lead time of deliveries	Investment in equipment	Competition in own sector
Raw material prices	Overtime	Wages
Factors limiting exports	Productivity	Financial conditions
Investment	Overdue debtors	Availability of labour
Overtime, new employment	Average costs	Operating expenses
Profitability, costs	Profitability	Profitability
Productivity	Interest rates	Investment
General business climate	Prices of raw materials	Interest rates

8 . The standard United Nations terminology is to use “industry” to cover mining and quarrying, manufacturing, electricity, gas and water production. In the literature on business tendency surveys, and in this Handbook, the term “industry” is commonly used to refer to manufacturing activities alone although in countries where they are important, mining and quarrying are also included. Electricity, gas and water production are rarely included in “industry surveys”.

Wages	Floor capacity
General business climate	Limits to activity
	General business climate

Layout of the questionnaire

Simplicity

32. Simplicity is one of the basic requirements of the questionnaire. It must be designed to encourage participation by the respondents and filling it out must take as little of the respondents' time as possible. The most successful questionnaires are very short. Often they cover only one side of standard A4 paper. Two sides - *recto verso* - should be considered the maximum. Annex C gives questionnaires (in the original language) used in several countries. They are examples of questionnaire design that have proved successful in the countries concerned.

Pre-printed answers

33. Three option multiple-choice questions are used for most variables in almost all business tendency surveys. In a few cases four or, at most, five choices may be offered. These questions normally call for a judgement on recent developments, an assessment of the current situation, or expectations for the near term future. The pre-printed answers relating to these questions may take one of the following forms.

Assessment of current situation

34. Questions on current conditions often ask for a comparison with the normal situation. The pre-printed answers may be of the following forms:

(i)	( ) above normal	( ) normal	( ) below normal
(ii)	( ) too large	( ) normal	( ) low
(iii)	( ) more than adequate	( ) adequate	( ) less than adequate

Questions posed in the above form are normally about *stock* variables such as production capacity, levels of order books or inventories.

Appreciation of past or future changes

35. The pre-printed answers asking for an appreciation of past and future changes could be as follows:

(i)	( ) up	( ) same	( ) down
(ii)	( ) improve	( ) remain unchanged	( ) deteriorate
(iii)	( ) increase	( ) no change	( ) decrease

Answers of this type are used with *flow* variables such as production, new orders, employment or selling prices. Usually the question will specify the earlier or later periods with which the present situation is to be compared – the last three months or the next six months, for example.

Production capacity and production constraints

36. Two commonly surveyed variables usually require answers in a different form. These are questions about *production capacity* or *capacity utilisation* and questions about *constraints* or *limiting factors* on production.

37. Answers to questions about production capacity or capacity utilisation are occasionally multiple choice such as "more than adequate", "adequate", "less than adequate". More commonly, answers are requested in percentage terms:

either "Present utilisation rate in percent of full utilisation is: ( ) %",

or "Present utilisation rate in percent is:( ) up to 50; ( ) 51-60; ( ) 61-70; ( )91-100".

38. Questions related to *production constraints* normally offer a list of possible problems and respondents are requested to tick one or more boxes. The pre-printed answers cover the following kinds of problems:

a) Demand constraints
Insufficient domestic demand *( )*
Insufficient foreign demand *( )*

b) Supply constraints
Shortage of equipment *( )*
Insufficient capacity *( )*
Shortage of labour *( )*
Shortage of raw materials *( )*
Shortage of capital *( )*

General instructions

39. The questionnaires should be designed to be simple to complete and as self-contained as possible. They should not require detailed instructions for completion. However, it is necessary to provide information on the following points:

- a statement regarding the confidentiality of the information supplied;
- a reminder that the questionnaire should be completed by a senior manager or owner ;
- a request that separate questionnaires should be completed for each reporting unit (establishment or kind of activity unit);
- questions that are not relevant for the activity of the enterprises should not be answered, for example questions on exports for companies that do not export.

Seasonality

40. In many industries, managers are acutely aware of the seasonal patterns affecting production, sales, stock levels, etc. and it is important to tell the respondents whether or not they should take account of this in completing the questionnaire. This information can be given as part of the general instructions that will accompany the questionnaire, but a common practice is to repeat the instruction as part of all questions where seasonality is likely to be important. For example, questions will start with a phrase such as "*Ignoring seasonal factors* are stocks of finished goods?" or "*Excluding seasonal variations* are sales?" Experience shows that this tends to reduce seasonality but does not eliminate it entirely.

41. Another approach is to ask questions without telling respondents what to do about seasonality but then ask them whether a reported tendency is purely seasonal. This is the approach used in the French (INSEE) questionnaire included in Annex C.

42. The recommendation of this Handbook is that the respondents should be asked to exclude seasonal variations but that all data collected in these surveys should be systematically tested for seasonality and, if seasonality is detected, they should be adjusted using one of the standard seasonal adjustment software packages.

Standard "harmonised" questionnaires

43. Chapter 8 describes the harmonised system of business tendency surveys that has been developed for use by member states of the European Union and elaborated by the OECD and the EU for use in transition countries in Europe and in developing countries in Asia and Latin America. Annex A shows the standard list of questions and recommended response alternatives for the harmonised system. There are at least two advantages in using the standard form – it facilitates international comparisons and the questions and answer alternatives have been tested in a large number of countries and found to produce reliable results.

3. SAMPLE SELECTION

The survey frame

44. Many business tendency surveys are carried out by chambers of commerce or employers' associations and use their membership list as the survey frame. Such surveys can only provide information about the enterprises that belong to the association and their use for monitoring developments in the entire enterprise sector depends on the extent to which the member enterprises are representative of the enterprise sector as a whole. In practice, many surveys based on membership lists have been shown to provide reliable information on movements in total output or industrial production, but the recommendation of this *Handbook* is that business tendency surveys should use as their survey frame comprehensive *business registers* of the kind that national statistical agencies maintain for their regular enterprise surveys.

45. Business registers usually record the addresses and contact details of *enterprises*, whether corporate or unincorporated, list their main *kind of economic activity* and give some measure of their *size* – usually the number of employees. Business registers may also contain information on the different establishments owned by each enterprise, which may be located in different parts of the country and which may be involved in different kinds of activity. Establishing a business register and keeping it up-to-date by adding new enterprises and eliminating those that have ceased operations, is a major task in most statistical offices, but it is not the subject of this *Handbook*. A good summary of best practices in designing and maintaining business registers is given in the OECD handbook on measuring non-observed activities.[9]; more detailed guidance is available in Eurostat publications[10] Here we assume that there is a reasonably comprehensive business register and that, at a minimum, it contains information on the addresses of enterprises, their main kinds of activity and their approximate size.

Reporting units and sampling units

46. The *reporting unit* is the part of an enterprise for which data are collected. This unit may differ significantly from the *sampling units* used to select participants in a survey and from the units to whom questionnaires are sent, the *response units*.

Reporting units

47. The basic building block for capturing the activity and location of enterprises is the *establishment unit*. "An *establishment* is an enterprise, or part of an enterprise, that is situated in a single location and in

9 . *Measuring the Non-Observed Economy*, (see section 6.6) OECD, Paris, 2002.

10 . *Business Registers for Statistical Purposes: Methodological Recommendations*, Eurostat, Luxembourg, 1996 and *Business Register Recommendations Handbook*, Eurostat, Luxembourg, December 2001.

which only a single (non-ancillary) productive activity is carried out or in which the principal productive activity accounts for most of the value added".[11]

- A local unit is derived by adding together establishments at the same location regardless of type of industrial activity;

- A *kind of activity unit (KAU)* is derived by combining the establishments carrying out the same industrial activity regardless of the location of the activity;

- Finally, by adding together all establishments of an enterprise the *enterprise unit* is derived. This unit comprises "*all* activity in *all* locations carried out by *one* legal entity.

48. To sum up, the different units of an enterprise are linked to each other as follows:

The *establishments* in *one location* sum up to the *local unit* The *establishments* in *one industry* sum up to the *kind–of–activity unit*
The *establishments* sum up to *the enterprise* The *local units* sum up to *the enterprise* The *kind–of–activity units* sum up to *the enterprise*

49. Many companies, especially smaller ones, are located at just one location and their whole activity is in one kind of activity. For these the establishment, local unit, kind of activity unit and enterprise are the same.

50. Due to restrictions in data availability, many enterprises cannot provide information for their establishments. While some enterprises can report for their local units, others can report for their kind of activity units. In some instances data may only be provided for the whole enterprise. The choice of reporting unit can influence survey results as follows:

- If the survey uses *establishments* as the reporting units, the aggregates by industry will cover all activity in each industry. In addition, aggregates for different regions will contain all the activity for that industry in that region and no activity in other regions. Basing a survey on *establishment units* is the ideal situation;

- If *local units* are used as the reporting unit, they have to be classified by their main activity. Therefore, aggregates by industry will contain both too much and too little at the same time. They will include activity in industries other than the main activity of the local units, while at the same time excluding activity in that industry at local units mainly engaged in other industries. Aggregation by region will give correct information, i.e. the same result as if *establishments* had been used as the reporting unit;

- If *kind–of–activity units* are used as the reporting units, the aggregates by industry will be the same as if *establishments* had been used. On the other hand, aggregates by region cannot be derived;

11 . See *System of National Accounts 1993 Glossary*, OECD, Paris, 2000. Ancillary activities support a productive activity and include activities such as computing, accounting or payroll services. Units that carry out ancillary services of this kind are not considered to be separate establishments but are grouped together with the establishment(s) for which they work.

- If the whole *enterprise unit* is used as the reporting unit, aggregates by industry will include activity in industries other than the main one, and exclude activity in that industry at enterprises mainly engaged in other industries. This problem with under–coverage and over-coverage will often be more pronounced if the enterprise is used as the reporting unit than when local units are used. The reason for this is that one can expect a larger and more pronounced diversity of industrial activity within an enterprise than in a local unit.

51. To summarise:

- establishment units give the correct information on both the industrial composition and regional distribution of the activity of enterprises;

- local units provide correct regional distribution, but may provide a misleading picture of the industrial structure;

- kind–of–activity units give a correct industrial structure but a faulty regional distribution;

- enterprise units can be misleading in both respects.

52. In general, *establishment units* cannot be used in practice because multi-establishment enterprises cannot provide reliable information at the establishment level. Since business tendency surveys place most emphasis on information about different industries, *kind–of–activity units* are an acceptable alternative because the industry specification and cross–country comparability will be as accurate as if true establishment units were used.

Sampling units and response units

53. As already explained, the business register from which the sample is draw will usually consist of enterprises. Enterprises are therefore the usual *sampling un*its for business tendency surveys i.e. the units that are selected for the sample. If the business register only gives information on the enterprise without details about establishments, the next step is to contact each selected enterprise in order to determine its structure and agree on the *reporting units* – i.e. the units (usually kind-of-activity-units) for which data are to be reported.

54. In some case the manager of the enterprise will be able to complete the questionnaire for all the reporting units. In other cases questionnaires will need to be sent to the manager of each unit separately. Once this has been agreed an address list can be drawn up of *response units*, i.e. the persons to whom the questionnaires are sent for completion.

Target universe

55. The target universe is determined by specifying which groups of enterprises are to be included in terms of:

- the characteristics of the enterprise, such as kind of activity, institutional form, size and location;

- the period during which reporting units must be active in order to be included in the survey. Ideally, each survey should cover all enterprises active at some time during the period(s) covered in that survey, including any forecast period.

56. In practice the target universe will consist of enterprises that were primarily engaged in a specified kind of activity at the beginning of each survey year. This means that the survey frame and the sample of enterprises should be updated every year. It should cover all types of enterprises regardless of their legal status and type of ownership.

Sample design

57. There are three methods of collecting data such that the information collected can be used to draw inferences about the target universe. These are:

- Collection of data from all enterprises. This is a costly and lengthy procedure unless the target universe is small;

- Collection of data from a sample of units that have been selected from the target universe with the intention that they should be representative of that universe. A sample of this kind is referred to as a *purposive (*or sometimes *judgmental)* sample. In order to draw inferences about the target universe using a purposive sample, a number of assumptions have to be made about the representativeness of the data collected and of the reporting units and, in general, there are limitations to the inferences that can be drawn from purposive samples when the probability of selection is not known;

- Collection of data from a random sample of units which have been selected with known probabilities of selection from among all units in the target universe. In this case no assumptions about representativeness are needed in estimating totals or averages for the target universe and, in addition, there are well known techniques for determining the precision of these estimates. This said, estimates based on random samples will only be unbiased if the business registers from which they are drawn are comprehensive and up to date.

58. A random sample may be made more efficient (a smaller sample for a given level of precision) by stratifying (dividing up) the universe into groups that have similar variance with regard to the key variables covered in the survey[12]. Usually strata are defined in terms of the size of enterprises and the kinds of activities in which they are engaged. The use of stratified random sampling is the ideal sampling method for most types of survey, including business tendency surveys. However, as explained below there are good reasons for using a modified (non-random) type of stratified sample for business tendency surveys.

Panel samples

59. Almost all business tendency surveys use a fixed panel of reporting units i.e. the same set of units is surveyed each month or quarter. Using a fixed panel rather than selecting a fresh sample each round of

12 . For detailed descriptions of stratified sampling methods see W. G. Cochran, *Sampling Techniques*, John Wiley and Sons, New York, 3rd edition, 1977 and Paul S. Levy and Stanley Lemeshow, *Sampling of Populations: Methods and Applications*, John Wiley and Sons, New York, 1999.

the survey, reduces the sample variance so that changes over time are measured more accurately. There are also great practical advantages in using a fixed panel because the initial contact with the enterprise – to determine the structure of the enterprise and agree on the reporting units – is time-consuming and therefore costly. However, once the same group of enterprises is surveyed in repeated rounds, it is no longer strictly random. This is because the target universe will change over time as new entrants appear and as existing enterprises cease trading or change their kind of activity. The panel may have been randomly selected for the first round but, strictly speaking it cannot be described as random in the subsequent rounds.

60. To cope with the problem of changes in the target universe, some surveys are based on a rotating pattern with a fixed percentage – say 25% – being replaced at regular intervals. A commoner approach is to review the sample once a year with new enterprises brought in to replace those that have ceased operation or changed their activity. While there are administrative advantages for the organisers in maintaining the same enterprises in the sample for several rounds, there is a danger of "respondent fatigue". After too many questionnaires, respondents may refuse to reply or fail to give proper consideration to their answers.

61. As already noted, the original panel will have been selected as a stratified random sample with the strata defined in terms of the number of employees. Many activities may be dominated by a small number of large firms. These are key units which should all be included in the sample with certainty and must remain permanently in the panel.

Voluntary or compulsory surveys

62. Participation in business surveys is usually voluntary and the quality of the results depends crucially on the willingness of enterprises to co-operate. Even if the selected enterprises can be forced by law to participate, it is not advisable to insist that enterprises participate against their will as this would affect the quality of the answers and the speed of the response. The more promising approach to getting high response rates is to make compliance as painless as possible through good questionnaire design and rotation of respondents. It is also important that the enterprises included in the survey should be convinced that the information they provide will be useful to the enterprises themselves in addition to any use it may have for macro-economic analysis.

Non-random samples

63. For various reasons, non-random selection is widely used for business tendency surveys, particularly those that are carried out by trade associations. While there is a substantial body of literature on the properties of random samples, the theoretical justification of purposive or quota[13] sampling is relatively undeveloped. There is however considerable practical experience which shows that non-random samples can give acceptable results when used for business tendency surveys.

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13 . A *quota samples* is one in which in which each strata identified in the target universe is represented by a specified number (a quota) of respondents. Quota samples are also described as "representative samples" because the selection of a quota of respondents from each stratum is intended to guarantee that the sample represents, or "mirrors", the target universe. Quota samples are also widely used in political opinion polls and consumer opinion surveys.

The required sample size

64. What is needed is a sample sufficiently large to give estimates of the balances and other parameters of interest, which are reliable enough to meet the requirements of users. This means that in order to be able to determine the appropriate sample size the following details are needed:

- the level of precision required by users; and
- the precision obtained with different sample sizes.

65. If random sampling is used there are well known techniques for determining the sample size, which depends, essentially, on the variance of one or two key variables collected in the survey and on the desired level of precision[14]. Based on the experience of OECD countries, a rule of thumb is that about 30 reporting units are sufficient to obtain an acceptable level of precision for each strata for which data are to be published. For example, in a survey designed to produce results for ten kinds of activity each broken down into 3 size classes, the sample size will need to be 30 x 10 x 3 = 900. In other words, 30 respondents are required for each of the 30 cells (defined by activity and size) in the target universe. In practice this is a maximum because some kinds of activity will be dominated by a few very large enterprises so that two or three responses might suffice.

66. The rule of thumb that only about 30 respondents will suffice for each strata for which separate estimates are required may seem surprising. The reason is that the required sample size depends mainly on the variance of the responses. Changes in results between consecutive surveys based on a stable panel sample have as a rule smaller variance than results derived from completely independent surveys. In addition, business survey data are measured on an ordinal scale and the variance of ordinal-scaled data is usually significantly lower than that of metrically-scaled data.

67. Table 3 below shows the sample sizes used in business surveys in a number of OECD countries. These are the initial sizes and not the final response samples which will be somewhat smaller. The table refers to the position in the mid 1990s. The sample sizes mostly refer to sampling units – usually enterprises – and the number of reporting units will be higher. It shows that quite small samples are used in several OECD countries. The countries with very large samples have either given numbers of reporting units rather than sampling units – indicated in the table by (*)– or they report results for very detailed product groups so that relatively large samples are required.

Table 3. Sample Size for business tendency surveys in OECD Countries.

Country	**Sample size**
Luxembourg	Under 300
New Zealand, Finland. Ireland	300 - 499
Australia, , Denmark, Greece, Norway	500 - 999
Austria*, Netherlands, United Kingdom, Sweden, Switzerland, Belgium	1000 - 2999
Canada*, France, Germany, Italy, Japan, Portugal*, Spain*	3000 plus

(*) For these countries the sample sizes refer to reporting units.

14 . See, for example, W.G. Cochran, "Sampling Techniques"3rd Edition, Wiley, New York, 1977.

Contacts with respondents

68. A feature of the most successful business tendency surveys is that the survey team maintains regular contact with the respondents by telephone or e-mail. Personal contacts of this kind increase response rates, and can also be used to improve the survey by identifying questions that respondents do not properly understand, questions that respondents cannot easily answer, or questions that are not seen as relevant by the respondents. In addition, personal contacts can provide feedback on how the survey can be made more useful to the respondents and on how publications of the results can be improved.

Information on sampling methods

69. The way in which the sample is selected and updated and the type of company lists from which samples are drawn have an important impact on the overall reliability of the survey results. For this reason it is essential to give users full details of the sampling and survey procedures. Chapter 6 explains the kinds of information that should be provided.

4. RELIABILITY OF BUSINESS TENDENCY SURVEYS

Quality of business surveys

70. The *quality* of survey results covers aspects such as:

- Reliability - do the results accurately measure the target variable?
- Timeliness - are the results released in time to be useful to policy makers and analysts?
- Comparability - do the results provide a consistent time series without breaks due to changes in the sample coverage, classifications or definitions?
- Transparency - can users discover how the survey was conducted and draw meaningful conclusions about the value of the results?
- Accessibility - can users easily find the results either in hard copy or electronic form?

Business survey results can usually be released quite quickly because the questionnaires can easily be completed and the surveys cover a limited number of questions. Use of the harmonised questionnaires affords comparability both over time and between countries. Suggestions on transparency and accessibility are given in Chapter 6 dealing with the publication of results. This Chapter focuses on the first quality aspect - reliability.

Reliability

71. In assessing the reliability of the results of any type of sample survey, it is customary to distinguish between *sampling* and *non-sampling* errors. Sampling errors arise because the results are based on a selection of units and not from the entire universe. Provided the survey is based on a random sample, errors arising from this source will be stochastic, i.e. they will be as likely to understate as to overstate the values that would be obtained from a complete enumeration and the mean of the errors drawn from repeated samples will be zero. Sampling errors are, therefore unbiased. In addition, there are well known techniques[15] for estimating the range around zero in which the sampling errors are likely to fall.

72. Non-sampling error, on the other hand may produce bias i.e. systematic upward or downward errors in the estimated values. Non-sampling errors arise from many sources including defects in the sampling frame because the business register is incomplete or out of date, faulty demarcation of the sampling units, improper selection of the units to be sampled, refusal be some selected units to provide information and mistakes made at the stages of collecting and editing the answers or entering them into the data base.

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15. See, for example, W.G. Cochran, *Sampling Techniques* 3rd Edition, Wiley, New York, 1977.

73. The term *reliability* refers to the total (sampling and non-sampling) error of the survey and is measured by the mean square error (MSE):

$$\text{MSE} = \sigma^2 + B^2 \qquad (1)$$

where: σ^2 = the variance of the estimates for the universe based on a random sample; and
B^2 = the bias of the estimate

74. Provided that random sampling has been used, an estimate of σ^2 (usually denoted by s^2) can be computed from the sample. The bias is the deviation between the true value and the expected value of the estimates and is the net effect of all the non-sampling errors mentioned above. It is not possible to measure the size of the bias, but the risk of errors can be reduced by testing the measurement procedure, maintaining a reliable business register and keeping non–response to a minimum.

75. If random sampling is not used, there will be no σ^2 component in the MSE but the risk of bias will be increased substantially and the total MSE may be larger than if random sampling had been used.

Non–Response

Measures of non–response

76. The simplest measure (labelled M1 here) of non–response is the percentage of enterprises in the sample from which information for the actual survey were not obtained. Units which do not respond because they have ceased to belong to the target universe (terminated, switched to another kind of activity, etc.) are not part of non–response. It is defined as:

$$M1 = [n'' / \ n] * 100 \qquad (2)$$

where: n = the number of enterprises in the survey; and

n'' = the number of enterprises which did not submit usable information.

77. This measure is useful for checking the efficiency of the data collection procedure. It is a good indicator of the importance of non–response in censuses and in sample surveys with uniform sampling fractions where all reporting units are given equal weight. For sample surveys with different inclusion probabilities for different enterprises, and for surveys where answers are weighted according to the size of the reporting units, the measure is *not* a good indicator of the importance of non-response.

78. For sample surveys with unequal inclusion probabilities for different units but equal weights for all units, a proper measure of non–response (labelled $M2$ below) is as follows:

$$M2 = \frac{\sum_{i=1}^{n''} \frac{1}{f_i}}{\sum_{i=1}^{n} \frac{1}{f_i}} \times 100 \qquad (3)$$

where: f_i = the sampling probability for unit i.

79. If, in addition, responses are weighted by the size of the reporting units, the correct measure to use (called $M3$ here) is:

$$M3 = \frac{\sum_{i=1}^{n''} \frac{1}{f_i} w_i}{\sum_{i=1}^{n} \frac{1}{f_i} w_i} \times 100 \qquad (4)$$

where: w_i = the size weight for unit i.

Handling non–response

80. Handling of non–response should be based on three rules:

Rule 1: Devote sufficient resources to reduce non–response to an acceptable size.

Rule 2: Separate non–response from over–coverage (terminated units or units not belonging to the target universe included in the sample).

Rule 3: Check if reporting units with special characteristics (for instance particularly successful enterprises) are over or under-represented in non–response

The effect on the distribution of replies among three response alternatives when different ways are used to adjust for non–response is illustrated in Table 1 below.

Table 1. Relative distribution of answers to a question in a business tendency survey

Fictional data, percentage points

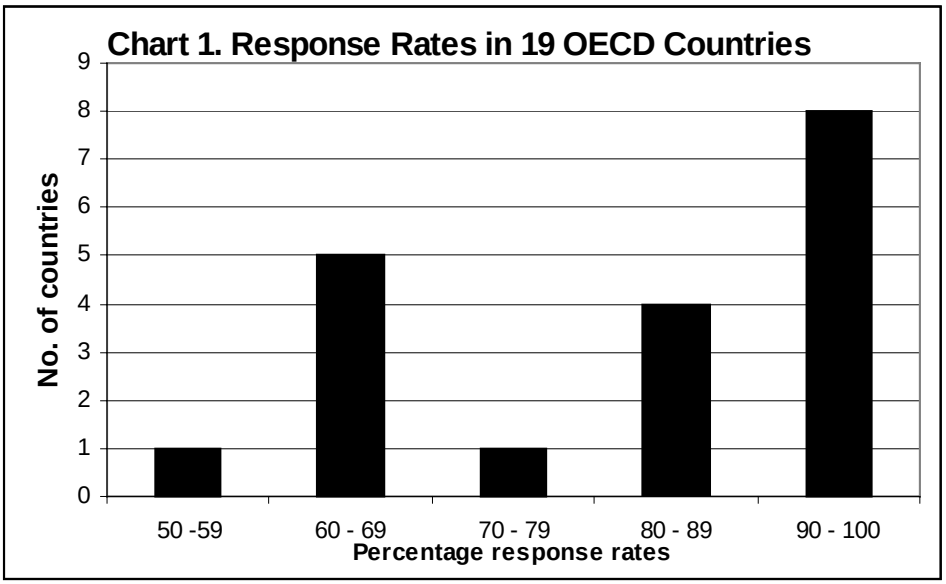
	UP	SAME	DOWN	NON–RESPONSE	BALANCE	TOTAL
Actual response	30	40	10	20	+ 20	100
Method of adjustment:						
1. Non–responding enterprises are assumed to have the same distribution over "up", "same", "down" as the responding enterprises;	38	50	12	--	+ 26	100
2. All non–responding enterprises are assumed to have replied “up”;	50	40	10	--	+ 40	100
3. All non–responding enterprises are assumed to have replied “same”;	30	60	10	--	+ 20	100
4. All non–responding enterprises assumed to have replied “down”;	30	40	30	--	0	100

81. The above table illustrates the theoretical maximum uncertainty introduced by non–response. In practice alternative 1 ought to be reasonably close to the truth. It means that an automatic adjustment for non–response is made at the estimation stage by using the number of *responding* units in the stratum under consideration in calculating the percentage reporting “up” (+), “same” (=) and “down”(–).

82. If non–response can be expected to be systematic, in the sense that units which have had or are expecting an especially good or bad development are also an unduly large part of non–response, then special measures need to be taken in order to avoid bias. One possible approach is be to construct a separate "non–response stratum", and take a repeat sub–sample from this stratum for which further strong efforts are made to collect data. This information can then be used to make separate estimates for this "non–response stratum". Useful reviews of methods for dealing with non-response are given in Kalton (1983)[16] and Lessler and Kalsbeek (1992)[17].

Response rates in practice

83. Chart 1 shows response rates achieved in business tendency surveys in 19 OECD countries. Seven countries had response rates of below 80% and six below 70%. At the upper end, only one country claimed a 100% response rate, with five recording response rates of 90%. The data refer to the mid-1990s but while response rates will have changed for individual countries the overall picture is probably still valid.



Measurement Errors

84. Measurement errors are generated by questionnaires and respondents. Errors stemming from the questionnaire may be caused by:

a) ambiguous phrasing of questions;

b) unclear layout of questionnaire.

16. Kalton, G. *Compensating for Missing Survey Data*, Anne Arbor, MI:. Institute for Social Research, University of Michigan, USA, 1983.

17. Lessler, J.T. and Kalsbeek, W.D. *Non-Sampling Errors in Surveys*, (Chapters 6 -8), Wiley and Sons, New York, 1992

Errors stemming from the respondent may be caused by:

c) insufficient knowledge to answer correctly;
d) lack of motivation to report correctly.

85. Problems a) and b) can be reduced to a large extent by using the Harmonised Questionnaire since the format of the questions has been widely tested in many countries and over several years. Problem c) can be minimised by using the kind of activity unit (KAU) as the reporting unit and collecting the information from members of top management or their close associates. Users may sometimes demand information which, though useful for analytic purposes, may go beyond what the respondent can reasonably be expected to know. Such pressures should be resisted.

86. The best way to minimise cause (d) is to demonstrate that the data produced from business tendency surveys are useful for the enterprises themselves. To do this, organisations conducting the surveys need to identify what information enterprises want to obtain for their own purposes. The questions included in the harmonised questionnaires have generally been found to meet this requirement.

87. If the questions are designed carefully there is little risk of any serious measurement error in business tendency surveys. The reason for this is that most of the questions relate to an assessment of levels ("too high", etc.), or the direction of change ("up" etc.) and this information is less subject to error compared with data on levels or changes in quantitative terms.

88. Finally, it should be stressed that the most efficient strategy for reducing measurement errors is to eliminate possible causes of such errors during the survey design stage. In this respect it is important to pilot test questionnaires, instructions to respondents, and processing procedures before starting the survey.

Processing Errors

89. Processing errors may be introduced during:

- data entry;
- data editing;
- data tabulation.

90. Methods of avoiding errors at the **data entry stage** depend on the data collection method used. For personal and telephone interviews, the best approach is to use computer assisted personal interview (CAPI) and computer assisted telephone interview (CATI) methods and to build logical and consistency controls into these systems. When respondent are asked to report directly to a computer from a button telephone, the same types of controls should be built into the computerised dialogue.

91. Regardless of the method of data collection used, the questionnaire should be designed so that correct data entry is facilitated. This means that questions and replies should be close together without any ambiguity as to which question a particular reply refers to. It is strongly recommended that practical tests involving the persons actually performing the data entry should be made before the questionnaire is finalised.

92. It might seem somewhat odd for **data editing** to be listed as a source of error. It is true that it has quite the opposite purpose, namely to find and eliminate errors in the primary data. However, there is a risk that errors are introduced by making the wrong adjustment. The risk of introducing errors into the data, by changing correct data at the editing stage, is best avoided by strictly adhering to logical controls and checking apparent logical errors and other inconsistencies with the respondents before any adjustment are made. The general rule is that, whenever possible, editing should be done at the same time as the data are entered in the database. In this way, errors at registration can best be detected and eliminated directly when they arise.

93. It is important to record the errors that are detected in the editing process. This helps to identify areas where improvements are required in the questionnaires or in the instructions to respondents. In general, the need for editing of business tendency survey information is significantly less than that required for quantitative surveys because, as noted earlier, it is easier for respondents to supply the information that is being sought. Useful guidelines on editing procedures are given in *Working Paper 18* of the United States Office of Management and Budget.[18]

94. The risk of error at the **data tabulation** stage arises due to use of incorrect estimation formulae, incorrect parameter values in the formula, or incorrect programmes for processing the individual records. The first cause can be avoided by using the correct formulae and by working together with computer specialists developing the data processing software for the survey. The second cause of this type of error can only be eliminated by careful "proof–reading". The third problem is avoided by testing the software systems on a trial set of data before accepting it for actual use.

18. Data Editing in Federal Statistical Agencies, Sub-Committee on Data Editing in Federal Statistical Agencies, Federal Committee on Statistical Methodology, published by the Statistical Policy Office, Office of Management and Budget, Washington D.C. May 1990.

5. PROCESSING THE RESULTS

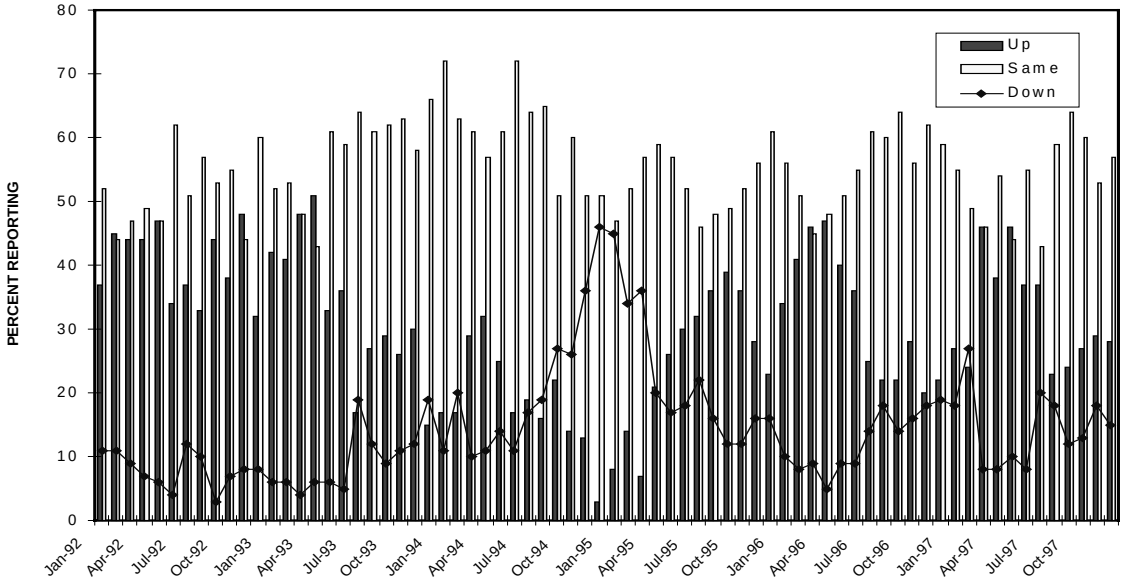
Introduction

95. The basic results for a question of the multiple-choice type are obtained in the form of three or more percentages according to the number of reply options. It is customary to convert these into a single number and the first part of this Chapter discussed the various ways in which this can be done. The next step is to check the time series for seasonality and, if necessary, de-seasonalise the series. Weighting is the other step in processing the results. In aggregating *qualitative* data, the weighting system is somewhat more complicated than in the case of *quantitative* data. This is explained in the last part of the Chapter.

Converting multiple-choice questions into a single time series.

96. For a single point in time, the percentages obtained from a multiple-choice question – e.g. X% up; Y% same; Z% down – have limited significance, but changes over time in reply percentages signify a change in the variables surveyed. Thus business tendency survey data only become useful for analytic purposes when they are presented in the form of a time series. However it is difficult to interpret the movements over time of all three percentages when they are presented simultaneously. Chart 1 demonstrates this.

CHART 1. PRODUCTION TENDENCY
REPLAY OPTIONS:UP, SAME, DOWN



Source: *The Report on Business*, National Association of Purchasing Management, United States

97. Because of the difficulty of interpreting all three percentages, business tendency survey results are normally converted into a single number. The two commonest ways of doing this are to use "Balances" (also called "Net-Balances") or "Diffusion Indices".

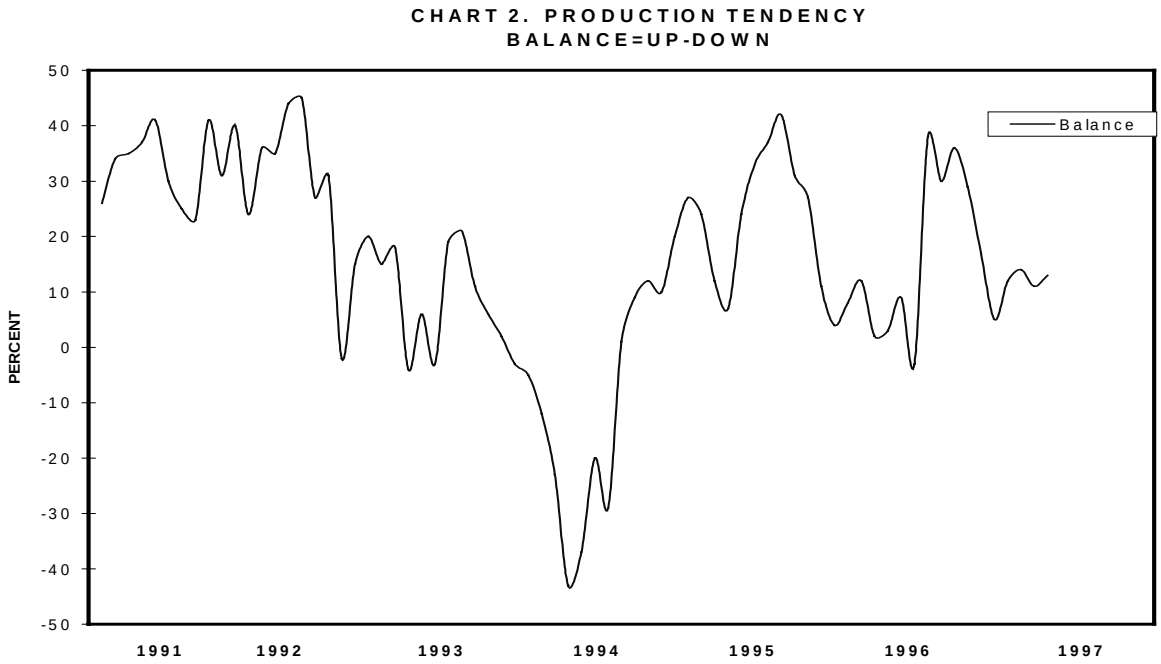
Balances

Three reply options

98. In most business tendency surveys, respondents have three reply options such as *up* or *same, down*, or *above normal, normal, below normal*. For convenience we denote *up/above normal* by (+), *same/normal* by (=) and *down/below normal* by (-).

99. The first step is to convert the numbers of answers to each of the three reply options into percentages. For example, if there are 200 respondents and 40 have replied (+), 60 (=) and 100 (-), in percentage terms these become 20, 30 and 50 respectively. The net balance is then calculated by subtracting the (-) percentage from the (+) percentage, i.e. 20 - 50 = -30

100. Chart 2 shows the balances for the same data given above in Chart 1. Compared with the simultaneous display of all three percentage in Table 1, the balances give a much clearer picture of the trends and turning points.



Source: *The Report on Business*, National Association of Purchasing Management, United States

Four-plus reply options

101. If respondents are offered more than three choices – such as *much better, better, same, worse, much worse* – balance are calculated in the same way as in the three option case. The only difference is that the five options are assigned weights such as 1, 0.5, 0, -0.5, -1 going from *much better* to *much worse*. In

practice, four or more reply options are used mainly in consumer opinion surveys. Business tendency surveys, including those using the harmonised questionnaires, almost invariably give respondents only three choices. In what follows therefore, it is assumed that the three-option approach is being used.

102. Note that in the calculation of balances the (=) replies are discarded. Experience in the OECD countries has shown that this loss of information is unimportant for most uses of business tendency survey data. For cyclical analysis, the use of the balance is both practical and entirely adequate. However, for a given balance, the changes in the percentage of (=) replies can be interpreted as indicating changes in the degree of uncertainty among respondents. If it is desired to retain this information for users, one possibility is to show the percentage of (=) replies either alongside or below the balances. Table 1 is an example of how this can be done.[19] The balances are shown in the first (clear) part of the column and the percentage of (=) answers in the second (shaded) part.

Diffusion indices

103. As explained, *balances* (B) are calculated as:

$$B = 100 (P – N), \quad (1)$$

while *diffusion indices* (DI) are calculated as:

$$DI = 100 (P + E/2), \quad (2)$$

where P is the fraction of (+) replies in the total,

N is the fraction of (-) replies in the total, and

E is the fraction of (=) replies in the total.

104. Balances can take values from –100 to +100, while diffusion indices range from 0 to 100. The midpoints are, respectively, 0 and 50. Both indices move in the same way over time but, because the range for diffusion indices is narrower than for balances, diffusion indices are flatter than balances when shown in graphical form.

105. Since $E = 1 - P - N$, rearrangement of the terms shows that:

$$B = 2 (DI – 50) \text{ and} \quad (3)$$

$$DI = (100 + B) / 2. \quad (4)$$

19. The table is taken from the OECD quarterly publication, *Indicators of Industry and Services / Indicateurs de l'industrie et des services.*

Table 1. Publication of BTS data showing (=) reply percentages

	2000												2001																	
	JUL		AUG		SEP		OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		OCT	
Judgements on orderbooks — Jugements sur les carnets de commande																																
Canada	-2	76					-12	67					-25	54					-33	53					-32	53					-46	45
Mexique																																
Etats-Unis																																
Australie																																
Japon					10	62					10	64					-5	69					-16	66					-33	57		
Corée																																
Nouvelle-Zélande																																
Autriche	-11	52	-11	52	-5	54	-9	50	-5	54	-5	53	-17	51	-20	56	-20	53	-22	49	-26	50	-25	53	-29	50	-30	51	-35	49	-38	45
Belgique	6	64	3	63	8	64	-1	69	-6	70	0	68	-3	67	-5	67	-8	70	-17	67	-21	63	-19	65	-22	60	-22	62	-24	62	-30	58
Rép. tchèque	19	63	8	70	26	60	14	76	29	61	9	67	24	54	4	60	19	63	17	61	13	63	-3	83	-4	84	-4	84	-3	85	-22	66
Danemark	12	62	13	65	14	62	16	56	9	59	11	65	4	72	7	69	13	59	1	53	-4	62	-7	61	-5	55	-10	64	-10	60	-25	55
Finlande	25	65	36	48	26	58	19	67	19	63	2	70	-2	72	-9	65	-15	61	-12	68	-11	65	-24	56	-34	52	-24	64	-27	65	-30	64
France	22	62	..	..	23	59	15	62	15	60	10	62	6	62	11	65	8	64	3	63	-1	59	0	60	-6	64						
Allemagne																																
Grèce																																
Hongrie																																
Irlande																																
Italie																																
Luxembourg																							-26	40	-33	39	-31	41	-27	61		
Pays-Bas																																
Norvège					6	32					12	32					-4	31					5	36					-9	34		
Pologne	-57	40	-57	40	-55	40	-61	34	-59	37	-63	34	-68	27	-72	26	-75	23	-72	26	-73	25	-72	26	-73	25	-73	25	-70	28	-73	24
Portugal	-4	72	-4	74	-5	79	-5	75	-2	78	-6	76	-10	78	-13	77	-14	72	-14	72	-17	71	-15	69	-16	68	-14	72				
Rép. slovaque	-9	81	-5	81	-3	85	-7	81	-6	82	-19	73	-14	78	-22	68	-11	77	-7	85	6	80	14	68	-7	85	-2	88	-2	90	-3	91
Espagne	5	69	-1	73	4	74	4	74	0	74	-4	72	-6	68	-5	59	-4	68	-8	68	-1	69	-6	68	-4	70						
Suède	18	54	18	51	11	52	11	53	7	51	2	54	-23	47	-26	48	-27	48	-32	50	-35	45	-34	49	-30	51	-31	56	-23	48	-37	42
Suisse	4	67	0	63	5	63	3	67	0	66	-3	64	-3	71	-7	67	-5	68	-9	64	-13	62	-14	62	-16	63	-29	55	-36	53	-37	51
Turquie					-16	63					-24	66					-20	53					-9	71					-2	59		
Royaume-Uni																																
Amérique du Nord																																
Sept Grands																																
Union européenne																																
OCDE-Europe																																
OCDE-Total																																
Total order inflow — Volume total des commandes reçues																																
Canada	6	72					-5	66					-35	39					-25	53					-29	50					-42	44
Mexique																																
Etats-Unis																																
Australie																																
Japon																																
Corée																																
Nouvelle-Zélande																																
Autriche	7	75					14	54					7	55					2	51					-9	50					-21	47
Belgique	3	51	1	55	8	54	3	53	0	52	5	49	-6	52	9	53	-6	54	-10	50	-25	49	-8	50	-17	49	-10	52	-11	47	-20	44
Rép. tchèque	0	54	1	75	21	59	0	62	36	54	0	70	-17	57	-5	69	32	54	36	54	13	71	10	70	10	70	3	79	2	72	-19	55
Danemark	33	43					23	49					17	51					0	42					5	45					-15	39
Finlande	28	40					23	31					-17	55					-23	51					-9	35						
France	33	49					34	44					15	49					11	53					4	50						
Allemagne																																
Grèce																																
Hongrie																																
Irlande																																
Italie																																
Luxembourg																	-8	66					-26	38					-26	38		
Pays-Bas																																
Norvège					-3	39					8	37					-8	35					5	44					-8	40		
Pologne	-9	60	2	59	1	60	-3	62	-9	62	-18	55	-23	51	-24	53	-11	56	-10	54	-7	54	-18	60	-19	53	-11	54	-13	59	-12	60
Portugal	2	68					-2	68					-2	62					-14	64												
Rép. slovaque	47	41	44	46	43	39	33	47	8	70	37	47	51	43	52	46	36	56	25	69	19	61	9	73	37	57	33	61	19	65	5	79
Espagne	..	..	..	..	6	78	..	..	..	..	10	74	..	..	..	..	14	70	..	..	..	..	6	72								
Suède	35	50	27	58	16	59	17	58	11	62	1	60	-12	55	-17	56	-18	53	-24	47	-17	54	-27	51	-11	51	-10	57	-14	54	-20	51
Suisse	-11	49	0	49	16	42	7	39	5	39	-17	40	22	31	5	37	8	41	-9	47	8	43	-8	44	-6	42	-30	37	-14	33	-3	30
Turquie					19	49					-5	52					-36	38					-7	43					-3	37		
Royaume-Uni																																
Amérique du Nord																																
Sept Grands																																
Union européenne																																
OCDE-Europe																																

106. From these last two equations it is clear that balances and diffusion indices have exactly the same information content. A diffusion index is just another way of presenting the same information that is contained in the balances, although the scales are different. In practice, balances are the commonest way of presenting the results of business tendency surveys and remainder of this *Handbook* deals only with balances. Balances can, however, be easily converted to diffusion indices using equation (4).

Other methods of conversion

107. While balances and diffusion indices are used in reporting the results of almost all business tendency surveys, there is a considerable body of research into alternative methods which assume that the answers to qualitative surveys are drawn from various kinds of probability distribution functions[20]. This research has mainly focussed on the use of qualitative information from consumer opinion surveys for predicting price inflation, but the methods used are in principal applicable to data from business tendency surveys and, as noted below, they have been used with business tendency survey data for Italy to compare balances with alternative methods for tracking changes in industrial production.

108. The basic premise, is that each respondent forms a subjective probability distribution function of the variable concerned – such as future changes in production, selling prices, etc.– and answers the survey in the light of that distribution. Three types of empirical assumptions are then required to infer the parameters of the probability distribution functions that the respondents are using. These are:

- The *expectations distribution* which describes how mean expectations are distributed across individuals in the survey;

- The *response function* which maps the parameters of the individual probability distribution functions into their answers to the survey questions. A key assumption underlying these response functions is the size of the expected change that will prompt a "change" as opposed to a "no-change" answer;

- Finally *scaling factors* are needed because the survey percentages are not sufficient to identify all the parameters of interest. Various assumptions can be made in selecting the scaling factors such as that the resulting time series must give an unbiased estimate of the reference series – industrial production or price inflation, for example – over the available time series.

109. In a research study at the former *Istituto Nazionale per lo Studio della Congiuntura* of Italy[21] the performance of several alternative measures using probability distribution functions were compared with

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20 . Pioneering work was reported by H. Theil in "On the Time Shape of Economic Microvariables and the Munich Business Test" in *Revue – Institut International de Statistique*, No. 2-3, 1952. See also John A. Carlson and Michael Parkin, "Inflation Expectations" in *Economica*, May 1975; Raymond P.H. Fishe and Kajal Lahiri, "On the Estimation of Inflationary Expectations from Qualitative Responses", in *Journal of Econometrics 16 (1981) 89 - 102*. North-Holland Publishing Company, 1981; G. S. Maddala, *Limited-dependent qualitative variables in econometrics*, Econometric Society Publication No. 3, Cambridge University Press, Cambridge, United Kingdom 1983; and R. A. Batchelor and A. B .Orr, "Inflation Expectations Revisited" in *Economica*, August 1988. (The summary of these methods in the next paragraph is based on this last article)

21 . Enrico D'Elia, "*La Quantificazione dei Risulatati dei Sondaggi Congiunturali: Un Confronto Tra Procedure*" in *Rassegna di lavori dell' ISCO, Istituto Nazionale per lo Studio della Congiuntura*, Rome, Giugno 1991.

both the index of industrial production for Italy and with the balance time series. The study reported very high correlation between the balances and the alternative methods when three-option replies were used but somewhat lower correlation when the various measures were based on five-option replies. This is a comforting finding since most business tendency surveys, including the harmonised system, use three option replies.

Seasonal adjustment

110. Although the usual practice is to ask respondents to adjust their answers for seasonal effects, time series of balances from business tendency surveys usually show some residual seasonality. This *Handbook* therefore recommends that balance series should be systematically reviewed for seasonality using one of the standard software packages such as X-12-Arima or Tramo/Seats[22]. This should be done before moving to the next processing stage - weighting.

Weighting of results

111. Two kinds of weights are used in processing the answers to qualitative questions. Here they are termed *sample weights* and *size weights*.

Sample weights

112. Sample weights are the inverse of the probability with which each reporting unit has been selected. Suppose, for example, that the target universe has been divided into two groups – large and small reporting units. If all large reporting units are selected for the sample (probability of 1) and if only one in ten are selected from the small reporting units (probability of 0.1), the answers of the reporting units must be multiplied by 1/1 =1 and 1/0.1 =10 respectively. Higher weights are given to the small reporting units because they have to represent all the other small reporting units that were not selected for the sample.

113. If the reporting units are selected on a simple random basis, e.g. without stratifying the target universe into large and small units as in the example above, the probability of selection is the same for all units and the weights are therefore identical. In this case no sample weights need to be used in processing the answers. The recommendation in this *Handbook*, however, is to use a stratified random sample and in this case, sample weights are required reflect the probability of selection for units in the different size-strata.

Size weights

114. Size weights are used in processing qualitative answers because the importance of the answers is assumed to depend on the size of the reporting units. The answers from a large firm carry more weight than answers from a small one.

115. Strictly speaking, the variables to be used as size weights should depend on the survey variable concerned. For example, questions about production in a given reporting unit ought to be weighted by the relative value of production by that unit in the branch as a whole, questions about employment with the

22 . Eurostat has produced a seasonal adjustment interface for Tramo/Seats and X-12-Arima, called *Demetra*. This is available on the Eurostat website: http://forum.europa.eu.int/irc/dsis/eurosam/info/data/

number of persons employed, etc. It would be costly, or even impossible, for most countries to obtain such a set of weights for each reporting unit. Furthermore, practical experience has shown that the balances (B) are not very sensitive to the choice of weighting variables. In practice it is sufficient to use a single variable reflecting the general economic importance of the enterprise in weighting all the survey answers.

116. If a single variable is to be used, value added should probably be used as the weighting variable because the business tendency survey results will then most closely reflect movements in GDP. At the branch level (e.g. *manufacture of footwear and clothing*) the commonest practice is to use numbers employed. This is the most widely available size measure and, within branches, numbers employed are closely related to value added. However, in aggregating branches to higher levels (e.g. *manufacture of consumer goods* or *total manufacturing*) it is recommended that value added should be uses as the weighting variable.

117. Information on value added in the different branches will usually come from national accounts sources industry statistics. Information on numbers employed may be available as one of the characteristics included in the survey frame. Alternatively, the business tendency survey questionnaire used for the first month or quarter of the year can be used to collect information on employment. The information can be requested in size classes rather than exact numbers so that the information can be easily provided without recourse to accounting records.

118. Note that size weights are not generally required in processing answers to quantitative questions because the answers already reflect the size of the reporting unit. Data reported on the value of sales, tons of output, numbers employed, etc. will be in larger values, volumes or numbers for large firms than for small ones. All the answers to the harmonised questionnaires, however, require size weights. Note this also applies to questions which do not use three point scales, such as questions on capacity utilisation. In assessing the overall level of capacity utilisation for an industry, the percentage utilisation in large firms must be given more weight than the utilisation rates in small ones.

Processing without weights

119. If reporting units have been selected with unequal weights – stratified or PPS sample design – the sample weights and the size weights will work in opposite directions. The sample weights will increase the weight of the small reporting units and the size weights will reduce their weight (and *vice versa* for large units).

120. Because the two types of weights tend to cancel each other out, unweighted results are sometimes calculated. It is simpler and therefore quicker to process without weights and the use of weights may introduce errors if they are out of date or otherwise erroneous. This may be legitimate at a disaggregated, branch level but is not recommended for calculating results at higher levels of aggregation. In combining results for branches to sector totals, weights – preferably value added shares – should always be used.

Weighting methods in practice

121. The Harmonised questionnaires use three point scales for all but a few questions and this *Handbook* recommends that the answers to these questions should be expressed as balances (B) between the (+) and (-) answers. This section explains how balances are calculated using sample and size weights. It starts by explaining the **general method** which is applicable even in the most demanding case when each

respondent is given an individual weight. It is followed by a description of a **simplified method**.[23]. This is followed by an illustrative example of the general and simplified methods.

General method

122. In situations where the survey units are the reporting units and simple random sampling is used so that the inclusion probability is the same for all reporting units, we get:

$$B = \sum_{i=1}^{n} \left(x_i / n \right) \quad (1)$$

where: B is the balance for answers to a specific question,

x_i takes values of +1, 0 or –1 depending upon the answer given by enterprise i, and

n is the number of reporting units in the sample

123. By multiplying the B s estimated from formula (1) by 100 the result is the balances expressed as percentages.

124. If stratified random sampling or Probably Proportional to Size (PPS) sampling is used, the formula gets slightly more complicated as follows:

$$B = \sum_{i=1}^{n} \left(1 / f_1 \right) \times \left(x_1 / N \right) \quad (2)$$

where the additional symbols are defined as follows:

f_1 = the sampling probability of reporting unit i; and

N = the total number of reporting units in the sampling frame (ideally identical with the target universe).

125. Both formulae (1) and (2) result in balance estimates that give equal weight to all respondents. For opinion poll type questions where the "one man, one vote" approach is deemed to be the most appropriate these unweighted estimates are the best choice. In business tendency surveys, however, the economic significance of the replies from different enterprises is linked to the size of the enterprise -- the larger the enterprise the more important is its reply. As noted above, size weights are therefore required.

126. The fact that the survey units will usually be the enterprises but the reporting units will be the *KAU*s belonging to the enterprise, complicates the estimation of the *B* s. We cannot denote the answer to a question provided by enterprise "i" with "x_i", because there is a separate answer for each *KAU* of the enterprise. The notation "x_{ik}" has to be used instead to denote the answers of enterprise "i" regarding its activity in industry "k".

23 . Mr. Åke Lònnquist, former Director at Statistics Sweden, has reported on sampling and weighting methods at several joint OECD-EU workshops and developed the illustrative example used in this Chapter.

127. The formula for estimating the balances of industry k, (B_k) assuming simple random sampling and without weighting for the size of individual *KAU* units will be:

$$B_k = \sum_{i=1}^{n_k} (x_{ik} / n_k) \qquad (3)$$

where: x_{ik} = +1, 0 or –1 depending upon the answer given by enterprise i regarding its activity in industry k; and

n_k = the number of *KAU*:s in the sample which are classified to industry k.

128. When sampling with varying probabilities is used, the formula will change to:

$$B_k = \sum_{i=1}^{n_k} (1/ f_i \times x_{ik}) \Big/ \sum_{i=1}^{n_k} (1/ f_i) \qquad (4)$$

where $\sum_{i=1}^{n_k} (1/ f_i)$ is an estimate of N_k, the number of *KAU*s classified to industry k in the target universe.

129. If it is intended to show balances separately for size groups (*s*) within industries (*k*) the formula for the balance (B_{ks}) will be:

$$B_{ks} = \sum_{i=1}^{n_{ks}} (1/ f_{iks} \times x_{iks}) \Big/ \sum_{i=1}^{n_{ks}} (1/ f_{iks}) \qquad (5)$$

where: f_{iks} = the sampling probability for enterprise i in industry k belonging to size group *s*; and

x_{iks} = +1, 0 or –1 depending upon the answer given by enterprise i belonging to size group s for its activity in industry k.

130. When each report unit (*KAU*) is given a weight according to its size, the estimates of the balances (B_{ks}) from the sample will be:

$$B_{ks} = \sum_{i=1}^{n_{ks}} (1/ f_{oks} \times w_{iks} \times x_{iks}) \Big/ \sum_{i=1}^{n_{ks}} (1/ f_{iks} \times w_{iks}) \qquad (6)$$

$$B_k = \sum^{s} (w_{ks} \times B_{ks}) \Big/ \sum^{s} w_{ks} \qquad (7)$$

where $$w_{ks} = \sum_{i=1}^{n_{ks}} (1/ f_{iks} \times w_{iks}) \qquad (8)$$

$$B = \sum^{k} \left(w_k \times B_k \right) \Big/ \sum^{k} w_k \qquad (9)$$

where $w_k = \sum^{s} w_{ks}$ (10)

131. In order to facilitate international comparability, when cut–off limits for sampling varying from country to country, it is recommended that countries apply stratified random sampling with the strata defined by employment, and to use at least the following three strata:

- 1–19 employed
- 20–249 employed
- 250 or more employed

132. This has the additional advantage of allowing the production of international comparisons by size of the enterprises. Countries using weighted estimates may need to stratify further.

133. In summary, it is recommended that countries use formulas (6), (7) and (9) for estimating the balances. If the w_{ks} values (total value added or employment in size group *s* of industry k) and/or the w_k values (total value added or employment in industry k) are known from other sources, these values should be used for weighting rather than the estimates of them derived from the sample.

Simplified method

134. To simplify the computation of balances for the different industries the following simplified method is sometimes used. It is easier than the general method outlined above because it uses the same weight for all reporting units in each stratum and does not require detailed weighting information for each reporting unit. It is particularly suitable for use by research institutions that may not have access to the more detailed information on enterprises and KAU s that is available to official statistical agencies.

135. First, for every size group of reporting units within an industry the responses of each reporting unit are multiplied by the inverse of their sampling fraction ($1/f_i$). This fraction (f_i) is the sampling probability of the enterprise they belong to. For each question this gives an unbiased estimate of the number of reporting units in the target universe which would have responded (+), (=) and (-) in a comprehensive survey. These numbers - denoted here as $N^*_{ks}{}^{(+)}$, $N^*_{ks}{}^{(=)}$ and $N^*_{ks}{}^{(-)}$ respectively - sum up to N^*_{ks}, which is the estimate from the sample of the number of reporting units in the universe which belong to size category *s* of industry *k*[24]. In what follows these groups of reporting units are called *report strata*.

136. Second, for each report stratum (R_{ks}) the relative frequency of each response is computed. Denoting the relative frequency of response (+) by $A^{(+)}$ etc. we get:

24. An * after a symbol for a variable indicates an estimate of the size of that variable while the symbol without an * indicates the true size of the variable.

$$A_{ks}^{(+)} = \frac{N*_{ks}^{(+)}}{N*_{ks}^{(+)} + N*_{ks}^{(=)} + N*_{ks}^{(-)}} \qquad (11)$$

The analogous expressions apply to $A_{ks}^{(=)}$ and $A_{ks}^{(-)}$.

137. The balance for report stratum R_{ks} is:

$$B_{ks} = A_{ks}^{(+)} - A_{ks}^{(-)} \qquad (12)$$

138. Third, from an external source (usually the frame from which the sample was drawn) the number of employees in each report stratum is computed. This number is used as weight for the stratum.

139. Fourth, in each industry (k) the balance (B_{ks}) of each report stratum (R_{ks}) is multiplied by the weight for the stratum (w_{ks}) and the products are added together for the industry. The resulting sum divided by the total weight of the industry ($W_k = \Sigma w_{ks}$) is the balance for this industry, B_k. The formula for this is:

$$B_k = \sum^{s} (w_{ks} \times B_{ks}) / W_k \qquad (13)$$

140. If information is wanted about the weighted relative frequency for each response alternative in industry k, $A_k^{(+)}$ etc. can be estimated in exactly the same way by substituting $A_{ks}^{(+)}$ etc. for B_{ks} in formula (13). Subtracting the estimate for $A_{ks}^{(-)}$ from that for $A_k^{(+)}$ gives the same value for B_{ks} as the direct calculation according to (13) described above.

141. Aggregating industries to groups and totals is done in exactly the same way as when the general method is used, i e formula (9) is applied.

142. The simplified method assigns all report units in a given stratum the same weight according to the number of employees in that stratum. Therefore it is recommended that the largest size group (200 or more employees) should be sub-divided into 200-499 and 500 or more employees, when the simplified method is used.

Numerical illustrations

143. This section contains numerical illustrations of the two calculation methods – general and special – described above. In order to show the differences and similarities between the two methods the same set of data has been used in both cases.

The numerical data

144. The assumptions about the size and composition of the universe and the design and size of the sample are recorded in Table 1 below. The sample described there is a stratified random sample in which

enterprises are the sampling units. Stratification has been done by industry (Industry A and Industry B) and by two size groups with enterprises employing 250 or more persons in size group 1 and enterprises employing 1 - 249 persons in size group 2. Each enterprise consists of one or more KAUs which are the reporting units. Enterprises have been classified to the industry which accounts for the largest proportion of their employees.

Table 1. The target universe, the sampling and the reporting units

Industry and size group	Number of enterprises in the universe	Number of enterprises (survey units) in the sample	Number of KAUs (reporting units) in the sample
Industry A: size group 1	2	2	6
size group 2	20	2	3
Industry B: size group 1	6	2	3
size group 2	30	5	8
TOTAL	58	11	20

145. It is assumed that the information recorded in Table 2 is available from external sources.

Table 2. Report unit data for the target universe. Value added by industry and employment by industry and size group

Industry and size group of establishments	Value added	Number of employees
Industry A: size group 1	4.000 mln $	2.000
size group 2		2.500
Industry B: size group 1	16.000 mln $	5.000
size group 2		3.000
TOTAL	20.000 mln $	12.500

146. The 11 enterprises and 20 reporting units, which the sample consists of according to Table 1, are listed in Table 3 below. The enterprises are numbered 1 - 11 and the reporting units belonging to enterprise 1 are numbered 1.1, 1.2 and 1.3, those belonging to enterprise 2 are numbered 2.1 and 2.2. etc. The reporting units belonging to the same enterprise all have the same sampling probability as the enterprise to which they belong. Therefore the contents of column 8 is the same for all reporting units belonging to the same enterprise and identical with column 4 for that enterprise. On the other hand, reporting units belonging to the same enterprise might belong to different industries and size groups. Examples of this are included in the list.

Table 3. List of enterprises and report units with data for numerical illustration of two weighting and estimation methods in BT-surveys

Enterprises				Reporting units					
No	Industry	Size group	Sampling Probability	No	Industry	Size group	Sampling Probability	Weight (Number of employees)	Response to question Q
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9	Col 10
1	A	1	1/1	1.1	A	1	1/1	600	+ 1
				1.2	A	2	1/1	100	0
				1.3	B	1	1/1	300	– 1
2	A	1	1/1	2.1	A	2	1/1	160	0
				2.2	B	1	1/1	250	+ 1
				2.3	A	2	1/1	140	– 1
	A	2	1/10	3.1	A	2	1/10	70	– 1
4	A	2	1/10	4.1	A	2	1/10	60	– 1
				4.2	B	2	1/10	50	+ 1
5	B	1	1/3	5.1	B	1	1/3	1000	– 1
6	B	1	1/3	6.1	B	1	1/3	400	0
				6.2	A	1	1/3	400	– 1
7	B	2	1/6	7.1	B	2	1/6	5	0
8	B	2	1/6	8.1	B	2	1/6	30	+ 1
9	B	2	1/6	9.1	B	2	1/6	140	+ 1
				9.2	A	2	1/6	20	0
				9.3	A	2	1/6	10	– 1
10	B	2	1/6	10.1	A	2	1/6	40	– 1
				10.2	B	2	1/6	80	– 1
11	B	2	1/6	11.1	B	2	1/6	170	+ 1

General method

147. Balances (*B*) are calculated as follows.

Table 4. Calculating the balance for industry A (B_a)

Report unit no.	Response $[x_{ik}]$	Sampling probability $[f_i]$	Adjustment factor to universe level $[1/f_i]$	Response adjusted to universe level $[x_{ik} \times 1/f_i]$	Weight $[w_{ik}]$	Weight adjusted to universe level $[1/f_i \times w_{ik}]$	Weighted response at universe level $[1/f_i \times w_{ik} \times x_{ik}]$
Col 1	Col 2	Col 3	Col 4 (1/Col 3)	Col 5 (Col 2* Col 4)	Col 6	Col 7 (Col 4*Col 6)	Col 8 (Col 5* Col 6)
1.1	+1	1/1	1	+ 1	600	600	600
1.2	0	1/1	1	0	100	100	0
2.1	0	1/1	1	0	160	160	0
2.3	– 1	1/1	1	– 1	140	140	– 140
3.1	– 1	1/10	10	– 10	70	700	– 700
4.1	– 1	1/10	10	– 10	60	600	– 600
6.2	– 1	1/3	3	– 3	400	1200	–1200
9.2	0	1/6	6	0	20	120	0
9.3	– 1	1/6	6	– 6	10	60	– 60
10.1	– 1	1/6	6	– 6	40	240	–1200
SUM	• •	• •	44	– 35	1600	3920	– 3300

• • = Irrelevant information

148. From the SUM row the balance for industry A is calculated as the quotient of column 8 / column 7 which amounts to -3300 / 3920 = - 0.84 Expressed in percentage points this gives the balance – 84. The number of reporting units adjusted to universe level being 44, the unweighted balance is the quotient of column 5 / column 4 which amounts to -35 / 44 = - 0.80 or, in percentage points, – 80.

149. Repeating the calculations for industry B we get the information recorded in Table 5.

150. From the SUM row in Table 5 the balance for industry B is calculated as the quotient of column 8 / column 7 which amounts to – 990 / 7800 = – 0,13. Expressed in percentage points this gives the balance – 13. The unweighted balance is derived from the SUM row as the quotient of column 5 / column 4 which amounts to + 19 / 48 = + 0,40 or in percentage points + 40.

Table 5. Calculation of balances for industry B, (B_b)

Report unit no.	Response $[x_{ik}]$	Sampling probability $[f_i]$	Adjustment factor to universe level $[1/f_i]$	Response adjusted to universe level $[x_{ik} \times 1/f_i]$	Weight $[w_{ik}]$	Weight adjusted to universe level $[1/f_i \times w_{ik}]$	Weighted response at universe level $[1/f_i \times w_{ik} \times x_{ik}]$
Col 1	Col 2	Col 3	Col 4 (1/Col 3)	Col 5 (Col 2* Col 4)	Col 6	Col 7 (Col 4*Col 6)	Col 8 (Col 5* Col 6)
1.3	– 1	1/1	1	– 1	300	300	– 300
2.2	+ 1	1/1	1	+ 1	250	250	250
4.2	+ 1	1/10	10	+ 10	50	500	500
5.1	– 1	1/3	3	– 3	1000	3000	– 3000
6.1	0	1/3	3	0	400	1200	0
7.1	0	1/6	6	0	5	30	0
8.1	+ 1	1/6	6	+ 6	30	180	180
9.1	+ 1	1/6	6	+ 6	140	840	840
10.2	– 1	1/6	6	– 6	80	480	– 480
11.1	+ 1	1/6	6	+ 6	170	1020	1020
SUM	+ 4	• •	48	+ 19	2425	7800	– 990

• • = Irrelevant information

151. For calculating the balance for industry A and B combined, equation (9) is used. In our numerical example the value added data in Table 2 (4.000 mln $ for industry A and 16.000 miln $ for industry B) are used as weights. In the formula numerical values are used as follows:

w_k for industry A = 4.000 B_k for industry A = – 84

w_k for industry B = 16.000 B_k for industry B = – 13

Consequently:

$$\sum^{k} w_k = 4.000 + 16.000 = 20.000 \text{ and}$$

152. Applying the same calculation method and industry weights to the unweighted balances we get

$$B = [4000 \times (-80) + 16.000 \times (+40)] / 20.000 = [-320.000 + 640.000] : 20.000 = +16$$

Simplified method

153. Estimates from the sample of the total number of reporting units in each industry/size group of the universe responding (+), (=) and (-) respectively - labelled $N*_{ks}^{(+)}, N*_{ks}^{(=)}$ and $N*_{ks}^{(-)}$ in formula (11) - are computed as follows using the data recorded in Table 3.

Table 6. Calculation of balances by the simplified weighting method

Report unit no	Industry	Size group	Response $[x_{ik}]$	Sampling probability $[f_i]$	Adjustment factor to universe level $[1/f_i]$	Response adjusted to universe level $[x_{ik} \times 1/f_i]$	Industry A Size group 1 N^*_{ks}	Industry A Size group 2 N^*_{ks}	IndustryB Size group 1 N^*_{ks}	Industry B Size group 2 N^*_{ks}
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6 (1/Col 4)	Col 7	Col 8	Col 9	Col 10	Col 11
1.1	A	1	+ 1	1/1	1	+ 1	1			
1.2	A	2	0	1/1	1	0		1		
1.3	B	1	– 1	1/1	1	- 1			1	
2.1	A	2	0	1/1	1	0		1		
2.2	B	1	+ 1	1/1	1	+ 1			1	
2.3	A	2	– 1	1/1	1	- 1		1		
3.1	A	2	– 1	1/10	10	- 10		10		
4.1	A	2	– 1	1/10	10	- 10		10		
4.2	B	2	+ 1	1/10	10	+ 10				10
5.1	B	1	– 1	1/3	3	- 3			3	
6.1	B	1	0	1/3	3	0			3	
6.2	A	1	– 1	1/3	3	- 3	3			
7.1	B	2	0	1/6	6	0				6
8.1	B	2	+ 1	1/6	6	+ 6				6
9.1	B	2	+ 1	1/6	6	+ 6				6
9.2	A	2	0	1/6	6	0		6		
9.3	A	2	– 1	1/6	6	- 6		6		
10.1	A	2	– 1	1/6	6	- 6		6		
10.2	B	2	– 1	1/6	6	- 6				6
11.1	B	2	+ 1	1/6	6	+ 6				6
SUM	••	••	••	••	93	••	4	41	8	40

•• = Irrelevant information

154. Table 7 is derived from Table 6. The frequencies in absolute numbers presented in Table 7 add up to the SUM for columns 8 to 11 in Table 6.

Table 7. Distribution within report strata of responses to question Q adjusted to universe level . Absolute frequencies.

	SUM OF RESPONSES			
REPORT UNIT STRATUM	(+)	(=)	(–)	SUM
Industry A, Size group 1	1	0	3	4
Size group 2	0	8	33	41
Industry B, Size group 1	1	3	4	8
Size group 2	28	6	6	40

155. The absolute numbers in this table are converted to percentages as shown in Table 8.

Table 8. Distribution within report strata of responses to question Q adjusted to universe level. Percentage frequencies

	SUM OF RESPONSES				
REPORT UNIT STRATUM	(+)	(=)	(–)	SUM	BALANCE [(+) - (–)]
Industry A, Size group 1	25	0	75	100	– 50
Size group 2	0	20	80	100	– 60
Industry B, Size group 1	13	37	50	100	– 37
Size group 2	70	15	15	100	+ 55

156. The figures in the cells of the columns (+), (=) and (–) are the A_{ks} values according to formula (11) above expressed as percentages and the figures in the cells of column BALANCE are the B_{ks} values in formula (12). Applying formula (11) for estimating the balances for our two industries and using the numerical data presented in Table 2 we get the information recorded in Table 9.

Table 9. Aggregation of size groups to industries and industries to industry aggregates

INDUSTRY	SIZE GROUP	w_{ks}	VALUE ADDED	B_{ks}	B_k	BV
A	1	2000		– 50		
A	2	2500		– 60		
A	Total	4500	4000 mln $		– 56	(1)
B	1	5000		– 37		
B	2	3000		+ 55		
B	Total	8000	16000 mln $		– 3	(1)
A + B	TOTAL	12500	20000 mln $			– 14 (2)

(1) The balances by industry (B_k) have been computed by applying formula (12) above to the numerical data in the table. Thus:

For industry A we get B_k = [2000×(–50) + 2500×(–60)] / 4500 = – 56

For industry B we get B_k = [5000×(–37) + 3000×(+55)] / 8000 = – 3

(2) The balance for aggregates of industries - i.e. industry A plus industry B - is computed applying formula (9) above to the numerical data in the table as follows:

B = [4000×(–56) + 16000×(–3)] / 20000 = – 14

157. In this simplified numerical example, the three different procedures – size-weighted general method, general method without size-weights and the simplified method – give very different results. Using real-life data, the usual finding is that the choice of weighting procedure has a limited effect on the results.

Recommended weighting and estimation procedure

158. The recommended approach is to use reliable external information to come as close as possible to the correct weighting of size groups and industries for reporting units. When this condition is fulfilled a mix between the simplified and general method should be used. The general method is used to estimate the response distribution at the report stratum level and from there on external information is used as indicated in Table 2. In this manner the error due to estimating the importance of different size groups and of different industries is reduced.

6. PUBLICATION OF RESULTS

Introduction

159. The quality of a statistical output has several dimensions. Reliability and timeliness are the two that come immediately to mind but they are by no means the only ones. This Chapter deals with three other key aspects of statistical quality:

- *Transparency*. Are users sufficiently informed about the sources of the data and the methods used to edit and process them? Methodological information – metadata – is considered in the first part of this Chapter.

- *Interpretability*. Are users able to interpret the data easily and correctly? The next part considers the information needs of different users and how these can be met.

- *Accessibility*. Can users easily find the information they need? The final part of the Chapter offers guidance on dissemination of business tendency survey results.

Information on the methodology (meta-data)

160. Users should be provided with sufficient information about the overall quality of the survey to enable them to draw accurate inferences from the data. Users may also need to determine whether the results of surveys conducted in different countries are comparable. In many cases, this information is provided in the survey report at least once a year, usually in the report for surveys conducted in January or for the first quarter. It is standard practice to include the questionnaire used for the survey and the instructions to respondents. In addition the following points should be covered.

The frame

161. Information about the coverage of the survey should be provided in terms of:

- what types of enterprises are covered;

- estimates of the extent of possible under–coverage e.g. late up-date of new enterprises, poor coverage of small firms, enterprises excluded because of misclassification.

- estimates of the extent of possible over–coverage e.g. extinct enterprises remaining in the frame, enterprises wrongly included because of faulty classification;

- age of the frame and how often is it updated.

The units

162. Information about the units should include details on:

- what are the response units i.e. what kind of unit is the questionnaire sent to;
- what are the reporting unit i.e. the unit for which data are collected - enterprise, kind of activity unit, local unit or establishment.

The sample

163. Information should be given on the sampling method:

- random or purposive selection;
- simple or stratified selection;
- if stratified selection is used, what are the criteria for stratification:
  - kind of activity;
  - size in terms of employment, turnover, etc.;
- updating of sample:
  - fixed panel;
  - fixed panel but with new enterprises introduced at regular intervals;
  - entire sample renewed at regular intervals.

Weighting

164. Methods for estimating universe totals from the sample need to be explained:

- at the lowest aggregation level (the individual stratum);
- for higher aggregation levels (industries, industry groups, grand total).

Data collection methods

165. A description of the data collection method should be provided e.g. mail, telephone interview, personal interview, e-mail return, etc. When several methods have been used, the approximate proportion of replies received with the different methods should be indicated

Treatment of non–response

166. Information on the extent of non–response should be provided by size groups according to the appropriate measures M1–M3 (see Chapter 4). Information is also required on the procedures used to deal with non-response. For example:

- substitution (enterprises who have replied have been included as substitutes for non–responding enterprises). In this case the method for selecting substitutes should be explained;
- imputation (a completed questionnaire has been constructed). In this case the method of imputation should be explained;
- assumption that non–responding enterprises are a random sample of enterprises in the survey;
- other methods, details of which need to be specified.

Precision

167. The margins of error due to the use of a sample instead of complete enumeration should also be explained. Ideally, estimates of the variance and 95% confidence interval should be given for the total and the main kind of activity groups. These measures are only relevant when random sampling has been used.

Comparability

168. Information provided should include descriptions of survey comparability with regard to comparisons of data between:

- consecutive surveys, especially between the last quarter/month one year and the first in the following year, since this is when changes to questionnaires or survey methods are most often introduced;
- business tendency survey data and related quantitative statistics.

169. This *Handbook* recommends that there should also be a brief discussion of the differences between the survey and the harmonised system.

Policy for release of data

170. The first of the United Nations *Fundamental Principles of Official Statistics* specifies that all users must be accorded access to official statistics on an impartial basis[25]. This implies that official

25. The first of the "ten commandments" of the *Fundamental Principles of Official Statistics* states that: "*Official statistics provide an indispensable element in the information system of a democratic demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens' entitlement to public information.*" The principles can be viewed on the UNECE Website: http://www.unece.org/stats/documents/fund.principles/efund.pdf

statistics should be released simultaneously to all users. If there are some privileged users who are given prior knowledge of the results before they are released to the general public, this should be explained together with the reasons for making the exception.

Supervision of "outsources"

171. If the survey is partly or wholly "outsourced" – for example if the field interviews or the data editing has been outsourced to specialised companies or other government departments – details should be given of the control procedures out in place by the survey owners.

Needs of different users

172. In considering what data to present and how it should be presented, it is helpful to consider the different kinds of users of business tendency survey data. Users and potential users are:

- Respondents to the survey;
- Senior business executives;
- Parliamentarians;
- Senior civil servants responsible for government policy;
- Senior personal in banks and financial institutions;
- Economists, researchers and analysts in general;
- The press and other media.

173. The potential users listed above do not all need the same type of information. In general they can be divided into two categories: those who intend to analyse the statistics in detail and those who simply want to know the main results. The first category – "analysts" for short – includes economists, researchers, other analysts and the respondents to the survey. The second category may be labelled "executives" and consists of senior business executives, politicians, senior civil servants responsible for government policy, senior personal in banks and financial institutions, and the press and other media. "Executives" probably make up the majority of business tendency survey data users.

Analysts

174. Analysts are people who are have the time and knowledge to study the survey results in detail. They may work for statistical institutes, economic research institutes and companies that have their own in-house research department. The main requirements for analysts are:

- to have access to the data quickly after publication;
- to have the figures clearly printed and laid out;

- to have concise, easily absorbed, methodological information and a telephone number or address to write to with queries and to have access to the more detailed methodological information as described above;

- to receive historical data for a few years back so they do not have to waste time looking through too many back issues of the survey reports;

- to have any breaks in the series properly dealt with and noted, with at least one period on both the old and the new base;

- and, when revisions are made, to have access to the full run of revised data.

175. Survey respondents are a particularly important group among the *analysts* since they need to be motivated to continue filling in the questionnaires. In order to provide incentives for enterprises to participate in the surveys, many agencies conducting business surveys provide their regular respondents with special services in order to persuade participants to remain in the sample. These services include:

- forecasts for the respondent's kind of activity based on the survey series alone or in combination with quantitative statistical series;

- forecasts for the respondent's potential customers so as to provide information on incoming orders;

- disequilibrium analysis on branch level: this approach focus on the micro data from the surveys and has the advantage that both cyclical and structural phenomena can be analysed at the same time.

Executives

176. Analysts are a minority, though an important one, of all users. Executives are a much greater potential user group. Executives do not want to look at the results as such, but want to know what the results mean. They need their information "pre-digested". If the agency conducting the business surveys does not publish the results in a way that appeals to executives, the majority of potential users will never know about the survey.

177. The results for executives should be presented in a way that makes it easy for them to absorb the material and encourage them to read it. They do not have time to read everything and will select only that which seems important. They will hardly look at statistical tables. Statistical tables should be included in the presentation as they add credibility to the analysis, but they should play a relatively minor role or be put in an annex. The main requirements for a report for executives may by summarised in the following points:

- the main part of the report should be devoted to text;

- the main results should be presented in a simple way and give a good overview of the main developments. The presentation could focus on the results based on confidence indicators for broad sectors of the economy;

- it should be brief, two or three pages of text with a few graphs (business survey data are particularly suitable for graphical presentation);

- one or two pages of statistical tables attached in annex;

- it will need to explain why the survey results can be important guides to economic activity as well as reflecting the views of the business community, and any relevant technical points. (This is most important in the early days of the survey).

Dissemination of survey results

178. Three main types of reports, on paper or electronic, form the ideal basis for a publication strategy for presenting business tendency survey data to different users:

- press release;

- publication for analysts;

- reports for respondents.

179. The main focus and content of these reports are summarised in Table 2 and explained in more detail in what follows.

180. The **press release** should be very short - one or two pages maximum. Only the main features should be covered in the text. The press notice will also include methodological information dealing with the number of respondents and coverage of the survey in terms of employment, value added, sales or turnover. A table summarising key indicators and a graph showing the overall development of one or two main indicator could also be included. A telephone contact number should be given.

181. The **report for analysts** should contain a complete presentation of the survey results. This will include an overview of the main results and main features by sectors, regions etc. The text should be complemented with graphs and tables of key results. This report should contain detailed results with full data presentation in tables for all variables by sectors, regions etc. and covering a reasonable period of past data. These tables could show quarterly or annual averages of data for a longer period of years so that the analysts can easily compare current results with past trends.

182. The methodological description should be rather extensive and give more technical and detailed information. The previous section in this Chapter describes the kind of methodological information that is required. This information will usually be updated once a year.

183. The **report for respondents** to the survey should include the same information as the one prepared for analysts. In addition, it could contain enterprise-specific information, if such information is available. For example it could include sectoral and branch forecasts for key sectors of interest to particular enterprises in a particular industry. Specific forecast for individual enterprises participating in the survey could also be prepared on request.

Table 2. Business survey reports for different users

Reports/users	Focus of information	Content
Press release	Main features	Text, survey characteristics
Analysts	Overview Main features by sectors	Text, graphs, tables Detailed data Survey characteristics Interpretation of results Methodolgical information
Respondents	Overview Main features by sectors Enterprise specific information	Text, graphs, tables Detailed data Special tabulations Survey characteristics Interpretation of results Methodological information

184. Production of three different reports for each survey may be beyond the means of many agencies carrying out business tendency surveys. In this case, the second publication could serve both analysts and survey respondents, with the latter also being offered, on demand, a limited range of tabulations giving information specific to the responding enterprise.

7. USE OF RESULTS

Interpretation of survey data

185. Interpretation of business tendency survey data is complicated by the subjective nature of the replies and, in particular by the rather vague way in which many questions are phrased. For example a question such as,

Do you consider that the present business situation of your company is: good ( ), satisfactory ( ), bad ( )?

will almost certainly be interpreted in different ways by different respondents. Perhaps this could be solved by giving a set of detailed instructions to the respondents, but asking them to refer to these instructions will increase the reporting burden and there is no guarantee that respondent will in fact bother to do so. Some agencies that carry out business tendency surveys have made special enquiries about how respondents have interpreted the questions. The paragraphs below describe some of the findings of these studies.[26]

A "normal" situation

186. In assessing order books and inventories, respondents are often asked to compare current levels with a *normal* situation. Some respondents may define normality by reference to the companies' plans or budget projections, but most will refer to average levels over some past period – the last year or two for example. This means that the judgement on what is normal will change over time, so that when demand is rising/falling the judgement of what is a normal level of inventories or order books will also rise/fall.

Reference period for questions

187. Survey questions asking for an appreciation of past and future changes usually specify a previous or future period for comparison. In the standardised questionnaires in Annex A, *"three or four months"* is suggested as the reference period.

188. In formulating their replies, respondents may refer to other reference periods in the past and in the future. The appreciation of past changes may for example be answered with reference to the corresponding period of the previous year as a way of excluding seasonal problems, and not with reference to the period specified in the questionnaire. Questions concerning future changes on the other hand, may be answered with a shorter time horizon than requested due to problems in estimating the variable too far in the future. In general this will not cause problems in interpreting the data provided the behaviour of respondents does not change over time. If the answering practices remain stable over time the balances will still give valid information on changes.

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26 . Mr Sudir Junankar, formerly responsible for the business tendency survey carried out by the Confederation of British Industries has reported on studies of respondent behaviour at joint OECD-EU seminars.

Capacity utilisation

189. Capacity utilisation may be assessed by reference to physical capacity alone – buildings, plant, machinery, vehicles etc. – and this appears to the commonest practice among respondents. Some respondents, however, will take account of other factors such as access to financial capital and, particularly, the supply of labour. Again this should not affect the validity of the results so far as changes over time are concerned provided that respondent behaviour is stable. However, survey data on the actual levels of capacity utilisation will represent some unknown mixture of capital and labour utilisation.

Business situation

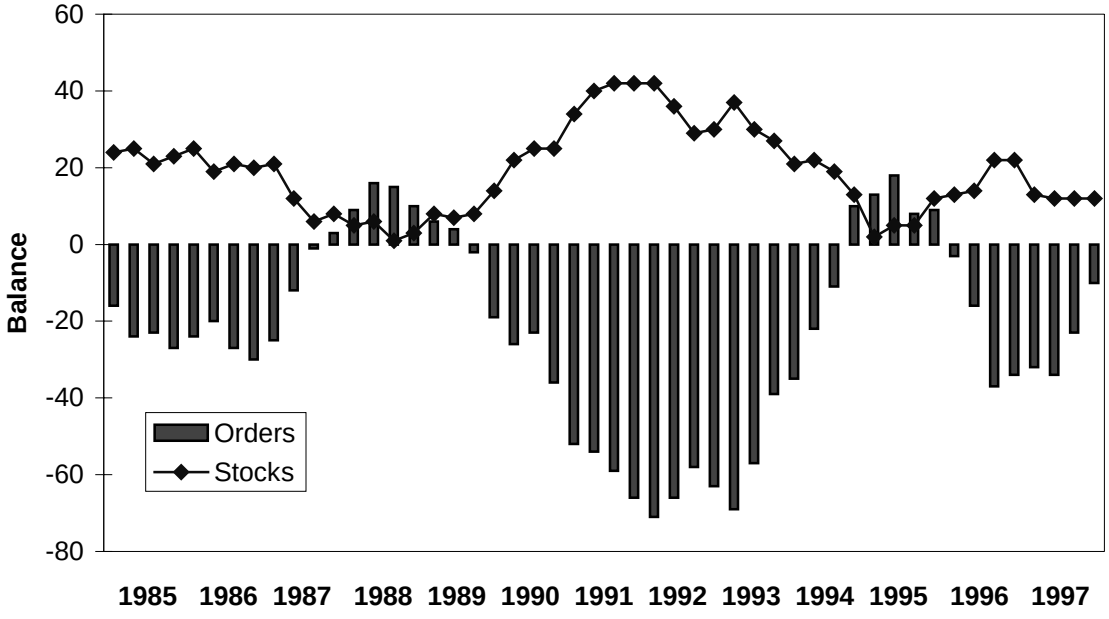
190. Assessments of the future business situation – is it expected to improve or worsen in the near future – are widely-used statistics from business tendency surveys so it is important to know what factors respondents have in mind in answering this question. For business tendency surveys in industry, the most important factor is usually the level of future demand as measured by order books and future production. Other factors include expectations about interest rates, movements of exchange rates and political events in the home country and in export markets.

"Bias" in responses

191. "Bias" in the form of over-optimism or over-pessimism by respondents is occasionally observed and must be taken into account in the interpretation of the results. For example, respondents tend consistently to report that their order books are lower than "normal". This is illustrated in Chart 1 where the average of the balance relating to order books, reported in a Swedish survey, is below zero over several years – clearly an impossible occurrence. The same chart shows that Swedish respondents tend consistently to report that their stocks are higher than "normal". Swedish respondents are systematically pessimistic in answering both questions, but the situation may be different in other countries.

192. This type of consistent over-optimism or over-pessimism can be corrected by comparing the gap between the balance and its long-term average rather than the gap between the balance and the zero level.

Chart 1. Orderbooks and Stocks of Finished Goods



Source: Business Survey in Industry, Sweden, OECD *Main Economic Indicators*

Comparing business tendency survey data with quantitative statistics

193. Comparisons of business tendency survey series with conventional quantitative series provide an external consistency test. Such comparisons, however, are complicated by the fact that conventional statistical series are expressed in value or volume terms, while business surveys use ordinal scales for most variables – commonly a three point scale. A crucial issue in this context is whether the balances derived from business tendency surveys refer to trend deviations or to changes in the levels of related quantitative series.

194. For questions asking whether present levels of activity are above normal, normal or below normal, the balance series constructed from the replies can be regarded as representing a *trend deviation*. For questions asking for a judgement on present or future changes or trends in comparison to past or present periods, the balance series corresponds to *changes in levels*.

Survey series in level form

195. The first category of survey questions i.e. an assessment of the present level of activity, is illustrated in Chart 2 by a balance series on stocks of finished goods. Data are from the Business Conditions Survey carried out by Statistics Canada. The survey series is compared with the quarterly changes in the corresponding quantitative series on finished goods stocks (top panel)) and the same quantitative series in de-trended form is shown in the bottom panel of the chart. The correlation between the balance series and the quarterly changes in the quantitative series has a correlation coefficient (r) of 0.45 while the correlation between the balance series and the de-trended quantitative series has a correlation coefficient of 0.87. These results show that survey series in level form are more compatible with related quantitative series in de-trended form.

Survey series in tendency form

196. As regards survey questions asking for judgements on present or future changes, a common difficulty is that respondents may not actually use the reference period specified in the questionnaire in answering the question. As a result, when a quantitative series is converted to monthly or quarterly changes it may not correspond with the reference period actually used by respondents answering questions about present or future changes.

197. The importance of the reference period is illustrated in Chart 3 which compares a balance series on new orders with a related quantitative series. The data are from the Business Tendency Survey carried out by the *ifo Institut für Wirtschaftsforschung* in Germany. The survey series on new orders which supposedly measures the direction of change over one month is compared with the changes over one month and over 12 months in a quantitative series on new orders (top and bottom panel in Chart 3). The balance series shows a correlation of 0.25 against the one month change in the quantitative new orders series and a correlation of 0.76 compared to the 12 months change in the quantitative series. These results indicate that the balance series reflects changes over longer periods than the one month as requested in the survey.

Business surveys and cyclical analysis

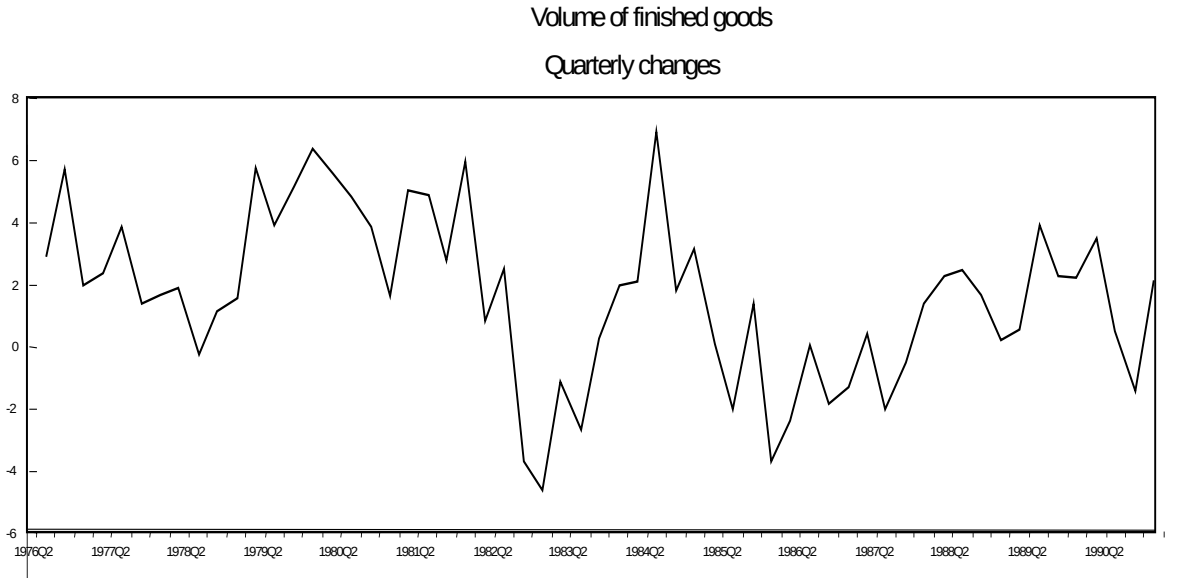
198. The statistical series derived from business surveys are particularly suitable for business cycle monitoring and forecasting. The cyclical profiles of the series are in many cases easier to detect because they contain no trend and the series reflect assessments and expectations by businessmen, which make them very suitable as leading indicators. Because of this, business tendency survey series are extensively used in cyclical analysis and in particular for constructing composite indicators that either lead or coincide with the business cycle. Composite indicators based on business survey information are included in many reports on business tendency surveys or they are used by analysts to calculate such indicators.

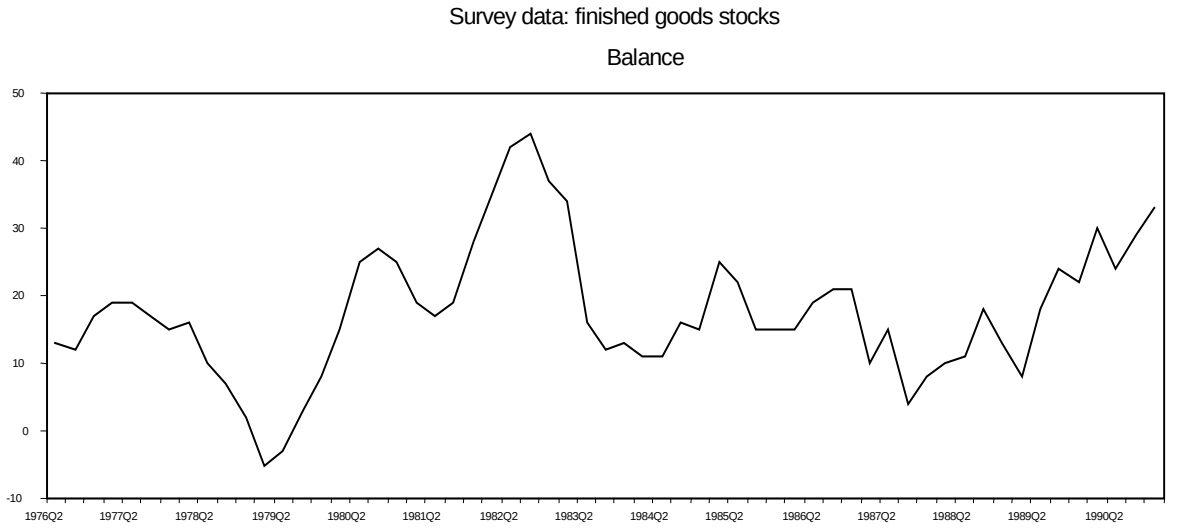
199. It is convenient to distinguish two types of indicators, which may be labelled *internal* or *external* depending on the kind of information requested in the survey:

- an indicator is referred to as *internal* if the survey information refers to judgements or assessments about variables concerning the respondents own company;

- an indicator is referred to as external if the survey information refers to matters that are external to the reporting enterprise, such as the general economic situation in the country or in a particular industrial sector.

Chart 2


Volume of finished goods
Quarterly changes
8
6
4
2
0
-2
-4
-6
1976Q2
1977Q2
1978Q2
1979Q2
1980Q2
1981Q2
1982Q2
1983Q2
1984Q2
1985Q2
1986Q2
1987Q2
1988Q2
1989Q2
1990Q2


Survey data: finished goods stocks
Balance
50
40
30
20
10
0
-10
1976Q2
1977Q2
1978Q2
1979Q2
1980Q2
1981Q2
1982Q2
1983Q2
1984Q2
1985Q2
1986Q2
1987Q2
1988Q2
1989Q2
1990Q2

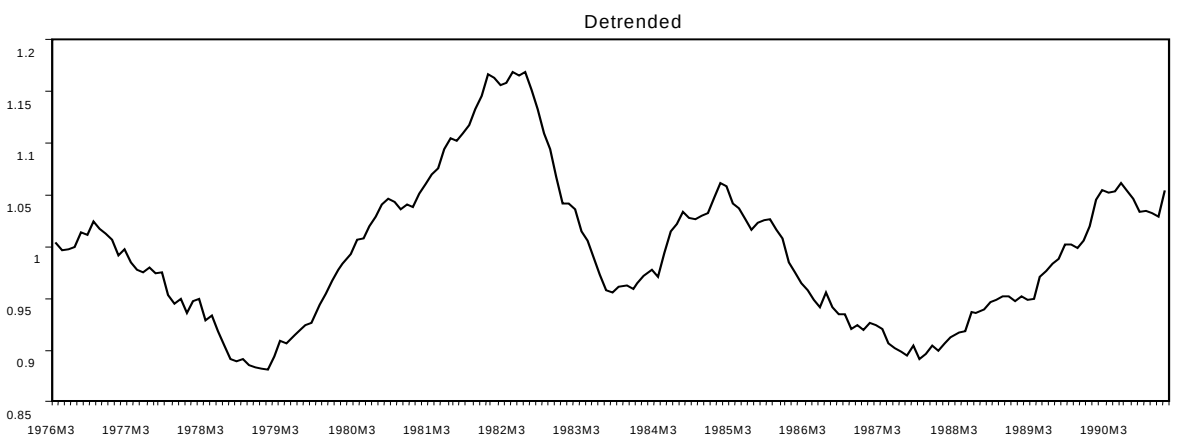
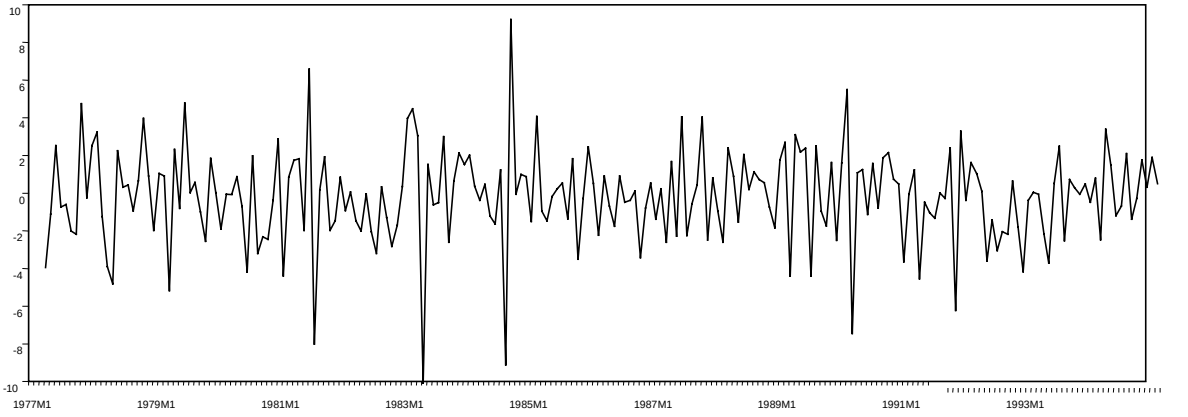

Volume of finished goods stocks
Detrended
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
1976M3
1977M3
1978M3
1979M3
1980M3
1981M3
1982M3
1983M3
1984M3
1985M3
1986M3
1987M3
1988M3
1989M3
1990M3

Chart 3

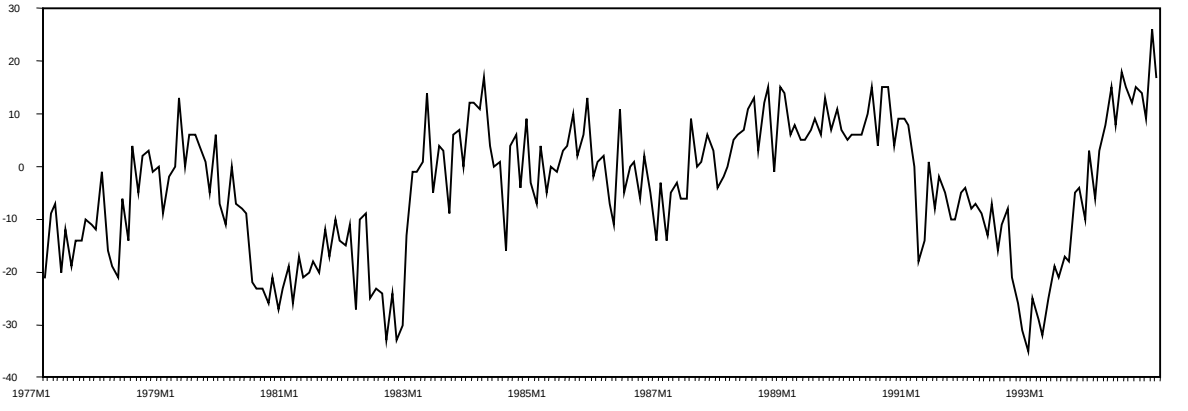
Volume of new orders

Monthly changes



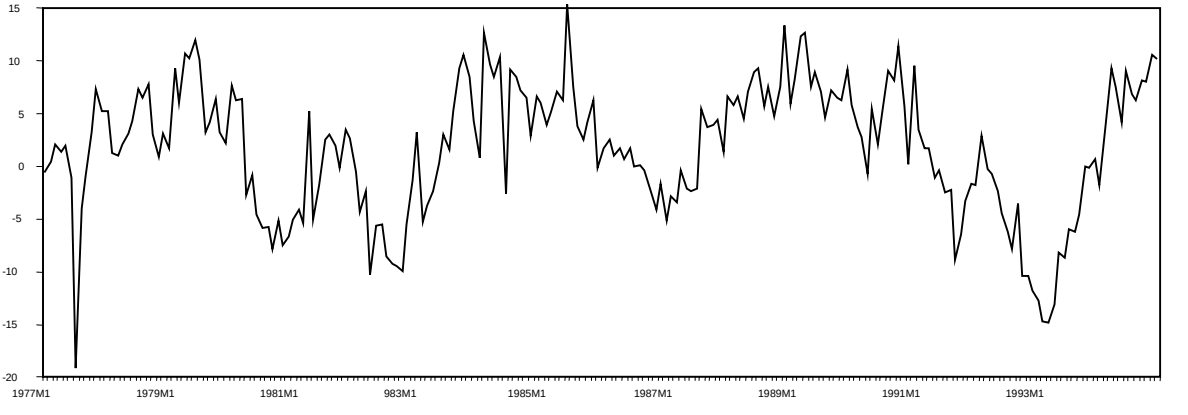
Survey data: New orders

Balance



Volume of new orders

Change over same month previous year



200. External-type questions are asked in the industry surveys in Australia, New Zealand, France and Italy. This *Handbook*, however, recommends that business tendency survey questionnaires should be focussed on questions where the respondent may be expected to have particularly good knowledge – i.e. questions that are internal rather than external to the respondent's company. Only internal-type indicators are discussed in what follows.

Confidence indicators based on a single survey question

201. Answers to questions on the *general business situation* will usually be based on a combination of factors such as the respondents' appraisals about order books and expected new orders, as well as expectations about interest rates, exchange rates and political developments. Questions of this type are included in many business tendency surveys and are also in the standard questionnaires contained in Annex A. Balances from these questions are often referred to as *confidence indicators* and may be used as leading indicators for predicting short-term economic developments.

Composite confidence indicators

202. Rather than using answers to a single question, a set of survey variables can be combined into a single *composite confidence indicator*, which summarises economic agents' assessments and expectations of the general economic situation. The following paragraphs describe composite indicators that have been found useful in several countries by analysts at the European Commission and the OECD. They are given only as examples since other combinations may perform better for particular countries or over particular time periods. The balances are averaged by taking means as indicated below. The questions are taken from the standard questionnaires in Annex A.

Industry

203. The *industrial confidence indicator* (ICI) is an average of the balances to the three questions in the industry survey relating to:

- *Question 2*: production, future tendency (PE)
- *Question 3*: total order books (OB)
- *Question 5*: stocks of finished goods (ST) (inverted)
- ICI = (PE + OB – ST)/3

Construction

204. The *construction confidence indicator* (CCI) is an average of the balances to the two questions in the construction survey relating to:

- *Question 3: total order books (OB)*
- *Question 8: employment, future tendency (EE)*
- *CCI = (OB + EE)/2*

Retail trade

205. The *retail trade confidence indicator* (RCI) is an average of the balances to the three questions in the retail trade survey relating to:

- *Question 1: business situation , present (BS)*
- *Question 2: business situation, future tendency (BF)*
- *Question 6: stocks (inverted) (ST)*
- *RCI = (BS + BF – ST)/3*

Services

206. The *confidence indicator for services* (SCI) is an average of the balance to the three questions in the survey relating to:

- *Question 4 : employment, future tendency (EE)*
- *Question 6: business situation, present (BS)*
- *Question 7: business situation, future tendency (BF)*
- *SCI= (EE + BS + BF)/3*

Cyclical indicator systems

Introduction

207. Confidence indicators of the kind discussed above are simple to calculate and have proved useful in many countries for monitoring the current economic situation and predicting likely changes in the short-term. However business tendency survey data can also be combined with quantitative statistics to obtain a more structured *cyclical indicator system* such as the OECD "System of Composite Leading Indicators". These are published for most OECD Member countries in the monthly publication *Main Economic Indicators* and in the OECD's half-yearly report on member countries' economies, the *Economic Outlook.*

208. Economic development in market economies is characterised by a succession of cycles with alternating phases of expansions and contractions in economic activity. The cycle may be defined by reference to the absolute level of economic activity. A downturn occurs when economic activity falls in absolute terms and an upturn occurs when it begins to increase in absolute terms. This can be described as the *classical* definition of a cycle. The alternative is to define cycles in terms of *growth rates*. A downturn occurs when the growth of economic activity falls below the long-term trend and an upturn occurs when the growth rate rises above it. *Growth cycle* contractions/expansions include slowdowns/pick-ups as well as absolute declines/increases in activity, whereas *classical cycle* contractions/expansions include only absolute declines/increases. In common with most other indicator systems, the OECD leading indicator system measures *growth cycles*.

209. Leading, or "cyclical" indicator systems are constructed around a *reference series* i.e. a target series which reflects overall economic activity and whose cyclical development it is intended to predict. The reference series is used to establish the "timing classification" of statistical indicators into *leading*, *coincident* or *lagging* indicators. Of the three, there is most interest in *leading* indicators.

210. A single variable such as total industrial production[27] or GDP is used as reference series in most cyclical indicator systems. GDP is the best measure of overall economic activity but changes in industrial production are highly correlated with GDP and are used as the reference series in many indicator systems because it is usually available on a monthly basis and becomes available soon after the reference period. However, a set of *coincident indicators* combined into a composite indicator is an alternative way to define a reference series.

211. Once a set of cyclical indicators has been selected they are combined them into a single composite indicator. This is done in order to reduce the risk of false signals, and to provide a cyclical indicator with better forecasting and tracking qualities than any of its individual components. The reason why a group of indicators combined into a composite indicator should be more reliable over a period of time than any of its individual components is related to the nature and causes of business cycles. Each cycle has its unique characteristics as well as features in common with other cycles. But no single cause explains the cyclical fluctuation over a period of time in overall activity. The performance of individual indicators will then depend on the causes behind a specific cycle. Some indicators will perform better in one cycle and less well in a different cycle. It is therefore necessary to have signals for the many possible causes of cyclical changes.

Advantages of business tendency survey series for cyclical indicator systems

212. The statistical series derived from business surveys are particularly suitable for business cycle monitoring and forecasting. In particular, their ability to predict the cycle's turning point makes them very suitable as leading indicators and the construction of leading indicators is the main objective of a cyclical indicator system.

213. Statistical series are normally selected for inclusion in a cyclical indicator system if they meet the following criteria[28]:

- *Relevance:* There must be an economic rational for expecting a leading relationship.
- *Cyclical behaviour:* The length and consistency of lead is obviously important as is cyclical conformity (general fit), the absence of extra or missing cycles and the smoothness of the series over time.

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27. In almost industrialised countries, industry accounts for much less than half of GDP. However, many activities within the services sector, which now dominates GDP in most OECD countries, are closely linked with industrial output – transport, trade, business and financial services for example. Indices of industrial production are closely correlated with movements in GDP in most countries.

28 . The United States *Conference Board* uses an expanded set of criteria in selecting data series for its composite indicators. These are: conformity to the business cycle; consistency of timing; economic significance; statistical adequacy; smoothness; and currency (being up-to-date). See The Conference Board (ed.*), Business Cycle Indicators Handbook*, (p.14), New York 2001. The three criteria offered here cover these six criteria in shortened form.

– *Practical considerations.* These include the frequency of publication (at least quarterly and preferably monthly), no large revisions, timeliness of publication, and availability of a long time series with no breaks.

214. In terms of relevance, the business surveys score well as they include variables which measure the early stages of production (e.g. new orders, order books), respond rapidly to changes in economic activity (e.g. stocks) and measure expectations (e.g. future production tendency).

215. The cyclical profiles of business tendency survey series are usually easy to detect because they contain no trend. This is a big advantage if the indicator system is designed to detect growth cycles measured in terms of deviations from long term trend. As explained earlier, while conventional statistics are expressed in values and volumes, business tendency surveys use ordinal scales for most variables - (usually a three point scale (up/same/down) - and this makes them very sensitive to cyclical developments. In addition, business tendency survey variables related to judgements and expectations register a change in the cycle earlier than corresponding quantitative statistical series. This is because judgements and expectations lead to plans and only after these plans have been implemented will they be picked up by conventional statistical surveys.

216. Business tendency survey series are also relatively smooth compared with quantitative statistics. This is partly explained by the fact that business tendency survey series are less sensitive to disruptive events such as changes in holidays or plant shutdown schedules and unusual weather conditions that will affect quantitative statistics, particularly if they are monthly.

217. Another advantage is that business tendency survey data are all available from a single source (the agency conducting the business tendency survey) and are all published at the same time. This means that a composite indicator that includes several business tendency survey series will always be calculated with a high number of components available and so will be less subject to later revisions. (Most leading indicators are published as soon as a certain percentage of their components become available and are later revised when the missing components become available.)

218. Finally, business tendency surveys collect information on variables which are difficult or impossible to measure by conventional methods such as capacity utilisation, production bottlenecks and the overall economic situation. These variables are highly relevant in forecasting cyclical turning points.

Types of series used in international indicator systems

219. Cyclical indicator systems are used by national governments and economic research institutes in various parts of the world and systems of cyclical or leading indicators are also maintained by international organisations for monitoring economic development in a number of market economies.

220. The types of leading indicator series used in international indicator systems are described below. The institutions covered are the OECD, Centre for International Business Cycle Research (CIBCR - United States) and the Commission of the European Union (EU).

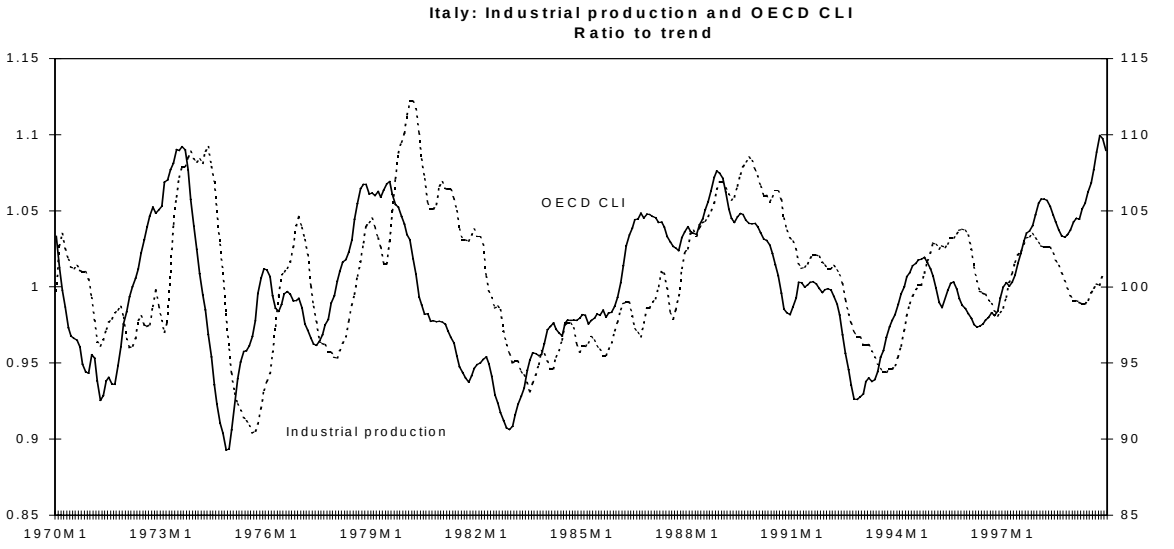
221. The main leading indicator series used in these three indicator systems are set out in Table 2. One of the main differences between them is the extent to which they incorporate qualitative data from business tendency surveys and consumer opinion surveys. The EU system relies almost entirely on qualitative series, the only quantitative series used being the share price index; in the OECD system qualitative data are the most frequently used series overall, but quantitative data are also used extensively for several countries; the CIBCR system uses only quantitative data.

222. Two other differences are worth noting. The OECD system is the only one to include “foreign” series – merchandise exports, terms of trade and economic activity in major trading partners. It is also alone in using money supply and interest rates which are found to be good leading indicators in many OECD countries.

223. Two composite indicators for Italy are used below to illustrate the cyclical performance of composite indicators based on different types of series. The first composite indicator is calculated on the standard set of series used in the EC system and the second is based on the country specific data set used for Italy in the OECD system. The other difference is that the EU indicator (referred to as “economic sentiment indicator” is almost totally based on qualitative series while the OECD indicator includes both qualitative and quantitative statistical series.

224. The cyclical development of the two composite indicators over the period 1975-1996 are set out in Chart 7. The industrial production index is used as reference series in order to evaluate the cyclical performance of the two composite indicators. The OECD composite leading indicator is set out in the top panel of Chart 7 and shows a clear leading behaviour against industrial production. The lead of the OECD composite indicator against the detrended industrial production series is 10 months with a peak correlation of 0.74. The EU economic sentiment indicator (lower panel) shows a rather short lead (3 months) and a relatively weaker relationship with a peak correlation of 0.51 against the industrial production index.

Chart 7


Italy: Industrial production and OECD CLI
Ratio to trend
1.15
1.1
1.05
1
0.95
0.9
0.85
115
110
105
100
95
90
85
OECD CLI
Industrial production
1970M1
1973M1
1976M1
1979M1
1982M1
1985M1
1988M1
1991M1
1994M1
1997M1

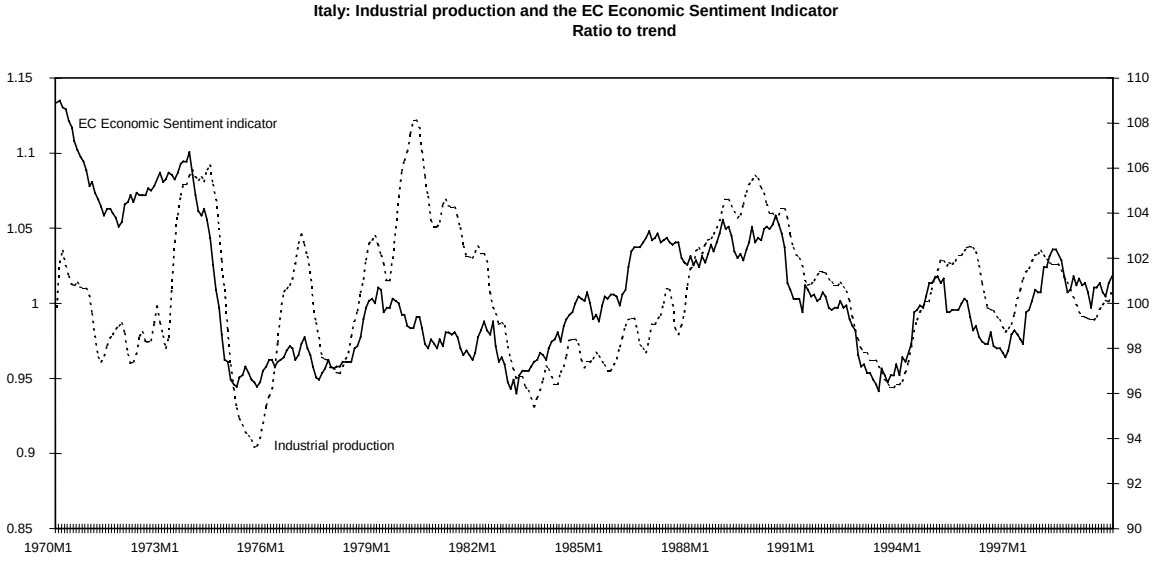

Italy: Industrial production and the EC Economic Sentiment Indicator
Ratio to trend
1.15
1.1
1.05
1
0.95
0.9
0.85
110
108
106
104
102
100
98
96
94
92
90
EC Economic Sentiment indicator
Industrial production
1970M1
1973M1
1976M1
1979M1
1982M1
1985M1
1988M1
1991M1
1994M1
1997M1

Table 2. International Systems of Leading Indicators: Main Component indicators

Indicator series by subject area	Number of countries with indicators		
	OECD	CIBCR	EC
Production, stocks and orders			
Industrial production branches	4		
Orders	4	5	
Stocks	6	7	
Construction, sales and trade			
Construction	9	10	
Sales or registration of vehicles	5		
Retail sales	5		
Labour force			
Layoffs/initial claims	2	4	
Hours worked	2	8	
Prices, costs and profits			
Wages and salaries per unit of output	3		
Ratio, price to labour cost		9	
Price indices	5	8	
Profits, flow of funds, etc.	2	6	
Monetary and financial			
Consumer debt		7	
Foreign exchange holdings	2		
Deposits/credits	4		
Money supply	17		
Interest rates	11		
Share prices	12	11	12
Company formation	1	6	
Foreign trade			
Exports	3		
Terms of trade	8		
business tendency survey and consumer opinion surveys	6		12
General situation	12		12
Production	8		12
New orders	10		12
Order books	13		12
Stocks			12
Employment			12
Financial situation of households			12
Purchases of households			
Economic activity in foreign countries			
Foreign series	4		

8. HARMONISED SYSTEM OF BUSINESS TENDENCY SURVEYS

Introduction

225. The European Union (EU) Directorate-General for Economic and Financial Affairs established a standard framework for business tendency surveys during the 1970s. The OECD subsequently worked with the EU to adapt this system for use by other countries in Europe and Central Asia and, in collaboration with regional organisations[29], the OECD is now assisting countries in Asia and Latin America to adopt what is referred to here as the *harmonised system* of business tendency surveys. It should be noted that although the *harmonised system* described here is fully compatible with that used by Member states of the European Union it differs in two respects. The questionnaires contain more questions than the *core list* recommended by the EU and surveys for service activities are included in addition to industry, construction and retail trade.

226. There are two advantages for countries in using the harmonised system. First, the survey procedures and the questions used in this system have been extensively tested over many years and in more than 30 countries that differ significantly in industrial structure and stage of economic development. The harmonised system thus uses survey questionnaires and procedures that have been shown to produce business tendency survey data that has proved reliable and useful for policy makers.

227. Second, use of the harmonised system allows participating countries to compare their business tendency survey results with those of neighbouring or competitor countries. It also makes it possible to construct regional totals or totals for economic groupings, such as OECD, Commonwealth of Independent States, Association of Southeast Asian Nations or the European Union. In a world of increasing globalisation, the ability to compare between countries and regions is clearly an advantage.

228. Below are given the main recommendations, drawn from the earlier Chapters, for carrying out business tendency surveys compatible with the harmonised system.

Kinds of activities to be covered

229. The harmonised system includes surveys of four sectors:

- *industry*, which cover manufacturing and, depending on their importance, mining and quarrying, and gas, water and electricity;
- *construction;*
- *retail trade;*
- *services.*

29. The regional agencies mainly concerned are the *United Nations Economic and Social Commission for Asia and the Pacific* (ESCAP), the *Asian Development Bank* (ADB), and the *United Nations Economic Commission for Latin America and the Caribbean* (ECLAC).

230. These sectors have been selected because they cover the kinds of economic activities that are most sensitive to cyclical fluctuations. Agriculture is primarily influence by climate and many social and government services – health, education, defence, public administration, for example – respond slowly, if at all, to movements in the business cycle. Business surveys for these activities are therefore less relevant.

231. In addition to their sensitivity to business cycles, industry, construction and trade are interesting activities for economic analysis because they are indicators whose movements are usually correlated with three key macro-economic aggregates – *industry* with *GDP*, *construction* with *gross fixed capital formation* and *retail trade* with *private consumption.*

232. Historically, most countries have started with surveys of industry and then moved on to the other sectors, and this is a sensible way for countries to start implementing a programme of business tendency surveys.

233. Some business tendency surveys cover several kinds of economic activities, including manufacturing, trade, construction and services. This is not recommended in this *Handbook* because many of the interesting questions that can be covered in business tendency surveys are only relevant for particular activities. For example, i*nventories of finished goods* are not relevant for the trade and services sectors*; period of assured work,* which is an important question for the construction industry, is not relevant for other activities; *orders placed with suppliers* is significant for the retail trade survey but not for other sectors.

Target universe

234. The ideal coverage of business tendency surveys for each of the three sectors listed above is all enterprises engaged in the relevant kind of activity, regardless of their type of ownership, legal form, size, and whether or not one of the four kinds of activity is their predominant or secondary activity. In addition the target universe should cover all enterprises active at any time during the period covered in that survey, including any forecast period.

235. In practice, it will usually be necessary to confine the surveys to enterprises whose *predominant* activity was in one of the four activities mentioned above and which were active at the *beginning* of each survey year. This means that the survey sample should be updated every year.

Units

236. The *sampling unit* will usually be the enterprise and the *reporting unit* should be the establishment or kind of activity unit (KAU). The *response units* – where the questionnaire is sent for completion – will be negotiated with the selected enterprises.

Sample design

237. The sample should be a stratified random sample with a fixed panel that is updated before the first survey each year. Stratification of the enterprises is by:

- Kind of economic activity;
- Size according to employment in the groups: 1–19, 20–249, 250+, with the option of breaking down the 250+ group into: 250–499 and 500+.

This means that each stratum consists of the enterprises in a particular kind of activity which belong to the same size group.

Weighting

238. The recommended procedure is that the replies of a report unit belonging to enterprise i are multiplied by:

$$\frac{1}{f_1} \times w_i$$

where f_i = the sampling fraction for enterprise i

w_i = the number of employees in the report unit

The *simplified method* described in Chapter 5 can be used a second-best alternative.

Response rates

239. Assuming that the initial panel is selected as a stratified random sample and is then updated at regular intervals, the minimum response rate is 50%. Without the use of a fixed panel, the response rate will need to be somewhat higher – 60 or 70%.

Treatment of non–response

240. For qualitative questions, the recommended method is to assume the same distribution over the response alternatives [(+), (=) and (–)] as the responding report units in that industry. For questions requiring answers in percentages or numbers, assume that the non–responding report units have the mean value of responding report units in that industry.

Periodicity of the surveys

241. It is recommended that business tendency surveys should be carried out monthly. If the senior managers who are required to complete these survey forms are to be persuaded to answer a monthly survey, it is clear that the questionnaires must be limited to a few key topics. The harmonised system therefore uses very simple questionnaires on a monthly basis but every quarter or half-year the survey forms may include a few additional questions.

242. Some business tendency surveys have been started on a quarterly basis and later converted to monthly surveys. This may be a sensible way to start a business tendency survey programme, but the objective should always be to move to monthly frequency as soon as possible.

Timing

243. To achieve maximum comparability between countries, the harmonised system specifies when the surveys are to be carried out. Quarterly surveys should be carried out in January, April, July and October. Monthly and quarterly surveys should respect the following time schedule:

- questionnaires should reach respondents no later than the 25th of month *t* (where *t* is the month for which information is collected).

- respondents to send back completed questionnaires no later than the 10th of month *t+1* and results to be published no later than by the end of month *t+1*.

Content

244. Achieving comparability over time and between countries involves careful consideration of the content of the questionnaires regarding the variables to be covered, form of questions, reference periods, etc. Comparability is achieved by use of the harmonised questionnaire. Countries requiring additional information not sought in questionnaire can always include further questions but, to avoid over–burdening respondents, this option should be used with moderation.

245. The following general principles for business tendency surveys in all sectors are recommended:

- All information should be **qualitative**. "Qualitative" means that the respondent answers the question with information already available to him or her *without recourse to written records*. Most answers will be according to a three option ordinal scale and the others will be in percentages, in numbers or in yes/no form.

- All questions should refer to the **unit being surveyed** and not to the industry or economy as a whole. The senior managers who reply to business tendency surveys can be assumed to have special knowledge about their own business, but there is no reason to think that they are specially qualified to comment on the general economic situation.

- Questions referring to an assessment of the current situation should ask for comparisons with a **normal situation.**.

- Questions about the **past** compared with the present situation should refer to **one month or one quarter**, according to the periodicity of the survey;

- Questions about the **future** compared with the present situation should be refer to a future period of **3 or 4 months**;

246. The precise formulation of the harmonised questions will vary between countries depending on linguistic considerations. Annex A contains the recommended questions in English but the main concern is not the exact formulation of the wording but the underlying meaning of the questions.

The standard variables

247. Table 1 summarises the variables to be collected in the harmonised system.

Table 1. Overview of harmonised variables

	Type (scale) and assigned value of variable and period covered			
	Present period		**Future period**	
	Type/scale*	Assigned value	Type/scale*	Assigned value
Industry Survey				
Production	tendency	(+1), (0), (–1)	tendency 3–4 months	(+1), (0), (–1)
Order books, total and export	level	(+1), (0), (–1)	tendency 3–4 months	(+1), (0), (–1)
Stocks of finished goods	level	(+1), (0), (–1)	tendency 3–4 months	(+1), (0), (–1)
Selling prices			tendency 3–4 months	(+1), (0), (–1)
Employment			tendency 3-4 months	(+1), (0), (-1)
Production constraints	situation	yes/no		
Production capacity	level	(+1), (0), (–1)		
Capacity utilisation	level	percentage		
Investment			tendency 12 months	(+1), (0), (–1)
Type of investment	situation	yes/no		
Investment constraints	situation	yes/no		
Business situation	tendency	(+1), (0), (–1)	tendency 6 months	(+1), (0), (–1)
Construction survey				
Business activity	tendency	(+1), (0), (–1)		
Production constraints	situation	yes/no		
Order books	level	(+1), (0), (–1)		
Employment			tendency 3–4 months	(+1), (0), (–1)
Output prices			tendency 3–4 months	(+1), (0), (–1)
Period of production secured	situation	months		
New orders (contracts)			tendency 3–4 months	(+1), (0), (–1)
Financial situation	tendency	(+1), (0), (–1)		
Delays in payment by clients	tendency	(+1), (0), (–1)		
Technical capacity	level	(+1), (0), (–1)		
Retail survey				
Business situation	tendency	(+1), (0), (–1)	tendency 6 months	(+1), (0), (–1)
Stocks	level	(+1), (0), (–1)		
Orders placed			tendency 3–4 months	(+1), (0), (–1)
Employment			tendency 3–4 months	(+1), (0), (–1)
Selling prices	tendency	(+1), (0), (–1)	tendency 3–4 months	(+1), (0), (–1)
Financial situation	tendency	(+1), (0), (–1)		
Competition in own sector	tendency	(+1), (0), (–1)		
Activity constraints	situation	yes/no		
Services				
Demand	tendency	(+1), (0), (–1)	tendency 3–4 months	(+1), (0), (–1)
Employment	tendency	(+1), (0), (–1)	tendency 3–4 months	(+1), (0), (–1)
Activity constraints	situation	yes/no		
Business situation	tendency	(+1), (0), (–1)	tendency 6 months	(+1), (0), (–1)
Financial situation	tendency	(+1), (0), (–1)		
Access to credit	tendency	(+1), (0), (–1)		

* The exact scale used for each variable is given in the harmonised questionnaires in Annex A.

248. Sample harmonised questionnaires for Industry, Construction, Retail Trade and Services are given in Annex A.

Measurement scales

249. For a few questions, a yes/no answer is required - for instance when indicating the presence or absence of the various factors that might *limit production*. Questions about *capacity utilisation* and the *period of future production assured* require answers in percentages and numbers of months respectively.

250. For all other questions, respondents are offered three-option ordinal scales such as:

- Up/ Same/ Down,
- Above normal/ Normal /Below normal.

Seasonal adjustment

251. The harmonised questionnaires ask respondents to eliminate seasonal variations in giving their replies. Even so, some seasonality may remain, so before time series of balances should be systematically tested for seasonality using X-12-Arima or TRAMO/SEATS. If there is found to be any seasonal variation it should be eliminated. The *Demetra* software provided by Eurostat can be used for this purpose.

Classifications within sectors

252. Business tendency survey results for these four sectors are typically published with very different levels of detail – by kinds of activity, by type of product, by size of enterprise, by region etc. International comparisons are usually made at the most aggregated levels (total industry, total construction etc.) and the harmonised system described here does not specify the breakdowns that should be used at disaggregated levels. In general, it is clearly sensible to use classifications that are identical to those used for quantitative statistics in the four sectors. The following suggestions may be useful:

- For ***industry,*** the 2-digit level of ISIC Rev.3 could be taken as a target breakdown, but it should be adapted to highlight industries that may be important in particular countries. A classification that has been found useful in many countries that conduct business tendency surveys is the classification by ***end-use*** – *consumer goods, investment goods, goods for intermediate consumption*. Each of these end-use categories will move at different rates over the course of the business cycle[30].

- For ***construction***, it has been found useful to break down business tendency survey results into: *residential building; non-residential building, public works* and *total construction*.

- For ***retail trade***, some countries break down the results by: food, drink and tobacco; textiles, clothing and footwear; electrical and other household goods; motor vehicles; large multiple

30. The End-Use categories can be derived from 2-digit ISIC codes as follows:

ISIC Rev. 3	End-Use
15+16+17+18+19+22+23*+30*+31+32+33+36	Consumer Goods
29+30*+31+34+35	Investment Goods
20+21+23*+24+25+26+27+28	Intermediate Goods

Asterisk (*) indicates that the ISIC code needs to be split.

shops (including department stores and mail-order houses); other retailers and total retail trade.

- There is less experience with surveys of other ***services***, but one useful breakdown is between *business* and *personal* services. Countries where tourism is important publish data separately for a "*tourism industry*" composed of travel agencies, transport companies, hotels and restaurants.

ANNEX A. HARMONIZED QUESTIONNAIRES AND RESPONSE ALTERNATIVES

Industry Survey (i.e. for surveys that cover one or more of these activities: *mining, quarrying, manufacturing, electricity, gas and water)*

Q.1 **Excluding normal seasonal changes**, what has been your company's experience over the past three to four months with regard to the **volume** of *production*:
up ( ), unchanged ( ), down ( )

Q.2 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to the **volume** of *production*:
up ( ), unchanged ( ), down ( )

Q.3 **Excluding normal seasonal changes**, do you consider that the present level of your *total order book* in **volume** terms is:
above normal ( ), normal ( ), below normal ( )

(firms with no order book are requested to estimate the level of demand)

Q.4 **Excluding normal seasonal changes**, do you consider that the present level of your *export order book* in **volume** terms is:
above normal ( ), normal ( ), below normal ( )

(firms with no order book are requested to estimate the level of demand from abroad)

Q.5 **Excluding normal seasonal changes**, do you consider that the present level of your *stocks of finished goods* in **volume** terms is:
above normal ( ), normal ( ), below normal ( )

Q.6 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to *average selling prices*:
increase ( ), remain stable ( ), decrease ( );

Q.7 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to the *number of people employed in your company*:
up ( ), unchanged ( ), down ( )

Q.8 What *factors* are limiting your ability to increase *production*. Please tick the most important factor or factors:

- -- none;
- -- insufficient domestic demand;
- -- insufficient foreign demand;
- -- competitive imports;
- -- shortage of labour;
- -- shortage of skilled labour;
- -- lack of appropriate equipment;
- -- shortage of semi–finished goods;
- -- shortage of raw materials;
- -- shortage of energy;
- -- financial problems (e.g. insolvency, credits);
- -- unclear economic laws;
- -- uncertainty of the economic environment;
- -- others, please specify _____

Q.9 What is your current level of *capacity utilisation* (in per cent of normal capacity utilisation):_____

Q.10 Do you consider that the present *business situation* of your company is:
good ( ), satisfactory ( ), bad ( )

Q.11 Do you expect that the *business situation* of your company during the **next six months** will be:
better ( ), same ( ), worse ( )

Q.12 Do you consider that the present *financial situation* of your company is:
good ( ), satisfactory ( ), bad ( )

Q.13 Do you consider that the present situation concerning *access to credit* for your company is:
Easy ( ), normal ( ), tight ( )

Construction Survey

Q.1 **Excluding normal seasonal changes**, what has been your company's experience over the past three to four months with regard to the **volume** of *business activity*:
up ( ), unchanged ( ), down ( )

Q.2 With normal working hours, what is the *current operating time* secured, with regard to work in hand and work already contracted, in number of months:_____

Q.3 **Excluding normal seasonal changes**, do you consider that the present level of your *total order book* or production schedules in **volume** terms is:
above normal ( ), normal ( ), below normal ( )

Q.4 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to the **volume** of orders (contracts):
up ( ), unchanged ( ), down ( )

Q.5 Do you consider that the present technical capacity (amount and quality of equipment) of your company with regard to expected demand in the next 12 months is:
more than sufficient ( ), sufficient ( ), not sufficient ( )

Q.6 What *factors* are limiting your ability to increase *business activity*. Please tick the most important factor or factors:

-- none;
-- demand;
-- weather conditions;
-- cost of materials;
-- cost of labour;
-- cost of finance (e.g. interest rates);
-- access to bank credit;
-- shortage of skilled labour;
-- lack of equipment;
-- shortage of materials;
-- competition in own sector;
-- others, please specify.

Q.7 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to *average selling prices*:
increase ( ), remain stable ( ), decrease ( );

Q.8 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to the *number of people employed in your company*:
up ( ), unchanged ( ), down ( )

Q.9 Do you consider that the present *financial situation* of your company is:
good ( ), satisfactory ( ), bad ( )

Q.10 Do you consider that the present situation concerning *access to credit* for your company is:
Easy ( ), normal ( ), tight ( )

Retail and Wholesale Trade Survey

Q.1 Do you consider that the present *business situation* of your company is:
good ( ), satisfactory ( ), bad ( )

Q.2 Do you expect that the *business situation* of your company during the next six months will be:
better ( ), same ( ), worse ( )

Q.3 **Excluding normal seasonal changes**, what has been your company's experience over the past three to four months with regard to the *competition* in *your sector of activity*:
up ( ), unchanged ( ), down ( )

Q.4 What *factors* are limiting your ability to increase *business activity*. Please tick the most important factor or factors:

-- none;
-- demand;
-- supply;
-- cost of labour;
-- cost of finance (e.g. interest rates);
-- access to bank credit;
-- sales surface;
-- storage capacity;
-- competition in own sector.
-- Others, please specify

Q.5 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to the **volume** of *orders placed with suppliers*:
up ( ), unchanged ( ), down ( )

Q.6 **Excluding normal seasonal changes**, do you consider that the present level of *your stocks* in **volume** terms is:
above normal/too large ( ), adequate/normal for season ( ), below normal/too small ( )

Q.7 **Excluding normal seasonal changes**, what has been your company's experience over the past three to four months with regard to *average selling prices*:
increase ( ), remain stable ( ), decrease ( );

Q.8 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to *average selling prices*:
increase ( ), remain stable ( ), decrease ( );

Q.9 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to the *number of people employed in your company*:
up ( ), unchanged ( ), down ( )

Q.10 Do you consider that the present *financial situation* of your company is:
good ( ), satisfactory ( ), bad ( )

Q.11 Do you consider that the present situation concerning *access to credit* for your company is:
Easy ( ), normal ( ), tight ( )

Surveys in other Sectors (i.e. surveys that cover one or more of these activities: hotels and restaurants, transport and communications, financial and business services, personal services.)

Q.1 **Excluding normal seasonal changes**, what has been your company's experience over the past three to four months with regard to the **volume** of *demand*:
up ( ), unchanged ( ), down ( )

Q.2 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to the **volume** of *demand*:
up ( ), unchanged ( ), down ( )

Q.3 **Excluding normal seasonal changes**, what has been your company's experience over the past three to four months with regard to *the number of people employed in your company*:
up ( ), unchanged ( ), down ( )

Q.4 **Excluding normal seasonal changes**, what changes do you expect during the next three to four months with regard to *the number of people employed in your company*:
up ( ), unchanged ( ), down ( )

Q.5 What factors are limiting your ability to improve your *business situation*. Please tick the most important factor or factors:

-- none;
-- insufficient demand;
-- supply
-- cost of labour;
-- cost of finance (e.g. interest rates)
-- access to bank credit;
-- financial problems (e.g. insolvency, credits);
-- competition in own sector
-- others, please specify _____

Q.6 Do you consider that the present *business situation* of your company is:
good ( ), satisfactory ( ), bad ( )

Q.7 Do you expect that the *business situation* of your company during the **next six months** will be:
better ( ), same ( ), worse ( )

Q.8 Do you consider that the present *financial situation* of your company is:
good ( ), satisfactory ( ), bad ( )

Q.9 Do you consider that the present situation concerning *access to credit* for your company is:
Easy ( ), normal ( ), tight ( )

ANNEX B. EXAMPLES OF QUESTIONNAIRES USED IN BUSINESS TENDENCY SURVEYS

These are questionnaires used in the following surveys:

Country	***Name of survey***	***Institute***
Canada	Business Conditions Survey	Statistics Canada
Germany	Konjunkturtest fur Industrie	ifo Istitut für Wirtschaftsforschung
New Zealand	Confidential Survey of Business Opinions	New Zealand Institute of Economic Research
France	Enquête Mensuelle sur la Situation et les Perspectives dans l'Industrie	Institut National de la Statistique et des Etudes Economiques
Mexico	Encuesta de Coyuntura	Banco de Mexico
Russia	Business Survey for Basic Enterprises	Centre for Economic Analysis

Business Conditions Survey

Enquête sur les perspectives du monde des affaires

Confidential when completed	Confidentiel une fois complété
Collected under authority of Statistics Act, Revised Statues of Canada, 1985 Chapter S19	Renseignements recueillis en vertu de la loi sur la statistique. Lois revisées du Canada, 1985, chapitre S19
Manufacturing, Construction & Energy Division	Division de la fabrication, de la construction et de l'énergie
Monthly Survey of Manufacturing Section	Section de l'enquête sur les industries manufacturières
Ottawa, Ontario K1A 0T6	Ottawa(Ontario) K1A 0T6
For assistance call: 1-613-951-3507	Pour obtenir de l'aide 1-613-951-3507
Facsimile Number Numéro du télécopieur	(1-613-951-9499) (1-613-951-9499)

Please complete and return this questionnaire within the next week. Your prompt response is appreciated. This survey permits Statistics Canada to produce an early broadly-based summary of business opinion regarding production, employment, stocks and order levels and impediments to production in Canada manufacturing.
PARTICIPATION IS VOLUNTARY

Veuillez remplir et retourner ce questionnaire au plus tard dans une semaine. Votre promptitude serait très appréciée. L'enquête permet à Statistique Canada de résumer, le plus tôt possible, l'opinion du monde des affaires concernant la production, l'emploi, les niveaux des stocks et des commandes, ainsi que les entraves à la production dans l'industrie manufacturière canadienne.
LA PARTICIPATION EST VOLONTAIRE.

PLEASE COMPLETE THE FOLLOWING QUESTIONS BY MARKING AN X WITHIN THE APPROPRIATE BOX.
VEUILLEZ COMPLÉTER LES QUESTIONS SUIVANTES EN MARQUANT UN X DANS LA CASE APPROPRIÉE.

1. Are the production activities of this establishment impeded by difficulties in any of the following areas?
Votre production est-elle entravée en raison de pénurie dans l'un des domaines suivants?

a) shortage of skilled labour
pénurie de main-d'oeuvre qualifiée ☐ 19

b) shortage of unskilled labour
pénurie de main-d'oeuvre non-qualifiée ☐ 20

c) shortage of raw materials
pénurie de matières brutes ☐ 21

d) shortage of working capital
pénurie de capital de roulement ☐ 22

e) other (please specify on back of form)
autre (veuillez préciser au verso) ☐ 23

f) none at this time
rien à signaler pour l'instant ☐ 24

2. **ALLOWING FOR NORMAL SEASONAL CONDITIONS, it is the opinion of the management of this establishment that:**
COMPTE TENU DES CONDITIONS SAISONNIÈRES HABITUELLES, la direction de cet établissement estime que:

I the inventory of finished goods on hand in this establishment is:
les stocks en main de produits finis sont:

a) too high
trop élevés ☐ 26

b) about right
à peu près normaux ☐ 27

c) too low
trop bas ☐ 28

II orders received by this establishment are:
les commandes reçues sont:

a) rising
à la hausse ☐ 30

b) about the same
à peu près
les mêmes ☐ 31

c) declining
à la baisse ☐ 32

PLEASE COMPLETE QUESTIONS ON BACK – VEUILLEZ COMPLÉTER LES QUESTIONS AU VERSO

5-3100-1050 1993-06-21 STC/IND-310-60201 SQC/IND-310-60201

Statistique Canada Statistics Canada

Canada

III the present backlog of unfilled orders of this establishment is:
La valeur enregistrée des commandes en carnet est:

a) higher than normal / plus importante que d'habitude ☐ 34

b) about normal / à peu près normale ☐ 35

c) lower than normal / moins importante que d'habitude ☐ 36

or d) an orders book is not maintained by this establishment / ou cet établissement ne tient pas de carnet de commandes ☐ 37

IV the volume of production in this establishment during the next three months, compared with the last three months will be:
Le volume de la production pour les trois prochains mois par comparaison aux trois derniers mois sera:

a) higher / plus élevé ☐ 39

b) about the same / à peu près le même ☐ 40

c) lower / plus bas ☐ 41

3. Over the next three months, employment in this establishment will:
au cours du prochain trimestre, l'emploi dans cet établissement:

a) increase / augmentera ☐ 43

b) change little / changera peu ☐ 44

c) decrease / diminuera ☐ 45

Name of person – Nom du responsable (Please print) (en caractère s.v.p)	Position-Fonction	Telephone No –Numéro de téléphone	Date

E-mail – Courriel (Please print) (en caractère s.v.p)	Fax No – Numéro de télécopieur

Comments – commentaires

50

ifo Institut
für Wirtschaftsforschung
Forschungsbereich Unternehmensbefragungen
Postfach 86 04 60 81631 München
e-mail: umfragen@ifo.de Internet:http://www.ifo.de
Telefon: (089) 9224-0 bei Rückfragen: Herr Kunkel App. 1382
Telefax: (089) 9224-1463 Fr. Hauke App. 1224
98 53 69 Fr. Stenzel App. 1408
Fr. Forkl App. 1230

KT-Industrie West

Konjunkturtest Verarbeitendes Gewerbe

Die Fragen betreffen das unten eingedruckte Erzeugnis (nachstehend bezeichnet mit XY). Zutreffendes Kästchen bitte kennzeichnen.

Ihre Angaben werden **streng vertraulich** behandelt. Der gesetzliche Datenschutz ist voll gewährleistet.

(12-14) (18-19)

Kenn-Nr.

Juli 2002 **(Ihr aktueller Informationsstand)**

Bereich (XY):

Rücksendung des ifo Exemplars erbeten baldmöglichst

Aktuelle Situation

1) Wir beurteilen unsere **Geschäftslage** für XY als
- gut
- befriedigend
- schlecht

2) Unseren Bestand an unverkauften **Fertigwaren** von XY empfinden wir als
- zu klein
- ausreichend (saisonüblich)
- zu groß
- Lagerhaltung nicht üblich

3) Unseren **Auftragsbestand** für XY empfinden wir als

	insgesamt	für den Export
verhältnismäßig groß		
ausreichend (saisonüblich) bzw. nicht üblich		
zu klein		
wir exportieren XY nicht		

Tendenzen im vorangegangenen Monat

4) Die **Nachfragesituation** für XY hat sich
- gebessert
- nicht verändert
- verschlechtert

5) Unser **Auftragsbestand** (In- u. Ausland, *wertmäßig*) für XY ist
- gestiegen
- etwa gleich geblieben (bzw. nicht üblich)
- gesunken

6) Unsere inländische **Produktionstätigkeit***) bezüglich XY ist
- gestiegen
- etwa gleich geblieben
- gesunken
- keine nennenswerte inländische Produktion

7) Unsere **Inlandsverkaufspreise** (Netto) für XY wurden - unter Berücksichtigung von Konditionsveränderungen -
- erhöht
- nicht verändert
- gesenkt

Erwartungen für die nächsten 3 Monate

8) Unsere inländische **Produktionstätigkeit***) bezüglich XY wird voraussichtlich
- steigen
- etwa gleich bleiben
- abnehmen
- keine nennenswerte inländische Produktion

9) Unsere **Inlandsverkaufspreise** (Netto) für XY werden - unter Berücksichtigung von Konditionsveränderungen - voraussichtlich
- steigen
- etwa gleich bleiben
- fallen

10) Der Umfang unseres **Exportgeschäfts** mit XY wird voraussichtlich - unter Berücksichtigung der bisherigen Exportabschlüsse und der laufenden Auftragsverhandlungen -
- zunehmen
- etwa gleich bleiben
- abnehmen
- wir exportieren XY nicht

11) **Beschäftigte** (nur inländische Betriebe) Die Zahl der mit der Herstellung von XY beschäftigten Arbeitnehmer wird
- zunehmen
- etwa gleichbleiben
- abnehmen

Erwartungen für die nächsten 6 Monate

12) Unsere **Geschäftslage** für XY wird in konjunktureller Hinsicht
- eher günstiger
- etwa gleich bleiben
- eher ungünstiger

*) Ohne Berücksichtigung unterschiedlicher Monatslängen und saisonaler Schwankungen

Sonderfragen:

A1) Unsere **Auftragsbestände** für XY entsprechen **gegenwärtig** einer Produktionsdauer

keine Bestände	bis zu etwa Monat(en)										Bei mehr als 10 bitte Zahl der Monate angeben
	½	1	2	3	4	5	6	7	8	9	10	

A2) Ende vergangenen Monats erreichten sie

keine Bestände	bis zu etwa Monat(en)										Bei mehr als 10 bitte Zahl der Monate angeben
	½	1	2	3	4	5	6	7	8	9	10	

B1) Die **Ausnutzung** unserer **Anlagen** zur Herstellung von XY (betriebsübliche Vollausnutzung = 100%) beträgt **gegenwärtig** bis ..... %

30	40	50	60	70	75	80	85	90	95	100	mehr als 100% und zwar:

B2) im **vergangenen Monat** waren es bis ....%

30	40	50	60	70	75	80	85	90	95	100	mehr als 100% und zwar:

C) Unter Berücksichtigung unseres *gegenwärtigen* Auftragsbestandes und des von uns in den nächsten 12 Monaten *erwarteten* Auftragseingangs halten wir unsere derzeitige **technische Kapazität** für XY für
- mehr als ausreichend
- ausreichend
- nicht ausreichend

D1) Unsere inländische **Produktionstätigkeit** wird zurzeit behindert
ja nein

D2) wenn ja, durch folgende Faktoren:
- zu wenig Aufträge
- Mangel an Fachkräften
- Mangel an Rohstoffen bzw. Vormaterialien
- zu geringe technische Kapazität
- Finanzierungsengpässe
- sonstige Faktoren

E) Unsere Wettbewerbsposition für XY hat sich in den letzten 3 Monaten gegenüber den 3 Monaten davor auf

	dem Inlandsmarkt	den Auslandsmärkten innerhalb der EU	den Auslandsmärkten außerhalb der EU
verbessert			
nicht verändert			
verschlechtert			
wir exportieren XY nicht			

CONFIDENTIAL

SURVEY OF BUSINESS OPINION

N.Z. INSTITUTE OF ECONOMIC RESEARCH (INC.),
PRIVATE BAG, WELLINGTON.

No.:
Quarter ending:

MANUFACTURERS & BUILDERS

closing date:

1. Which ONE of the following classifications most closely describes your firm's principal activity? (Note: Mark only ONE box.)

Consumers' Goods:

Furniture Furnishings	Appliances Electrical goods Electronics	Food Drink Tobacco	Clothing Footwear	Other Household Goods	Building Materials	Other Producers' Materials	Producers' Equipment	Vehicles (including parts, accessories, lubricants, fuels)	Other (please specify)	Building and Construction
1	2	3	4	5	6	7	8	9	10	11

(3.4)

2. How many EMPLOYEES are covered by this return?

1-20	21-50	51-100	101-200	201-500	Over 500
1	2	3	4	5	6

3. In which district is the MAIN PRODUCTION PLANT to which this return relates?

Auckland Northland	Waikato Bay of Plenty	Hawke's Bay East Cape	Taranaki Wanganui	Wellington Manawatu Wairarapa	Nelson West Coast	Canterbury Marlborough	Otago Southland
1	2	3	4	5	6	7	8

4. Do you consider that the general business situation in New Zealand will improve, remain the same, or deteriorate during the NEXT SIX MONTHS?

Improve	Same	Deteriorate	N/A
1	2	3	4

In general, do you find that getting the LABOUR YOU WANT TODAY is easier, the same, or harder than it was THREE MONTHS AGO?

	Easier	Same	Harder	N/A
5. Skilled; Specialist	1	2	3	4
6. Unskilled; Semi-skilled	1	2	3	4

7. What SINGLE factor, if any, is most limiting your ability to increase production? Shortage of .....

Orders/ Sales	Materials/ Components	Finance	Labour	Capacity	Other
1	2	3	4	5	6

8. Excluding seasonal factors, by how much is it currently practicable for you to increase your production from your EXISTING PLANT AND EQUIPMENT WITHOUT RAISING UNIT COSTS? (increase per cent)

None	1-5	6-10	11-20	Over 20	N/A
1	2	3	4	5	6

Do you expect the amount of new investment approved for your firm during the NEXT TWELVE MONTHS to be greater/same/less than that approved during the PAST TWELVE MONTHS?

	Greater	Same	Less	N/A
9. ...on Buildings	1	2	3	4
10. ...on Plant or Machinery	1	2	3	4

PAST AND FUTURE TRENDS

What has been your firm's experience during the PAST THREE MONTHS and what changes do you expect in your firm during the NEXT THREE MONTHS in respect of the following (exclude seasonal variations by comparing three month period with the same period a year earlier):-

Experienced change PAST three months					Expected change NEXT three months			
1	2	3	4		1	2	3	4
Up	Same	Down	N/A		Up	Same	Down	N/A
14								30
				11. Numbers employed				
				12. Overtime worked				
				13. Labour turnover				
				14. All new orders received				
				15. Output				
				16. Productivity				
				17. Deliveries in New Zealand				
				18. Export sales				
				19. Overdue debtors				
				20. Average costs				
				21. Average selling prices				
				22. Profitability				
				23. Stocks - Raw Materials				
				24. Stocks - Finished Goods				

25. Do you consider your PRESENT LEVEL OF STOCKS OF FINISHED GOODS to be

Too High	Satisfactory	Too Low	N/A
1	2	3	4

INSEE
Direction des Etudes
et Synthèses Economiques
Département de la Conjoncture
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INSEE
INSTITUT NATIONAL
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Cadre réservé à l'INSEE
QN01D / V 0007
Siren

Paris, le

Questionnaire à retourner
avant le
à l'adresse ci-dessus

Tél : 01 41 17 59 43

ENQUETE SUR LA SITUATION ET LES PERSPECTIVES DANS L'INDUSTRIE

MARS 2002

Madame, Monsieur,

L'INSEE renouvelle aujourd'hui son enquête mensuelle sur la situation et les perspectives dans l'industrie.

Ce document vous permettra de nous faire savoir si la situation de votre entreprise est semblable à ce qu'elle était lors de la dernière enquête ou si au contraire des modifications sont intervenues dans les tendances que vous observiez ou que vous prévoyiez. Les résultats vous seront systématiquement envoyés si nous recevons votre réponse dans les délais.
Nous vous rappelons que les réponses de cette enquête sont confidentielles et uniquement destinées à l'INSEE.
Vu l'avis favorable du Conseil National de l'Information Statistique, cette enquête est reconnue d'intérêt général.
La loi n° 78-17 du 6 janvier 1978 relative à l'informatique, aux fichiers et aux libertés, garantit aux personnes physiques concernées un droit d'accès et de rectification pour les données les concernant. Ce droit peut être exercé auprès de la direction générale de l'INSEE.

En vous remerciant d'avance pour l'accueil que vous réserverez à notre questionnaire, nous vous prions d'agréer, Madame, Monsieur, l'expression de notre considération distinguée.

Pour le Directeur Général de l'INSEE
Le Chef du Département de la Conjoncture

M. DEVILLIERS

COMMENTAIRES

Nom et fonction de la personne qui a répondu :

qn01dr 011029 R13

QUESTIONS RELATIVES AUX PRODUITS DE VOTRE ENTREPRISE

QN01D / 200203

DESIGNATION DES PRODUITS	PRODUIT 1 :	PRODUIT 2 :	PRODUIT 3 :	PRODUIT 4 :
	Encercler la flèche ou la réponse qui convient en plaçant un "S" si la tendance est purement saisonnière			
1. EVOLUTION DE VOTRE PRODUCTION				
a. Tendance au cours des 3 derniers mois	⇗ ⇨ ⇘	⇗ ⇨ ⇘	⇗ ⇨ ⇘	⇗ ⇨ ⇘
b. Tendance probable au cours des 3 prochains mois	⇗ ⇨ ⇘	⇗ ⇨ ⇘	⇗ ⇨ ⇘	⇗ ⇨ ⇘
2. EVOLUTION DE LA DEMANDE *(toutes provenances : France, Etranger)*				
a. Considérez-vous que, compte tenu de la saison, votre carnet de commandes ou votre demande sont actuellement	bien garni ou active / normal(e) / peu garni ou peu active	bien garni ou active / normal(e) / peu garni ou peu active	bien garni ou active / normal(e) / peu garni ou peu active	bien garni ou active / normal(e) / peu garni ou peu active
3. EVOLUTION DE LA DEMANDE ETRANGERE				
a. Considérez-vous que, compte tenu de la saison, votre carnet de commandes ou votre demande sont actuellement	bien garni ou active / normal(e) / peu garni ou peu active	bien garni ou active / normal(e) / peu garni ou peu active	bien garni ou active / normal(e) / peu garni ou peu active	bien garni ou active / normal(e) / peu garni ou peu active
4. EVOLUTION DE VOS STOCKS DE PRODUITS FABRIQUES *(produits prêts pour la vente)*				
a. Considérez-vous que, compte tenu de la saison, vos stocks actuels de produits fabriqués sont	supérieurs à la normale / normaux / inférieurs à la normale	supérieurs à la normale / normaux / inférieurs à la normale	supérieurs à la normale / normaux / inférieurs à la normale	supérieurs à la normale / normaux / inférieurs à la normale
b. Si la nature de votre production fait que vous travaillez toujours sans stocks de produits fabriqués encerclez la réponse ci-contre	jamais de stocks	jamais de stocks	jamais de stocks	jamais de stocks
5. EVOLUTION DE VOS PRIX DE VENTE				
a. Veuillez indiquer le sens probable de variation de vos prix de vente au cours des trois prochains mois *(hors taxes)*	⇗ ⇨ ⇘	⇗ ⇨ ⇘	⇗ ⇨ ⇘	⇗ ⇨ ⇘

VOS PREVISIONS SUR L'INDUSTRIE FRANCAISE DANS SON ENSEMBLE

(Il ne s'agit pas ici de votre entreprise, ni même de votre branche d'industrie, mais de l'ensemble de l'industrie française)

6. QUELLES TENDANCES VOUS PARAISSENT ACTUELLEMENT LES PLUS PROBABLES POUR L'EVOLUTION AU COURS DES 3 PROCHAINS MOIS :

a. Du volume de la production industrielle : ⇗ ⇨ ⇘

b. Du niveau général des prix des produits industriels : ⇗ ⇨ ⇘

Les produits que nous avons préimprimés sont ceux pour lesquels vous répondez habituellement. Dans le cas ou une modification serait intervenue dans votre production, veuillez indiquer en tête de(s) colonne(s), la ou les désignation(s) du ou des nouveau(x) produit(s).

BANCO DE MEXICO

DIRECCION GENERAL DE INVESTIGACION ECONOMICA

SUBGERENCIA DE ANALISIS DEL SECTOR PRODUCTIVO

OFICINA DE INDICADORES DE COYUNTURA (C - 42)
AV. JUAREZ No. 90, PISO 3
COL. CENTRO
06040 DELEG. CUAUHTEMOC, D.F.
Tels.: Conmutador 761 - 85 - 88 exts. 4318, 4328 y 4329.
Fax: 510 - 07 - 77 y 512 - 29 - 14

ENCUESTA DE COYUNTURA CORRESPONDIENTE A SEPTIEMBRE DE 1994

0	9	9	4

SR. EMPRESARIO:

POR FAVOR EXPRESE SU OPINION MARCANDO LAS CASILLAS CORRESPONDIENTES. AGRADECEMOS SU COMUNICADO POR VIA TELEFONICA, FAX O MENSAJERIA ANTES DEL **VIERNES 14 DE OCTUBRE DE 1994.**

A. DURANTE SEPTIEMBRE DE 1994, RESPECTO A AGOSTO DE 1994:

(Indique primero el signo y luego la magnitud aproximada)

A.1. EL VOLUMEN FISICO DE LAS VENTAS: .....
- Aumentó (+) [ ] 12
- Se mantuvo (=) [ ] 13
- Disminuyó (--) [ ] 14

Porcentaje: 0 | .50 | .75 | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 — especifique: más de 5 [ ] %

A.2. EL VOLUMEN FISICO DE LA PRODUCCION: ...
- Aumentó (+) [ ] 15
- Se mantuvo (=) [ ] 16
- Disminuyó (--) [ ] 17

Porcentaje: 0 | .50 | .75 | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 — especifique: más de 5 [ ] %

A.3. LOS PRECIOS PROMEDIO DE VENTA: ..... Aumentaron [ ] 18 — Se mantuvieron [ ] 19 — Disminuyeron [ ] 20

A.4. EL VALOR DE LOS INVENTARIOS DE PRODUCTOS TERMINADOS: ..... Aumentó [ ] 21 — Se mantuvo [ ] 22 — Disminuyó [ ] 23

A.5. EL NUMERO DE OBREROS Y EMPLEADOS: ..... Aumentó [ ] 24 — Se mantuvo [ ] 25 — Disminuyó [ ] 26

B. DURANTE SEPTIEMBRE DE 1994:

(Indique)

B.1. LOS INVENTARIOS DE MATERIAS PRIMAS, RESPECTO A LA PRODUCCION, RESULTARON: ..... Excesivos [ ] 27 — Adecuados [ ] 28 — Insuficientes [ ] 29

B.2. LOS INVENTARIOS DE PRODUCTOS TERMINADOS, RESPECTO A LAS VENTAS, RESULTARON: ..... Excesivos [ ] 30 — Adecuados [ ] 31 — Insuficientes [ ] 32

B.3. EL NUMERO DE PERSONAS -OBREROS Y EMPLEADOS- QUE LABORARON EN SU EMPRESA AL FINAL DEL MES FUE: ..... _____

B.4. EL NUMERO DE DIAS LABORADOS FUE: ..... _____

C. DURANTE OCTUBRE DE 1994, RESPECTO A SEPTIEMBRE DE 1994:

(Indique)

C.1. EL VOLUMEN FISICO DE LAS VENTAS: ..... Aumentará [ ] 33 — Permanecerá igual [ ] 34 — Disminuirá [ ] 35

C.2. EL VALOR DE LAS VENTAS: ..... Aumentará [ ] 36 — Permanecerá igual [ ] 37 — Disminuirá [ ] 38

C.3. EL VOLUMEN FISICO DE LA PRODUCCION: ..... Aumentará [ ] 39 — Permanecerá igual [ ] 40 — Disminuirá [ ] 41

C.4. EL VALOR DE LA PRODUCCION: ..... Aumentará [ ] 42 — Permanecerá igual [ ] 43 — Disminuirá [ ] 44

C.5. EL VALOR DE LOS INVENTARIOS DE PRODUCTOS TERMINADOS: ..... Aumentará [ ] 45 — Permanecerá igual [ ] 46 — Disminuirá [ ] 47

C.6. LOS PRECIOS PROMEDIO DE VENTA DE SUS PRODUCTOS: ..... Aumentarán [ ] 48 — Permanecerán iguales [ ] 49 — Disminuirán [ ] 50

D. EXPECTATIVAS INFLACIONARIAS A PARTIR DEL MES DE SEPTIEMBRE DE 1994:

D.1. LOS PRECIOS PROMEDIO DE SUS PRODUCTOS EN LOS PROXIMOS:

(Indique)

D.1.1. TRES MESES (SEP. 94 - NOV. 94): ..... Permanecerán iguales [ ] 51 — Aumentarán [ ] 52 — Disminuirán [ ] 53 — EN _____ %

D.1.2. SEIS MESES (SEP. 94 - FEB. 95): ..... Permanecerán iguales [ ] 54 — Aumentarán [ ] 55 — Disminuirán [ ] 56 — EN _____ %

D.1.3. DOCE MESES (SEP. 94 - SEP. 95): ..... Permanecerán iguales [ ] 57 — Aumentarán [ ] 58 — Disminuirán [ ] 59 — EN _____ %

D.2. ¿ CUAL ES SU EXPECTATIVA PARA LA TASA DE INFLACION, MEDIDA POR EL INDICE NACIONAL DE PRECIOS AL CONSUMIDOR ?:

PARA LOS PROXIMOS TRES MESES (SEP. 94 - NOV. 94) _____ %

PARA LOS PROXIMOS SEIS MESES (SEP. 94 - FEB. 95) _____ %

PARA LOS PROXIMOS DOCE MESES (SEP. 94 - SEP. 95) _____ %

LE INFORMAMOS LA INFLACION DE LOS TRIMESTRES PRECEDENTES		LE INFORMAMOS LA INFLACION DE LOS SEMESTRES PRECEDENTES		LE INFORMAMOS LA INFLACION DE LOS AÑOS PRECEDENTES	
JUN. 94 - AGO. 94:	1.4 %				
MAR. 94 - MAY. 94:	1.5 %	MAR. 94 - AGO. 94:	2.9 %	AGO. 93 - AGO. 94:	6.7 %
DIC. 93 - FEB. 94:	2.1 %	SEP. 93 - FEB. 94:	3.7 %	AGO. 92 - AGO. 93:	9.6 %
SEP. 93 - NOV. 93:	1.6 %	MAR. 93 - AGO. 93:	3.4 %	AGO. 91 - AGO. 92:	15.5 %

NOTA: SI SU EMPRESA NO ACUMULA INVENTARIOS POR FAVOR DEJE EN BLANCO LAS CASILLAS CORRESPONDIENTES.

ФЕДЕ ЬНОЕ ГОСУДАРСТВЕННОЕ СТАТИСТИЧЕСКОЕ НАБЛЮДЕНИЕ

КОНФИДЕНЦИАЛЬНОСТЬ ГАРАНТИРУЕТСЯ ПОЛУЧАТЕЛЕМ ИНФОРМАЦИИ

Код формы по ОКУД	Код отчитывающейся организации по ОКПО	Наименование отчитывающейся организации
0610073		Почтовый адрес

линия отрыва

УВАЖАЕМЫЙ ПРЕДПРИНИМАТЕЛЬ! В анкете проставляются Ваша оценка состояния и перспектив развития Вашей организации. При заполнении просьба отметить Ваш вариант значком «Х».

ОБСЛЕДОВАНИЕ ДЕЛОВОЙ АКТИВНОСТИ ПРОМЫШЛЕННОЙ ОРГАНИЗАЦИИ

за _____ (месяц) 199 __ года

Форма № 1-ДАП
Утверждена постановлением Госкомстата России от 12.05.97 № 26

Месячная

Представляют:	Сроки представления
Юридические лица — представительства юридических лиц всех форм собственности, осуществляющие промышленную деятельность (по перечню, установленному органом государственной статистики): — статистическому органу по месту, установленному статистическим органом республики, края, области, автономного округа.	15 числа текущего месяца

0610073							
1	2	3	4	5	6	7	8
формы документа по ОКУД	отчитывающейся организации по ОКПО	отрасли по ОКОНХ	вида деятельности по ОКПД	территории по СОАТО	министерства (ведомства) органа управления по СООГУ	организационно-правовой формы по КОПФ	формы собственности по КФС

1. Численность занятых в организации в текущем месяце

(человек; код по СОЕИ-0792)

	не более 100	101-500	501-1000	1001-5000	5001-10000	10001-25000	свыше 25000
А	1	2	3	4	5	6	7
1							

	В текущем месяце относительно фактического объема производства			В текущем месяце по сравнению с предыдущим месяцем			Перспективы на ближайшие 3-4 месяца		
	больше чем необходимо	достаточная	меньше чем необходимо	увеличение	без изменений	уменьшение	увеличение	без изменений	уменьшение
А	8	9	10	11	12	13	14	15	16
1									

2. Ситуация с производством и реализацией продукции

	Показатель	Уровень текущего месяца			В текущем месяце по сравнению с предыдущим месяцем			Перспективы на ближайшие 3-4 месяца		
		выше нормального	нормальный	ниже нормального	увеличение	без изменений	уменьшение	увеличение	без изменений	уменьшение
А	1	2	3	4	5	6	7	8	9	10
1	Выпуск основного вида продукции									
2	Спрос на продукцию									
3	Запасы готовой продукции									

Издательство «Ивановобланкиздат», а4/Г-14-1/, 06.97, т. 21000.

Ивановская областная типография. Заказ 2526

3. Факторы, ограничивающие рост производства

	Недостаточный спрос на продукцию предприятия		Высокая конкуренция со стороны зарубежных производителей	Отсутствие надлежащего оборудования	Неопределенность экономической обстановки	Недостаток			Ограничений нет	Другое*)
	внутри страны	за рубежом				денежных средств	в том числе на приобретение сырья и материалов	топливно-энергетических ресурсов		
А	1	2	3	4	5	6	7	8	9	10
1										

*) Указать конкретный фактор _____

4. Использование мощностей в текущем месяце, в % (процент, код по СОЕИ-0744)

	Не более 30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
А	1	2	3	4	5	6	7	8
1								

5. Оценка изменения цен

№	Тенденция изменения	Цены на сырье и материалы		Цены на реализуемую продукцию	
		в текущем месяце по сравнению с предыдущим месяцем	перспективы на ближайшие 3-4 месяца	в текущем месяце по сравнению с предыдущим месяцем	перспективы на ближайшие 3-4 месяца
А	1	2	3	4	5
1	Повышение *)				
2	теми же темпами				
3	большими темпами				
4	меньшими темпами				
5	Без изменений				
6	Снижение				

*) В случае, если в предшествующем месяце повышения цен не было, строки 2,3, 4 граф 2 и 4 не заполняются.

6. Оценка изменения финансовых показателей

	Показатель	В текущем месяце по сравнению с предыдущим месяцем			Перспективы на ближайшие 3-4 месяца		
		увеличение	без изменений	уменьшение	увеличение	без изменений	уменьшение
А	1	2	3	4	5	6	7
1	Прибыль						
2	Убыток						
3	Собственные финансовые средства						
4	Бюджетные финансовые средства						
5	Средства внебюджетных фондов						
6	Кредитные и заемные финансовые средства						
7	Кредиторская задолженность						
8	Дебиторская задолженность						

7. Участие в инновационной деятельности

	В текущем месяце		Перспективы на ближайшие 3-4 месяца		
	участвовало	не участвовало	предполагает участвовать	не предполагает участвовать	затрудняется предположить
А	1	2	3	4	5
1					

8. Общая оценка экономической ситуации

	В текущем месяце			Перспективы на ближайшие 3-4 месяца		
	хорошая	без изменений	~~снижение~~	повышение	без изменений	снижение
А	1	2	3	4	5	6
1						

«_____» _____ 199 ___ г. **Руководитель**
(ф., и., о., должность)

ANNEX C. EXAMPLES OF PRESS RELEASES

This annex contains examples of recent press releases from five business tendency surveys:

Country	***Name of Survey***	***Institute***
Belgium	Monthly Business Survey	National Bank of Belgium
Canada	Quarterly Business Conditions Survey: Manufacturing industries	Statistics Canada
Italy	Monthly ISAE Business Survey on Manufacturing and Extractive Firms	Istituto di Studi e Analisi Economica
New Zealand	Quarterly Survey of Business Opinion	New Zealand Institute for Economic Research
Singapore	Business Tendency - CBRD Survey	Centre for Business Research & Development

24 September 2002

NATIONAL BANK OF BELGIUM

Press release: monthly business survey September 2002

BUSINESS BAROMETER DROPS ONCE AGAIN IN SEPTEMBER

After having more or less stabilised in August, the National Bank's synthetic business barometer declined in September. The decrease is mainly due to a deterioration of the economic situation in the manufacturing industry. For the first time in seven months the gross indicator weakened in trade as well. The building sector, on the other hand, showed a slight recovery, although the gross indicator is still at a low level.

The smoothed synthetic curve, the movements of which reflect the fundamental trend of activity with a few months' delay, still displays an upward trend. In view of the gross results recorded in the past months, this upward trend might come to an end in the next months, though.

In the services to enterprises, the results of which are not included in the overall synthetic curve, the gross synthetic indicator fell as well. For the first time since the beginning of 2002 the smoothed synthetic indicator is showing a downward trend.

Business surveys indicators

	Gross synthetic curve			Smoothed synthetic curve		
	August 2002	September 2002	variation in points	April 2002	May 2002	variation in points
Manufacturing industry	-7,6	-9,8	-2,2	-9,1	-7,9	1,2
Building industry	-10,9	-9,9	1,0	-8,1	-9,0	-0,9
Trade	2,5	1,2	-1,3	-1,9	-0,9	1,0
OVERALL curve	**-6,6**	**-8,2**	**-1,6**	**-8,0**	**-7,0**	**1,0**
Business-related services [1]	-2,2	-3,3	-1,1	1,3	0,6	-0,7

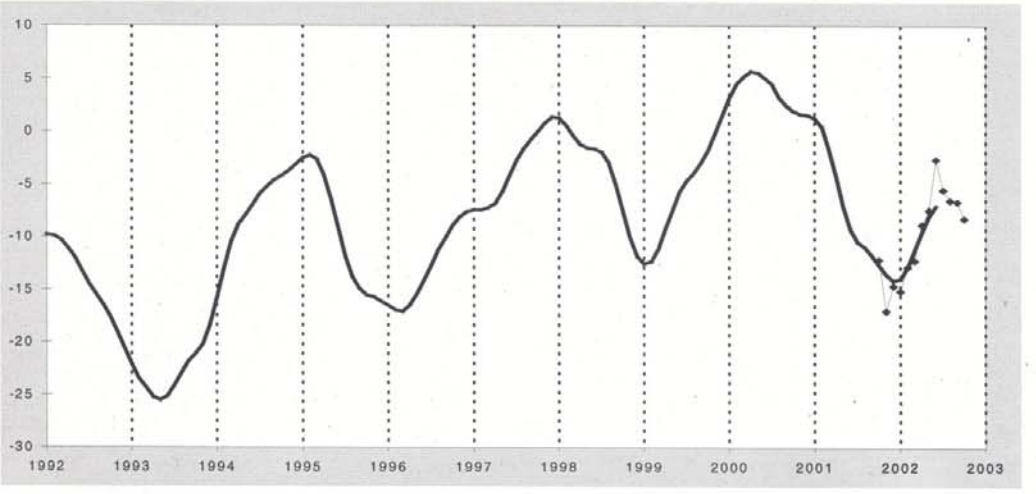
[1] The curve of business-related services is not incorporated in the overall synthetic curve

Source: NBB

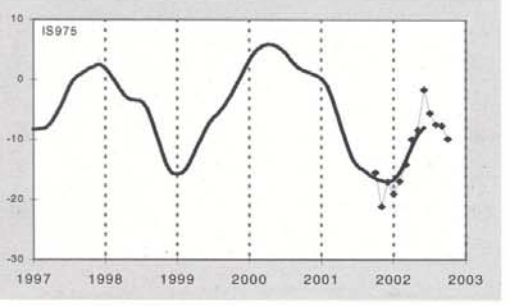
NATIONAL BANK OF BELGIUM

SEPTEMBER 2002

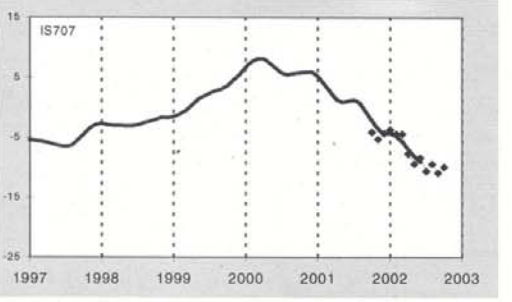
OVERALL SYNTHETIC CURVE



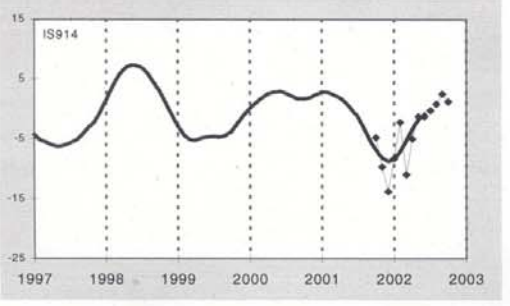
MANUFACTURING INDUSTRY



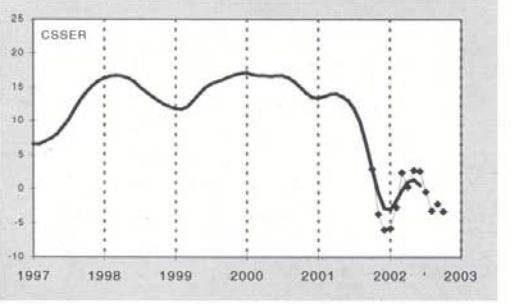
BUILDING INDUSTRY



TRADE



BUSINESS-RELATED SERVICES[1]



Seasonally adjusted and smoothed series ◆——◆ Seasonally adjusted series

[1] The curve of business-related services is not incorporated in the overall synthetic curve.

Source: NBB

THE BUSINESS SURVEYS INDICATORS

TABEL 1

Balances of "positive" answers or "higher than normal"(+) and "negative" answers or "lower than normal"(-).	Min. 1980-2002 (1)	Max.	Seasonally adjusted and smoothed series 2002 Jan.	Feb.	March	April	May	Seasonally adjusted series 2002 May	June	July	Aug.	Sept.
OVERALL SYNTHETIC CURVE	- 28,1	+ 5,7	- 12,8	- 11,2	- 9,5	- 8,0	- 7,0	- 2,6	- 5,5	- 6,5	- 6,6	- 8,2
MANUFACTURING INDUSTRY *(synthetic curve)*	- 29,0	+ 5,9	- 15,4	- 13,4	- 11,1	- 9,1	- 7,9	- 1,6	- 5,5	- 7,4	- 7,6	- 9,8
Trend												
Production rate	- 16,0	+ 11,9	- 7,4	- 5,1	- 2,6	- 0,4	+ 1,6	+ 8	+ 4	- 2	+ 4	- 3
Domestic orders	- 26,3	+ 5,0	- 12,8	- 11,6	- 10,4	- 9,5	- 9,1	+ 3	- 9	- 9	- 7	- 13
Export orders	- 24,4	+ 16,0	- 7,1	- 3,5	+ 0,6	+ 4,4	+ 7,4	+ 18	+ 9	+ 9	+ 3	- 2
Selling prices(2)	- 18,3	+ 20,4	- 6,5	- 6,0	- 4,6	- 2,6	- 0,6	- 2	+ 4	+ 1	+ 1	- 1
Appraisal												
Total order book	- 48,3	+ 5,0	- 28,5	- 27,8	- 26,6	- 25,4	- 24,3	- 18	- 23	- 24	- 22	- 24
Export order book	- 50,9	+ 4,0	- 30,4	- 28,6	- 26,1	- 23,4	- 21,3	- 16	- 20	- 20	- 23	- 23
Stocks of finished products	+ 21,3	0,0	+ 13,4	+ 11,3	+ 9,5	+ 7,9	+ 6,4	+ 7	+ 5	+ 2	+ 3	+ 4
Forecasts												
Employment	- 26,8	+ 6,3	- 13,0	- 11,4	- 10,1	- 9,4	- 8,8	- 8	- 8	- 11	- 7	- 8
Demand	- 32,9	+ 13,0	- 8,0	- 4,3	- 0,8	+ 2,1	+ 3,3	+ 7	+ 8	0	- 6	- 1
Selling prices(2)	- 14,9	+ 39,0	- 4,3	- 0,5	+ 3,6	+ 6,9	+ 8,4	+ 10	+ 13	+ 9	+ 1	- 1
Production capacity (in percentage of installed production capacity) Source: survey production capacity			-	-	-	-	-	-	80,4	-	-	-
TRADE *(synthetic curve)*	- 19,9	+ 10,0	- 7,1	- 5,3	- 3,4	- 1,9	- 0,9	- 1,3	- 0,3	+ 0,8	+ 2,5	+ 1,2
Trend												
Sales	- 22,1	+ 24,0	- 3,9	- 2,9	- 1,1	+ 1,0	+ 4,0	+ 6	+ 11	- 1	+ 16	+ 20
Selling prices(2)	- 16,1	+ 46,5	- 10,1	- 10,8	- 11,1	- 10,8	- 9,9	- 7	- 12	- 13	+ 1	+ 2
Appraisal												
Sales	- 32,9	+ 16,4	- 5,8	- 5,8	- 4,8	- 2,9	- 0,5	+ 2	+ 1	+ 3	+ 6	+ 12
Stocks(3)	+ 25,0	+ 5,1	+ 11,8	+ 10,9	+ 10,4	+ 10,0	+ 8,8	+ 8	+ 11	+ 2	+ 1	+ 1
Forecasts												
Demand	- 11,9	+ 19,0	- 1,8	+ 0,6	+ 2,8	+ 4,3	+ 4,6	+ 5	+ 4	+ 9	+ 4	- 10
Orders												
- to Belgian suppliers	- 22,8	+ 10,1	- 10,9	- 10,1	- 9,1	- 8,3	- 8,0	- 9	- 7	- 7	- 10	- 12
- to foreign suppliers	- 23,4	+ 15,6	- 9,0	- 6,8	- 4,8	- 2,9	- 1,5	- 4	0	+ 3	0	- 2
Selling prices(2)	- 7,0	+ 43,8	+ 1,5	+ 1,6	+ 2,1	+ 2,6	+ 2,9	+ 3	+ 5	+ 3	- 1	+ 8

(1) Extreme values of each indicator (smoothed series) since January 1980. The point of time of this figures is different according to each indicator.

(2) The price indicators are not taken into consideration for the calculation of the synthetic curve

(3) A positive, respectively negative balance, means that stocks, according to the assessment of entrepreneurs, are higher, respectively lower than normal. When synthtic curves are calculated, the sign of this indicator is therefor reversed.

Statistics Canada

Quarterly Business Conditions Survey: Manufacturing industries

July 2002

The manufacturing sector reported in early July a positive economic outlook for the third quarter. Producers indicated that inventories were under control, orders were still coming in and production should continue at about the same pace as in the second quarter.

After months of struggling with high levels of finished product inventories, manufacturers continued to indicate less concern, according to the Quarterly Business Conditions Survey taken in early July.

Almost 4,000 manufacturers responded to the voluntary survey, of which eight out of ten indicated that finished product inventory levels were about right.

Three quarters of manufacturers expected to maintain the same production levels for the next three months, and 86% reported their workforce would remain the same or increase. The vast majority of manufacturers indicated they were still satisfied with both current levels of new orders and unfilled orders.

Manufacturers less concerned about finished product inventory

About 82% of manufacturers indicated that the current level of finished product inventory was about right in July. This percentage was unchanged from April, but substantially higher than the 70% in July 2001.

Only 13% of companies felt that their inventories were too high, less than half the proportion of 28% in July 2001.

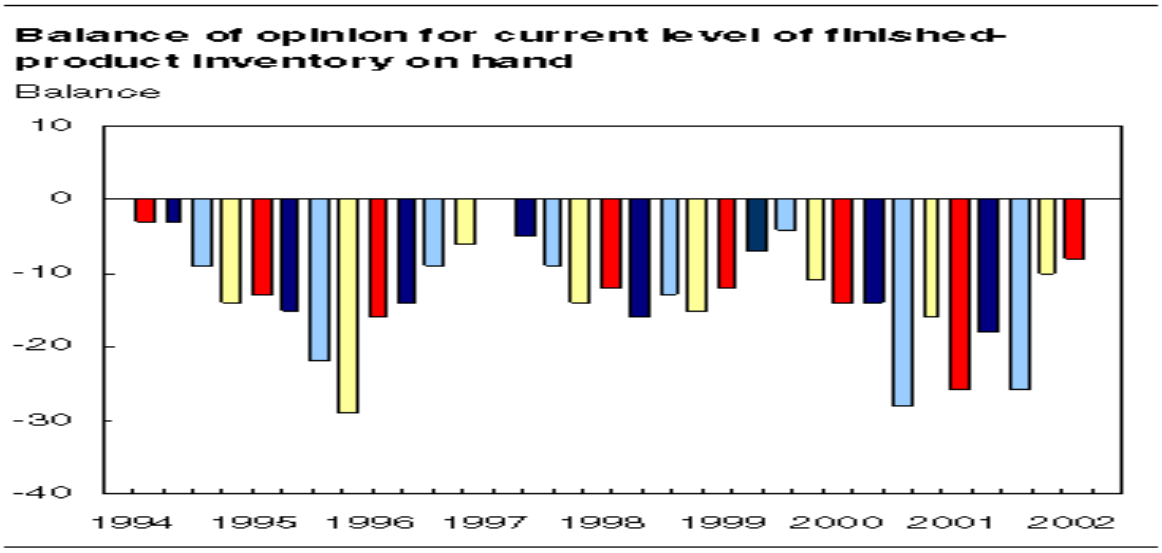
According to the Monthly Survey of Manufacturing for May manufacturers continued to draw down finished product inventories, closing the month at $19.3 billion, down from a high of $20.2 billion posted in June 2001.

In the July Business Conditions Survey, the balance of opinion concerning the current level of finished product inventory improved 2 points to -8. Manufacturers in the paper and allied products and primary metals industries were mostly responsible for this improvement.

The business conditions survey is conducted in January, April, July and October; the majority of responses are recorded in the first two weeks of these months. Results are based on replies from about 4,000 manufacturers and are weighted by a manufacturer's shipments or employment. Consequently, larger manufacturers have a larger impact on the results than smaller manufacturers.

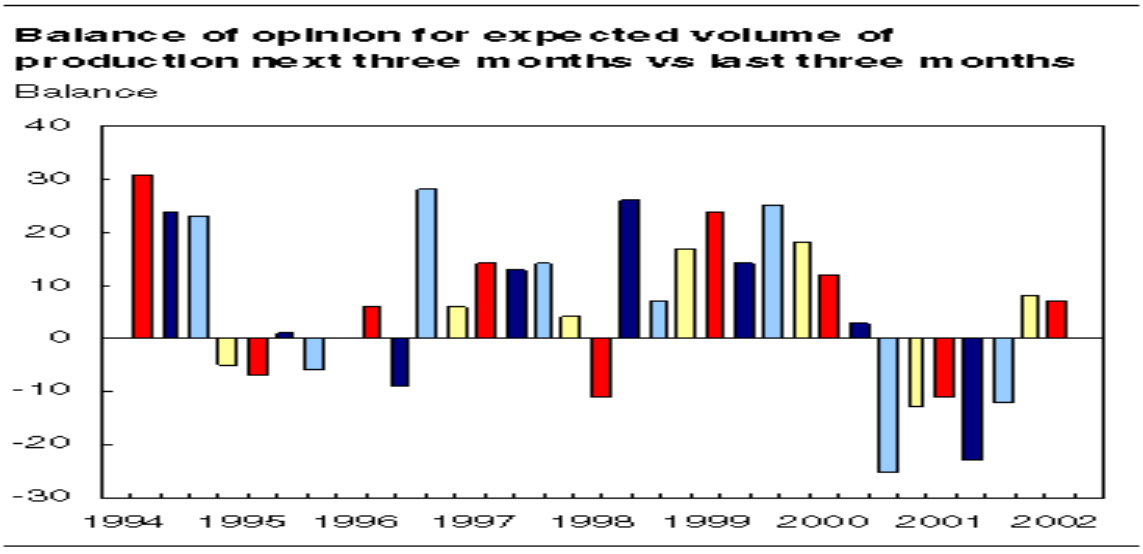
Except for the data on production difficulties, data in this release are seasonally adjusted.

The balance of opinion was determined by subtracting the proportion of manufacturers that stated their finished product inventory was too high from the proportion whose finished product inventory was too low.



Production prospects remain positive

In July, 91% of manufacturers indicated that the expected level of production for the coming three months would change little or increase. Only 9% of firms expected to reduce production in the next three months, down substantially from 17% in April and one-third the level of 28% in July 2001.
The balance of opinion for production prospects stands at +7, down 1 point from April. Producers in the transportation equipment, paper and allied products, refined petroleum and coal and chemical product industries were the major contributors to the positive balance of opinion in July.



Manufacturers still satisfied with level of orders received

Almost two thirds (64%) of manufacturers indicated in July that the number of orders received was about the same as in the second quarter. Some 20% of manufacturers reported that orders received were rising, while 16% indicated declining orders. Although the balance of opinion (+4) was 6 points lower than in April, it was still stronger than the -34 posted in the July 2001 survey.

Backlog of unfilled orders is less of a concern

The proportion of manufacturers indicating that the current level of unfilled orders was higher than normal or about right stood at 86% in July. Some 14% indicated the level was lower than normal, a marked improvement from the July 2001 survey, when this proportion stood at 40%.
With the same proportion of manufacturers (14%) indicating both increasing and decreasing unfilled order levels, the balance of opinion evened out at zero, still a 4 point improvement from the April survey. Producers in primary metals, paper and allied product and transportation equipment industries were the major contributors to the improved balance.
According to the Monthly Survey of Manufacturing, unfilled orders in May stood at $47.7 billion, after rising for four straight months.

Employment prospects in manufacturing remains stable

Some 86% of manufacturers indicated that their employment level would change little or increase in the coming three months.
According to the June Labour Force Survey, employment in manufacturing rose 113,000 since the beginning of 2002, returning employment in this sector to the peak reached in December 2000.
With 11% expecting to increase employment and 14% expecting to decrease the July balance of opinion for employment prospects for the coming three months stood at -3, down 1 point from April.

More manufacturers report production impediments

About 84% of manufacturers reported little in the way of production impediments in July, down 3 points from the April survey. The proportion reporting a shortage of skilled labour increased one point to 6%. A shortage of unskilled labour was reported by 2% of manufacturers.

Available on CANSIM: tables 302-0001 to 302-0003.
Only unadjusted data are available in these CANSIM tables.
For general information, contact the dissemination officer (1-866-873-8789; 613-951-9497; Fax: 613-951-9499; *manufact@statcan.ca*). To enquire about the concepts, methods or data quality of the release, contact Claude Robillard (613-951-3507; *robilcg@statcan.ca*), Manufacturing, Construction and Energy Division.

Business Conditions Survey: Manufacturing industries					
	July 2001	**October 2001**	**January 2002**	**April 2002**	**July 2002**
	Seasonally adjusted				
Volume of production during next three months compared with last three months will be:					
About the same (%)	55	57	52	58	75
Higher (%)	17	10	18	25	16
Lower (%)	28	33	30	17	9
Balance	-11	-23	-12	8	7
Orders received are:					
About the same (%)	52	52	50	58	64
Rising (%)	7	5	14	26	20
Declining (%)	41	43	36	16	16
Balance	-34	-38	-22	10	4
Present backlog of unfilled orders is:					
About normal (%)	54	50	65	70	72
Higher than normal (%)	6	4	6	13	14
Lower than normal (%)	40	46	29	17	14
Balance	-34	-42	-23	-4	0
Finished product inventory on hand is:					
About right (%)	70	78	66	82	82
Too low (%)	2	2	4	4	5
Too high[1] (%)	28	20	30	14	13
Balance	-26	-18	-26	-10	-8
Employment during the next three months will:					
Change little (%)	72	67	71	76	75
Increase (%)	11	9	10	11	11
Decrease (%)	17	24	19	13	14
Balance	-6	-15	-9	-2	-3
	Unadjusted				
	%				
Sources of production difficulties:					
Working capital shortage	2	3	3	2	2
Skilled labour shortage	7	7	4	5	6
Unskilled labour shortage	3	2	1	1	2
Raw material shortage	2	2	2	2	3
Other difficulties	6	6	5	3	3
No difficulties	80	80	85	87	84
No evident seasonality.					

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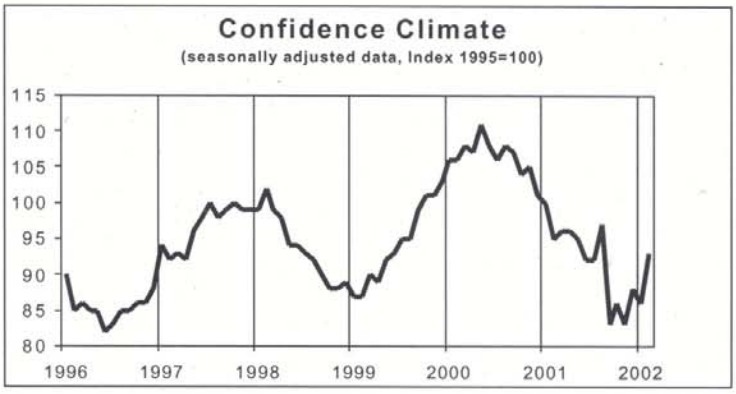
PRESS RELEASE

MONTHLY ISAE BUSINESS SURVEY ON MANUFACTURING AND EXTRACTIVE FIRMS

February 27, 2002

Reference period: January-February 2002

- **With its February survey, ISAE provides for the first time assessments and forecasts on firm variables referring to the current month and no longer to the previous month alone. Thus, ISAE aligns its reference period to the surveys carried out in France by INSEE and - since January 2002 - in Germany by IFO.**
- **The survey was carried out on a panel of 4,000 firms between February 1st and 20th; the questions concerned entrepreneurs' opinions on the current and on the previous months' firm variables and current forecasts on those same variables for the next three months. For temporary reasons, data on January three-month expectations are estimated through a time-series structural model. The transition phase shall be overcome in March.**
- **The raw confidence indicator of manufacturing firms rises in January and more sensibly in February; the seasonally adjusted indicator shows a slight contraction in January and a strong improvement in February. The seasonally adjusted indicator (base 1985=100) increases from 86 in January to 93 in February. Opinions on demand are improving too, particularly on domestic markets, while short-term expectations on productive activity remain positive. Finished products inventories fall below "Normal" levels.**
- **Between January and February, firms confirm their optimism on the short-term prospects of the Italian economy within a framework characterised by substantially moderate expectations on inflation.**



The present survey provides assessments and forecasts on the trends of the main firm variables, namely production, order books and selling prices, for which the ISAE qualitative data anticipate by months the official ISTAT data.

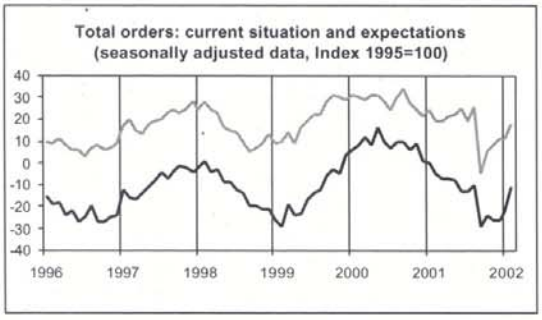
Data referring to March shall be diffused on March 26, 2002. The next ISAE survey on international comparisons (February 2002) is scheduled on March 1, 2002.

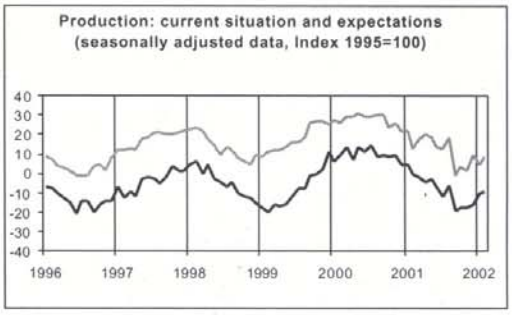
General Results. On the basis of the survey carried out by ISAE between the 1st and the 20th of February on a sample of about 4,000 manufacturing and extractive firms, the raw confidence climate indicator rises in January and increases even more in February. The seasonally adjusted indicator shows a slight contraction in January (falling to 86 as against 88 in December) and a strong improvement in February, averaging 93, that is a larger figure than that of June-July 2001.

The confidence climate is computed as the average between the opinions on order books and on inventories and the expectations on the short-term production expectations. The recovery is particularly evident in entrepreneurs' assessments on their order books, the seasonally balance of which passes from -26 in December to -22 in January and to -11 in February. Also short-term expectations on production (the balance falling from 10 in December to 5 in January and then coming back to 9 in February) rises to the highest peaks registered over the past few months. After a slight accumulation observed in January, inventories fall below "Normal" levels. With regard to order-book expectations (seasonally adjusted data), after the January stability (+11 as in December), the balance jumps to +18, thus getting closer to the July 2001 levels.

Situation in the reference period (January-February 2002). ISAE respondents indicate that the phase of strong order-book recovery is continuing in January and even more so in February. The improvement is particularly evident on the domestic market: the seasonally adjusted balance passing from -22 in December to -12 in January. The demand recovery is weaker - though significant - on foreign markets, where the seasonally adjusted balance rises from -23 to -17 between December and February. The industrial production itself shows signals of recovery: ISAE respondents indicate a production level improvement both in January and in February and their seasonally adjusted balance - which remains negative - increases from -16 in December to -10 in January and to -9 in February. The order-book and production recoveries go alongside with a decumulation of finished products inventories which - according to the ISAE sample - fall again below "Normal" levels for the first time since August 2001. If the ongoing trend continues, the inventories decumulation might lead to a production acceleration in the next few months.

Forecasts for the next three months. Those indications are confirmed by short-term expectations on demand and production trends. On the former variable, ISAE respondents expect a strong order-book recovery for the next few months: the balance remained stable in January at +11 (as in December) and jumped to +18 in February. In keeping with the indications emerged in the latest ISAE Consumer Survey (signalling a strong households' confidence climate improvement in February), firms producing consumer goods prove particularly optimistic in February (the balance passing from 17 in December to 14 in January and to 23 in February). Also investment goods firms show rosier expectations (the balance equalling +15 in February from +10 in December and +7 in January), while intermediate goods firms show a smaller increase (+12 in February as against +5 and +8 in December and January respectively). Also on the supply side, the declining phase which has been characterising the Italian industry after the Sept. 11 shock should be overcome. Short-term expectations are rosier and the February balance equals +9, which is slightly less than the December figure of +10, but much over the January level of +5. Also short-term expectations on the seasonally adjusted balance of the Italian economy stabilise on high levels between January and February, indeed higher than those registered in the terrorist attacks' aftermath. Finally, with regard to prices, respondents signal that the selling price moderate phase should continue in the next quarter as well. Indeed, the balance of three-month expectations on selling prices in January and February is decreasing in raw data, while it falls and then increases again in seasonally adjusted terms.





JANUARY-FEBRUARY SURVEY ON MANUFACTURING FIRMS AND COMPARISON WITH THE LATEST AVAILABLE ISTAT DATA

Series	ISTAT trend December on November (diffused in February)	ISAE trend January on December	ISAE trend February on January
Opinions on (seasonally adjusted data):			
Total order books (1)	Strongly increasing	Increasing	Strongly increasing
Domestic orders (1)	Strongly increasing	Stable	Strongly increasing
Foreign orders (1)	Increasing	Slightly decreasing	Strongly increasing
Production (2)	Increasing	Strongly increasing	Slightly increasing
Finished products inventories	/	Increasing	Decreasing
Three-month expectations (raw data) on:			
Production (2)	/	Increasing	Increasing
Total order books (1)	/	Strongly increasing	Increasing
Selling prices	/	Decreasing	Decreasing
General economic situation	/	Decreasing	Decreasing
Three-month expectations (seasonally adjusted data) on:			
Production (2)	/	Decreasing	Increasing
Total order books (1)	/	Stable	Strongly increasing
Selling prices	/	Decreasing	Increasing
General economic situation	/	Decreasing	Increasing
Raw confidence climate indicator	/	Slightly increasing	Increasing
Seasonally adjusted confidence climate indicator	/	Slightly decreasing	Strongly increasing

(1) Values.
(2) Volumes.

EXPLANATORY NOTES

Within the E.U. Harmonised Survey, ISAE carries out its monthly Business Survey on a panel of about 4,000 business firms operating in the manufacturing and mining sectors. Interviews are carried out partly with telephonic, partly with postal technique. Since February 2002 ISAE collects assessments and expectations on current month, no longer only on the previous one, in line with the similar surveys carried out in France by INSEE and –since January 2002- in Germany by IFO. Hereafter a list is provided of the main survey's characteristics.

- Monthly business surveys comprise (apart from quantitative information on the number of employees) eighteen qualitative questions aimed at obtaining information on the current situation and on the short-term (3 months) expectations on the main firm variables (such as order-books, production, finished products stocks, cash flow, selling prices, interest rates) as well as on expectations on the general economic trend. The questions on the assessments and expectations on the labour cost refer to the whole year and require answers expressed in percentage variations. On a quarterly basis, the Survey includes a further informations concerning international trade; firms' competitive position and production capacity; the number of effectively worked hours; the levels of new orders, stocks and export volume; the trend of employed labour; limits to production; the assured production duration and plant capacity utilisation.
- For each question, the results are expressed in terms of the relative frequency of each reply option. Balances (differences between favourable and unfavourable options) provide a synthetic indication on the observed phenomena. Central options (Normal, Stable) are not considered in the computation. Note that the balance for finished products stocks is computed by ISAE as the difference between the above-normal frequency and the sum of below-normal plus no-stock (while the E.U. excludes this option from computation).
- With regard to the seasonal adjustment methods, it is worth noticing that ISAE adopts the X11-ARIMA method, while the E.U. uses the Dainties method. Comparisons between the ISAE and the E.U. series show no relevant differences.
- The industrial confidence indicators is elaborated as the mean of the seasonally adjusted balances of the answers concerning order-books level, finished products stocks (expressed with inverse sign) and production forecasts..
- The January 2002 data has been estimated using a time series structural model.

Thursday 11 July 2002

Embargoed until 10 am, Thursday 11 July 2002

To the Chief Reporter

Attached is NZIER's press release on the July issue of the *Quarterly Survey of Business Opinion.*

In summary:

- Firms have a broadly neutral view of the general business conditions that will prevail over the next six months. A net 2% of firms reported that they expect a deterioration in general business conditions. This compares to a net 23% of firms expecting an improvement in the previous survey.

- The decline in confidence this quarter is entirely due to the usual seasonal decline in June. After removing regular seasonal variation, a net 9% of firms expect conditions to improve, compared to a net 3% expecting an improvement in the previous survey.

- The manufacturing sector is the only sector where the decline in confidence was larger than is normally the case in the June quarter. The main reason for this seems to be a sharp easing in expectations of export sales – reflecting firms' alarm of the recent rapid rise in the New Zealand dollar.

- Firms reported a strong rise in their own trading activity in the June quarter. After adjusting for seasonal variation, a net 27% of firms reported an increase in activity. This is an improvement from the March quarter survey, in which 18% of businesses reported a rise in activity.

- Like the trading activity indicator, the employment and investment intentions indicators are at their highest levels for some years. So aside from the question relating to general business confidence, the survey results point to a continuation of robust economic growth.

- A combination of factors, both international and domestic, have kept the lid on confidence this quarter. In the international arena, recent economic indicators from the US, Europe and Japan have been sufficiently tinged with negativity to give New Zealand businesses, particularly exporters, reasons for concern. Factors closer to home will have had a more direct effect on business confidence. The rapid appreciation of the New Zealand dollar took many by surprise, and a degree of uncertainty surrounds where the dollar will go next. Tightening monetary policy, both from the stronger dollar and through higher interest rates, has suppressed confidence.

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The high levels of current and expected future trading activity raise the question: why is confidence in general business conditions not higher? A combination of factors, both international and domestic, seems likely to provide an explanation.

In the international arena, recent economic indicators from the US, Europe and Japan have been sufficiently tinged with negativity to give New Zealand businesses, particularly exporters, reasons for concern. Revelations of accounting scandals in the US, and their subsequent adverse impact on world share markets, have added to the air of doubt about general business conditions. These factors, the 'war on terrorism', and political instability in various parts of the world, are likely to affect general business confidence more than firms' expectations for their own activity – at least in the short term.

Factors closer to home will have had a more direct effect on business confidence. The rapid appreciation of the New Zealand dollar took many by surprise, and a degree of uncertainty surrounds where the dollar will go next. Tightening monetary policy, both from the stronger dollar and through higher interest rates, has suppressed confidence. On top of that, there's the general election to be held on 27 July. Historically, business confidence has tended to be lower around election time.

While the indicators of firms' own activity suggest robust economic growth in the middle of 2002, the generally neutral level of confidence cautions that the rate of growth may moderate towards the end of this year.

There is a mix of confidence at the sectoral level. Manufacturers are the least confident. The retail and wholesale and services sectors expect little change in general business conditions over the next six months. The building industry is the most optimistic.

As well as being the least confident sector, manufacturers also recorded the biggest decline in confidence this quarter. This is despite output indicators remaining robust. The decline in confidence in the manufacturing sector was partly due to the usual seasonal decline in June, but also due to a sharp easing in expectations of export sales – reflecting firms' alarm of the recent rapid rise in the New Zealand dollar.

The effect of the stronger New Zealand dollar is further illustrated in a comparison between exporters and non-exporters in the combined manufacturing and building sector. Confidence of exporters and non-exporters is markedly different. A net 10% of exporting manufacturers and builders expect general business conditions to deteriorate over the next six months, down from a net 29% expecting an improvement in the previous survey. In contrast, a net 7% of non-exporters expect business conditions to improve, down from a net 21% in the March quarter survey.

CBRD
Centre for Business Research & Development
School of Business
National University of Singapore

BT-CBRD Business Activity Indices: 2001Q4 Summary Report

Signs of Economic Recovery

Findings from the 25th BT-CBRD survey indicate signs of economic recovery in the near future. Though firms have continued to suffer weaker performance in sales and profits, the downward trend in orders/new businesses has turned around. Consequently, firms are now less pessimistic over business prospects in the next six months.

The net balances for the four business activity indices in 2001Q4 were:

- -49% for sales (a decline of 9% points from 2001Q3)
- -69% for profits (a fall of 8% points)
- -35% for orders/new business (an improvement of 25% points) and
- -54% for business prospects in the next six months, January-June 2002 (an increase of 25% points).

Small firms were the worst hit in 2001Q4, recording the largest negative net balances in all performance indicators. Compared to a quarter ago, small firms also suffered deterioration in all performance indicators and registered the largest fall in sales, orders and business prospects net balances. In particular, small firms' sales net balance plummeted by 28% points to -81%. In contrast, large, local and foreign firms showed improvement in orders and business prospects net balances compared to a quarter ago. The orders net balance of foreign firms soared the most by 68% points, as against a quarter ago (-6% in 2001Q4 vs -74% in 2001Q3).

In 2001Q4, large firms performed better than small firms in all performance indicators. As large firms experienced a significant improvement in their orders net balance (-31% in 2001Q4 vs -61% in 2001Q3) while small firms continued to fare worse in their orders received (-76% in 2001Q4 vs -52% in 2001Q3), the performance differential between large and small firms has further widened for orders net balances in 2001Q4. Consequently, large firms tend to be more optimistic than small firms over business prospects in the next six months (-52% for large firms vs -79% for small firms).

Foreign firms, however, have continued to fare worse than local firms in sales and profits in 2001Q4 and are more pessimistic over business prospects. The net balances in sales (-66%) and profits (-78%) are the lowest since the survey began in 1995Q4. But orders net balance improved sharply to marginally below 0%.

Top Concern for Business in 2002

Business prospects is the top concern of firms in 2002 irrespective of firm size and ownership. Two out of every five firms cited business prospects as their top concern. Business prospects is of greater concern to small firms than to large firms, and to local firms than foreign firms. The second top concern for business in 2002 is cash flow, particularly for small and local companies. Likewise, on a sectoral basis, firms in the construction sector are most concerned with cash flow. The rest of the sectors cited business prospects as the number one concern.

Star Performer

The transport & communications sector is relatively less affected by the economic downturn. It is the star-performing sector clinching 16 out of 20 top positions covering all performance indicators for all, large, local and foreign firms.

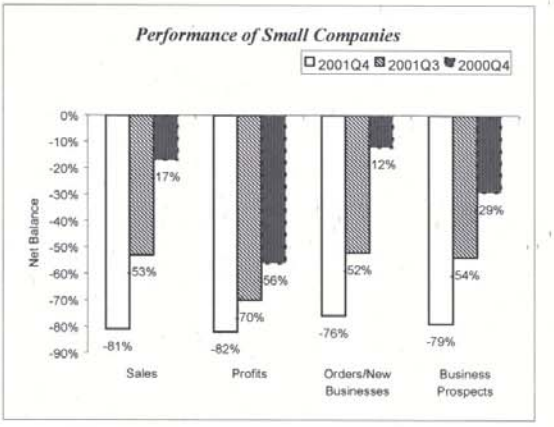
Looking Ahead

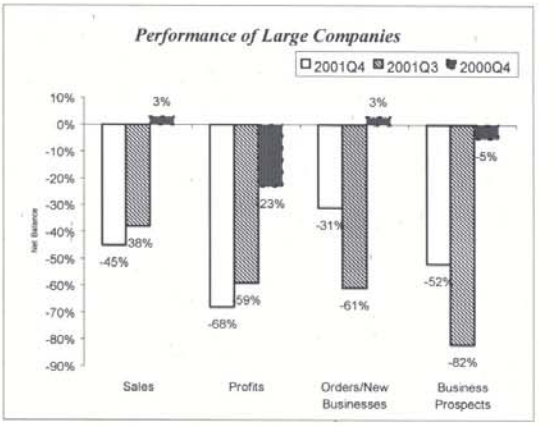
The magnitude of the negative net balances in sales (-49%) and profits (-69%) in 2001Q4 are close to that during 1998, in the midst of the Asian financial crisis. Compared to a quarter ago, the downward trend in net balances has moderated for profits and sales. There is a sharp improvement in orders and business prospects, albeit the net balances remaining in the negative region. This suggests that growth may pick up in the near future since orders and business prospects usually lead performance.

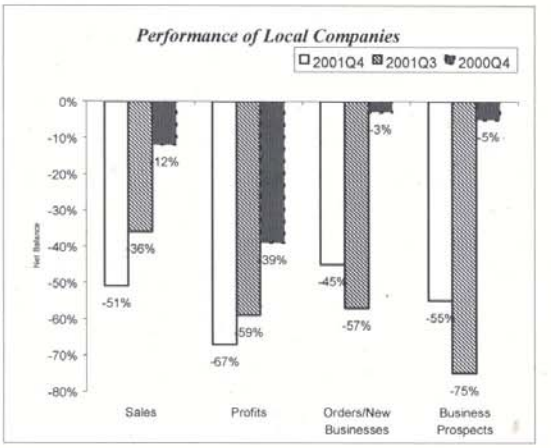
Survey Background

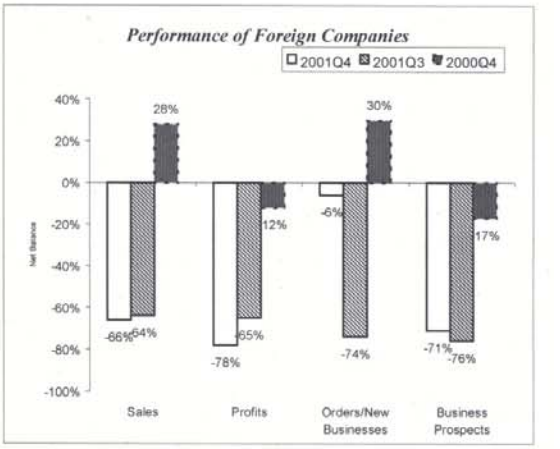
The latest survey, the 25th in the series, was conducted from December 2001 to January 2002. At the close of the survey, 127 responses from a sample of 700 companies were received, giving a response rate of 18.1%. The profile of the respondents shows a good mix:

- 62% and 38% are local and foreign firms respectively;
- 69% have sales of less than $100 million in 2001; and
- 46% of the firms are in manufacturing, 27% in commerce, and 11% in financial & business services.









CKB/LKC
CBRD/BIZ/NUS
26January2002

ANNEX D. SELECTION OF INSTITUTES CONDUCTING BUSINESS TENDENCY SURVEYS

WESTERN EUROPE	
Austria	Austrian Institute for Economic Research (WIFO) Arsenal, Object 20 A-Wien 3 http://www.wifo.at/
Belgium	Banque Nationale de Belgique Bd. De Berlaimont 5 B-1000 Bruxelles http://www.nbb.be/sg/en/homee2.htm
Denmark	Danmarks Statistik Sejrogade 11 Postbox 2550 DK-2110 Kobenhavn O http://www.dst.dk/dst/dstframesetuk.asp
Finland	Confederation of Finnish Industry & Employers (CFIE) Etelaranta 10 FIN-00130 Helsinki http://www.tt.fi/english/bts/
France	Institut National de la Statistique et des Etudes Economiques (INSEE) 18, Boulevard A. Pinard F-75675 Paris cedex 14 http://www.insee.fr/en/indicateur/indic_conj/liste_indice.asp
Germany	ifo Institut fur Wirtschaftsforschung Poschinger Strasse 5 D-81679 Munchen http://www.ifo.de/
Greece	Foundation of Economic & Industrial Research (FEIR) 11, Tsami Karatasou GR-11742 Athens http://www.iobe.gr/
Ireland	Irish Business & Employers Confederation (IBEC) Confederation House 84/86 Lower Baggot Street Dublin 2 http://www.ibec.ie/ibec/internet.nsf/LookupPageLink/IBEC_Opening
Italy	Institute for Studies and Economic Analysis (ISEA) Piazza Indipendenza 4 I-00185 Roma http://www.isae.it/
Netherlands	Central Bureau voor de Statistiek Prises Beatrixlaan 428 Voorburg http://www.cbs.nl/en/

Norway	Statistik Sentralbyra Dronningens Gate 16 Oslo 1 http://www.ssb.no/english/
Portugal	Instituto Nacional de Estatistica (INE) Av. Antonio Jose de Almeida P-1078 Lisboa Codex http://www.ine.pt/index_eng.htm
Spain	Ministerio de Industria y Energia Estudios y Promocion Industrial Paseo de la Castellana 160 E-28071 Madrid
Sweden	Konjunkturinstitutet, National Institute of Economic Research (NIER) Kungsgatan 12-14 Box 3116 S-10362 Stockholm http://www.konj.se/
Switzerland	Konjunkturforschungsstelle der ETH Zurich Swiss Institute for Business Cycle Research ETH-Zentrum WEH CH-8092 Zurich http://www.kof.ethz.ch/
Turkey	State Institute of Statistics Necatibey Caddesi No 114 06100 Bakanhklar Ankara http://www.die.gov.tr/ENGLISH/index.html
United Kingdom	Confederation of British Industry (CBI) Centre Point 103 New Oxford Street London WC1A 1DU http://www.cbi.org.uk/home.html
CENTRAL AND EASTERN EUROPE	
Bulgaria	National Statistical Institute 2 P. Volov Street 1054 Sofia http://www.nsi.bg/Index_e.htm
Czech Republic	Czech Statistical Office Sokolovska 142 18604 Praha 8 http://www.czso.cz/eng/angl.htm
Estonia	Estonian Institute for Market Research (EIMR) Ravala Street 6 EE0001 Tallinn http://www.ki.ee/en/

Hungary	Economic Research Company (GKI) Gerloczy Street 11 H-1052 Budapest http://www.gki.hu/english/fhuzlak.html
Latvia	Central Statistical Bureau of Latvia Lacplesa Street 1 LV-1301 Riga http://www.csb.lv/avidus.cfm
Lithuania	Lithuanian Department of Statistics Gedimino av. 29 2746 Vilnius http://www.std.lt/
Poland	Central Statistical Office Al. Niepodleglosci 208 00925 Warsaw http://www.stat.gov.pl/english/index.htm
Romania	National Commission for Statistics 16, Libertii Avenue, Scara 5, Sector 7 70542 Bucharesti http://www.insse.ro/
Russian Federation	Centre for Economic Analysis (CEA) 12, Sakharov Prospect 107078 Moscow http://www.cek.rfnet.ru/
Slovak republic	Statistical Office of the Slovak Republic Mileticova 3 82467 Bratislava http://www.statistics.sk/webdata/english/index2_a.htm
Slovenia	Statistical Office of the Republic of Slovenia Vozarski pot, 12 61000 Ljubljana http://www.sigov.si/
Ukraine	Ministry of Statistics – Statistical Research Institute Shota Rustaveli 3 25601 Kiev http://www.ukrstat.gov.ua/
NORTH AMERICA	
Canada	Statistics Canada 120 Parkdale Avenue Ottawa, Ontario K1A OT6 http://www.statcan.ca/start.html
Mexico	Instituto Nacional de Estadistica Geografia e Informatica (INEGI) Calle Republica Mexicana esq. Republica del; Salvador s/n Edifico El Dorado PH C.P. 20235 Aguascalientes, Ags. , Mexico http://www.inegi.gob.mx/difusion/ingles/portadai.html

United States	Institute for Supply Management (ISM former NAPM) P. O. Box 22160 Tempe 85285-2160 Arizona http://www.napm.org/
CENTRAL AND LATIN AMERICA	
Argentina	Instituto Nacional de Estadistica y Censos (INDEC) Av. Pte. Julioi A. Roca 609- 1067 Buenos Aires http://www.indec.mecon.ar/default.htm
Bolivia	Banco Central de Bolivia Calle Ayacucho Esquina Mercado s/n La Paz http://www.bcb.gov.bo/
Brazil	Fundacao Getulio Vargas (FGV) Praia de Botofago, 190, 9 andar –sala 925 Rio de Janeiro http://www.fgv.br/
Colombia	Fundacion para la Educacion Superior el Desorollo (FESD) Apartado Aereo 75074 Bogota
Dominican Republic	Banco Central de la Republica Dominicana Calle Pedro Henriquez Urena esq. Leopoldo Navarro Santa Domingo http://www.bancentral.gov.do/
Ecuador	Banco Central del Ecuador Avenida 10 de Agosto Y Briceno Casilla Postal 339 Quito http://www.bce.fin.ec/
Peru	Banco Central de Reserva del Peru Miro Quesada 441 Lima - 1 http://www.bcrp.gob.pe/
Venezuela	Banco Central de Venezuela Torro del Banco Central, piso 12 Av. Urdaneta esq. Carmelitas Caracas 10 10 http://www.bcv.org.ve/
CENTRAL ASIA	
Kazakhstan	Economic Research Institute (ERI), Economics Ministry of the Republic of Kazakhstan Uliza ABAJA 52 Almaty

Uzbekistan	Institute of Economics (IE) 314 Rakhmatullin Str. 700125 Tashkent
SOUTH EAST ASIA AND PACIFIC	
Australia	Australian Chamber of Commerce and Industry and Westpac Banking Corporation 60 Martin Place Sydney http://www.acci.asn.au/index_surveys.htm
China P.R.	National Bureau of Statistics No. 75 Yuetan Nanjie, Sanlihe Beijing 100826 http://www.stats.gov.cn/english/index.htm
Chinese Taipei	Council for Economic Planning & Development (CEPD) No. 3 Paoching Road Taipei 100 http://www.cepd.gov.tw/english/index.htm
Hong Kong, China	Census and Statistics Department 16/F-22/F, Wanchai Tower 12 Harbour Road, Wanchai Hong-Kong http://www.info.gov.hk/censtatd/home.html
India	National Council of Applied Economic Research (NCAER) Parsila Bhawan- 11 Indraprastha Estate New Delhi 110002 http://www.ncaer.org/
Indonesia	Bank Indonesia JL. M. Thamrin No. 2 Jakarta 10010 http://www.bi.go.id/bank_indonesia_english/main/survey/
Japan	Bank of Japan 2-1-1, Hongoku-Cho/Nihonbashi, Cyuo-Ku Tokyo 103-8660 http://www.boj.or.jp/en/siryo/siryo_f.htm
Korea	Bank of Korea 110 3-Ka Namdaemun-Ro Chung-Ku Seoul 100-794 http://www.bok.or.kr/bokis/bokis/m_statis_main?i_current=00000186&i_lan=eng
Laos	National Statistical Centre State Planning Committee Vientian E-mail : nscpp@laonet.net

Malaysia	Bank Negara Malaysia P.O. Box 10922 Jalan Dato'Onn 50480 Kuala Lumpur http://www.bnm.gov.my/
New Zealand	New Zealand Institute of Economic Research Inc. (NZIER) Private Bag. Wellington http://www.nzier.org.nz/
Philippines	Bango Sentral ng Philpinas A. Mabini Ermita Metro Manila http://www.bsp.gov.ph/home.htm
Singapore	Centre for Business Research & Development (CBRD) Faculty of Business Administration National University of Singapore 10 Kent Ridge Cresent Singapore 0511 http://www.fba.nus.edu.sg/rsearch/cbrd/
Thailand	Bank of Thailand Bangkhunprom Samsem Road Pranakom Bangkok http://www.bot.or.th/bothomepage/index/index_e.asp
Vietnam	General Statistical Office of Vietnam 2 Hoang Van Thu Street Hanoi
WEST ASIA	
Lebanon	Bank of Lebanon Banque de Liban Street P.O. Box 11-5544 Beirut http://www.bdl.gov.lb/
Saudi Arabia	Ministry of Planning PO Box 1358, University Street Riyadh 11183 http://www.planning.gov.sa/indexe.htm
AFRICA	
South Africa	Bureau of Economic Research (BER) 7th Floor, Economic & Management Sciences Building Bosman Street Stellenbosch 7600 http://www.ber.sun.ac.za/

GLOSSARY

Ancillary activity. Ancillary activities are those that exist to support the main productive activities of an entity by providing non-durable goods or services entirely or primarily for the use of that entity. Ancillary activities are usually small scale compared to the principal activity they support. The output is always intended for immediate consumption within the same entity and therefore it is not usually recorded separately.

Balance. Balances (also called *net balances*) are used to summarise answers to multiple-choice questions in business tendency and consumer opinion surveys. "No-change" answers (such as "normal" or "same") are ignored and the balance is obtained by taking the difference between the weighted percentages of respondents giving favourable and unfavourable answers.

Business cycle. There are several ways to measure "the business cycle". In general, it is defined as fluctuations in the level of economic activity around an estimate of its underlying trend. Starting from a position where the level of activity is close to the trend level, a business cycle is said to be complete when the level of activity has returned back to the trend following a period when it was above, then below, the trend level, or *vice-versa.*

Composite leading indicator. A **leading indicator** is an economic time-series which exhibits a leading relationship with respect to the turning points of a reference series. A **composite** leading indicator is constructed by combining two or more leading indicators into a single index number.

Correlation. Correlation is the tendency for two variables to both move in the same or opposite directions.

Correlation coefficient. Given a pair of related variables (X and Y), the correlation coefficient *(r)* measures the degree to which they co-vary in a linear fashion. *r* will be positive when the two variables move in the same direction and negative when the two variables move in opposite directions. r takes values from -1 to +1. Ignoring the sign, the larger the value of *r* the greater the strength of the association between the two variables.

Cross-correlation of business cycles. A measure of how closely aligned the timing of movements in activity are for two countries over their business cycles. The cross-correlation statistic can range from -1 to +1. In general, the closer the cross-correlation is to the value of +1 the more in *phase* and *synchronised* the business cycles will be. A value of -1 would indicate that the two series move perfectly in a *counter-cyclical* direction. A value near zero indicates that there is no statistical relationship between the series.

Cycle. A cycle in economic activity is the time span separating two turning points of the same nature (two peaks or two troughs).

Diffusion index. A diffusion index provides a summary of answers to multiple-choice questions in business tendency surveys. It is defined as the fraction of *favourable* answers plus half of the fraction of *no change* answers. Diffusion indices are alternatives to "Balances" as a way of summarising answers to multiple-choice questions.

Establishment. An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single (non- ancillary) productive activity is carried out or in which the principal productive activity accounts for most of the value added.

First-order auto-correlation. As used in business cycle analysis, it is a measure of the extent to which the current level of economic activity depends upon the level in the past. The higher the degree of dependence the longer or more *persistent* the business cycle will be.

Fixed sample. When a survey is repeated on several occasions, but observations are taken on the same sample instead of a new sample for each occasion, the sample is said to be fixed.

Follow-up. A second interview, – e.g. by telephone or personal visit – to obtain missing data or clarify original responses.

Growth cycle. Growth cycles are recurrent fluctuations in the series of deviations from trend. Growth cycle contractions include slowdowns as well as absolute declines in activity, whereas business cycle contractions include only absolute declines (recessions). The *OECD Cyclical Indicator System* tries to predict *growth cycles* rather than *business cycles*.

Kind-of-activity unit. A kind-of-activity unit is an enterprise, or a part of an enterprise, in which the principal productive activity accounts for most of the value added.

Lag. An event occurring at time $t+k$ ($k>0$) is said to lag behind event occurring at time t, the extent of the lag being k. An event occurring before another is said to have a negative lag.

Lag correlation. The correlation observed between two series where one of the series has been lagged with reference to the other.

Leading indicator. An economic indicator whose peaks and troughs during the business cycle tend to occur sooner than those of the general economy.

Local unit. A local unit is an enterprise, or part of an enterprise, which engages in productive activity at one location. A local unit may have more than one kind of economic activity.

Mean. When unqualified, the mean is usually interpreted as the arithmetic average. Other means are the *geometric* and *harmonic.*

Months for Cyclical Dominance. The MCD) is defined as the shortest span of months for which the *I/C* ratio is less than unity. *I* is the average month-to-month changes (without regard to sign) of the irregular component of the series and *C* is the trend-cycle component of the series. For quarterly series, there is an analogous measure, Quarters for Cyclical Dominance (QCD). MCD and QCD are used to determine the minimum number of months or quarters that need to be included in a moving average to eliminate irregular fluctuations.

MCD. See Months for Cyclical Dominance

Net balance. See *Balance.*

Non-response. In sample surveys, the failure to obtain information from a designated individual or unit for any reason (death, absence, refusal to reply) is termed non-response. The proportion of non-responses in the total number of individuals or units included in the sample is called the non-response rate.

Non-response errors. Non-response errors occur when the survey fails to get a response to one, or possibly all, of the questions. Non-response causes both an increase in variance because of the decrease in the effective sample size and because some method must be used to impute a response. Imputation

methods may cause bias if the non-respondents and respondents differ with respect to the characteristic of interest.

Non-sampling error. An error in sample estimates which cannot be attributed to sampling fluctuations. (See *Sampling Error*) Such errors may arise from many different sources such as non-response, defects in the frame, faulty demarcation of sample units, defects in the selection of sample units, mistakes in the collection of data due to misunderstandings, to negligence or dishonesty on the part of the investigator or of the interviewee, mistakes in editing or processing the data, etc.

Observation errors. Observation errors are components of non-sampling error and are generated during the data collection process. They may occur because the question is wrongly worded or misleading, because the interviewer makes an error whilst asking the question or because the interviewer records incorrectly the answer given by the respondent

Over coverage. Over-coverage means that some units that are outside the target universe have been included in the survey frame.

Panel survey. Business tendency surveys usually cover a group of enterprises that is kept fixed for two or more rounds of the survey. The group is referred to as a panel.

Peak. An observation in an ordered series is said to be a "peak" if its value is greater than the value of its two neighbouring observations.

Phase: Time span between a peak and a trough

Principal activity. As defined in the SNA, the principal activity of a producer unit is the activity whose value added exceeds that of any other activity carried out within the same unit. (The output of the principal activity consists of goods or services that are capable of being delivered to other units even though they may be used for own consumption or own capital formation.)

Probability sampling. See *Random Sampling*.

Processing errors. Processing errors are components of non-sampling error and are generated during data processing.

Qualitative data. The data collected in business tendency and consumer opinion surveys are termed "qualitative" because respondents are required to assign *qualities* to the items of interest. For example, they may be asked to say whether their order books are "higher", "lower" or "same" compared with some previous period. The qualitative data obtained in business tendency and consumer opinion surveys are also described as "categorical" because respondents are required to choose between two or more response categories, such as "better", "same", "worse".

Quantitative data. The data collected in most statistical surveys are quantitative in contrast to the qualitative data collected in business tendency and consumer opinion surveys. Quantitative data are expressed in numbers, tons, litres, amounts of expenditures, etc.

Quota sample. A method of sampling in which the sampling units are selected according to a number of *controls* designed to ensure that the units sampled are broadly representative of the target population. In the case of a consumer opinion survey the controls might refer to age, sex, income group and education level. In the case of a business tendency survey the controls might refer to size, location, and kind of activity.

Random sampling. Any method of selecting a sample based on the theory of probability. At any stage of the process of selection the probability of any set of units being selected must be known. It is the only general method known which can provide a measure of precision of the estimate. Sometimes the term random sampling is used in the sense of probability sampling.

Reference series. Cyclical indicator systems are constructed around a reference series. For a system of leading indicators, the reference series is the economic variable whose cyclical movements it is intended to predict. Indices of industrial production and gross domestic product are often used as reference series.

Reporting units. These are the units or individuals about which information is sought. In the case of business tendency surveys, reporting units are usually *establishments* or *kind of activity units*.

Response units. These are the persons who complete the questionnaires that provide the information about the reporting units. For business tendency surveys the response units are, ideally, the managers of the establishments or kind of activity units that constitute the reporting units.

Sample size. The number of sampling units which are to be included in the sample. In the case of a multi-stage sample this number refers to the number of units at the final stage in the sampling.

Sampling frame. A sampling frame is a body of information about the population being investigated which is used as the basis for selecting samples and in subsequent estimation procedures. For business tendency surveys the sampling frame may be a business register maintained by a national statistical office or the membership list of a trade organisation.

Sampling unit. Sampling units are the units – typically persons or enterprises – described in the list or register from which the sample is selected. For business tendency surveys, the sampling units are usually enterprises listed in a business register. This term is synonymous with "Survey Units".

Sampling error. That part of the difference between a population value and an estimate of that value which has been derived from a random sample, that is due to the fact that only a sample of values is observed. The totality of sampling errors in all possible samples of the same size generates the sampling distribution of the statistic which is being used to estimate the parent value.

Seasonal adjustment. Seasonal adjustments are made to economic time series to eliminate the effects of seasonal factors that affect economic activity. Examples of such factors are public holidays and the seasonal farming cycle.

Simple random sampling. Sampling in which every member of the population has an equal chance of being chosen.

Stratification. Stratification is the division of a population into parts, known as strata. The strata should be selected in such a way that the members of each stratum are relatively homogeneous with respect to the variables that are to be measured. Stratification may be done by kind of activity or size in the case of enterprises or by social class or income in the case of households.

Stratified sample. A sample selected from a population which has been stratified, part of the sample coming from each stratum. For business tendency surveys, the strata are usually defined by kind of activity and by size of enterprise.

Survey unit. See "Sampling units".

Target population. The target population is the entire group of individuals, households or enterprises whose characteristics are to be measured by means of a sample survey.

Trend. In time series analysis, a given time series can be decomposed into a trend component, a cyclical component, a seasonal component and an irregular component. An essential feature of the concept of trend is that it is smooth over periods that are long in relation to the unit of time for which the series is recorded. A trend is usually represented by some smooth mathematical function such as polynomials in the time variable or by moving averages.

Turning point. A turning point is an observation in a time series which is a peak or a trough. When several contiguous values are equal, and greater than or less than the neighbouring values, a convention is required in order to determine which is regarded as the turning point, e.g. the middle one may be chosen.

Unbiased estimate. A statistic is said to be an unbiased estimate of a given parameter when the mean of the sampling distribution of that statistic can be shown to be equal to the parameter being estimated.

Unbiased sample. A sample drawn by a method which is free from bias. This implies not only freedom from bias in the method of selection, e.g. random sampling, but freedom from any bias of procedure, e.g. wrong definition, non-response, design of questions, interviewer bias, etc.

Under-coverage. Under-coverage means that some units that should be included in the survey frame have been omitted.

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OECD PUBLICATIONS, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(30 2003 01 1 P) ISBN 92-64-19894-6 – No. 52687 2003