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Australian Bureau of Statistics

Discussion Paper

# The first iteration of the Business Longitudinal Database

## Australia

## 2004–05

www.abs.gov.au

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AUSTRALIAN BUREAU OF STATISTICS

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## INQUIRIES

- For further information about these and related statistics, contact Helen Harkin on Canberra (02) 6252 6531.

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# ABBREVIATIONS

| | |
|---|---|
| **ABN** | Australian Business Number |
| **ABR** | Australian Business Register |
| **ABS** | Australian Bureau of Statistics |
| **ACS** | Australian Customs Service |
| **ANZSIC** | Australian and New Zealand Standard Industrial Classification |
| **ATO** | Australian Taxation Office |
| **BAS** | Business Activity Statement |
| **BCS** | Business Characteristics Survey |
| **BIT** | business income tax |
| **BLD** | Business Longitudinal Database |
| **CURF** | confidentialised unit record file |
| **MFP** | multifactor productivity |
| **RADL** | Remote Access Data Laboratory |
| **SISCA** | Standard Institutional Sector Classification of Australia |
| **TAU** | type of activity unit |
| **TOLO** | Type of Legal Organisation |

# CHAPTER 1 INTRODUCTION

## BACKGROUND TO THE PURPOSE OF THE BLD

The aim of the Business Longitudinal Database (BLD) is to produce a reliable longitudinal dataset of both characteristics and financial data that will allow analyses of changes in the performance of a cohort of businesses over time. In at least its early iterations, only small and medium-sized businesses will be covered.

The BLD follows the earlier ABS development of a Business Longitudinal Survey, which ran from 1994 to 1999. Following significant demand from a range of users, specific funding for the development of the BLD was included in the 2005 Federal Budget. This funding also specified a requirement for the development of a longitudinal study of businesses in the food industry.

The development of the BLD to date has been informed by feedback from potential users in a range of fora, including an ABS-convened advisory group.

The BLD aims to increase understanding of:

- the activities or factors that are relevant to business performance; and
- the business characteristics that are associated with these activities or factors.

Within the range of performance measures, one of the more important is to obtain an understanding of business-level productivity growth. The BLD will also be useful for a range of other analyses, such as of factors leading up to business exits and of business dynamics more generally.

However, it is not proposed that the BLD become an omnibus vehicle for the deliberate compilation of general-interest information about businesses where such information is unlikely to relate to business performance.

## PURPOSE OF THIS PUBLICATION

The purpose of this release is to provide an overview of the range of data contained in the BLD so far and some basic examples of its analytical potential. This overview is designed to encourage feedback from potential data users regarding the adequacy of business characteristics topics and financial variables currently contained in the BLD and, also, the possible ways in which firm-level productivity and other aspects of performance may be analysed.

Whilst the publication contains some initial findings, these are based on a relatively small sample of businesses and are also subject to a number of other quality constraints.

These findings are therefore only illustrative and not adequate to form the basis for any decisions or for policy-making purposes.

## STRUCTURE OF THIS PUBLICATION

A description of the how the BLD is being constructed, its structure and its scope is provided in Chapter 2.

To assist in the future development of a BLD which best supports user needs, feedback is particularly sought in respect of the adequacy of two broad aspects of the BLD design:

- The selection of financial variables by which to analyse firm-level performance and productivity; and
- The range of characteristics or activity data collected to enable identification of possible drivers of productivity growth and performance more generally and the capacity of businesses to undertake those activities.

STRUCTURE OF THIS PUBLICATION *continued*

Chapter 3 outlines the measurement of business performance in the BLD and details a range of issues regarding the derivation of proxy measures of business productivity.

Chapter 4 presents details of the characteristics and activities topics collected in the Business Characteristics Survey (BCS) for the BLD sample in respect of 2004-05 and 2005-06. Also included is the rationale for collecting topics and, in some cases, reasons why topics have been omitted. Tables providing examples of possible analysis are also included.

Chapter 5 discusses issues regarding the scope and coverage of the BLD, including the collection of data for large businesses.

Chapter 6 discusses a number of related developments, including the integrated business characteristics strategy and the development of an ABS "business census" dataset. It is likely that some user needs that cannot be met directly from the BLD could be met from these other developments.

The published tables contained in this publication provide single dimensional analysis of selected variables only. These findings are provided only as illustrations of the range of data analysis possible. Given the current, small sample size of the BLD and the associated errors, these estimates should not be considered representative of the business population. Further information regarding the interpretation and quality of these analyses is provided in Chapter 7.

FUTURE AVAILABILITY OF BLD DATA

Because user requirements from the BLD include the ability to undertake user-specified analysis, the primary output from the BLD will be in the form of Confidentialised Unit Record Files (CURFs). It is anticipated that the initial release of a BLD CURF will occur in mid-2008 when data for approximately 9,000 businesses would be available. This sample would be sufficiently robust to enable analysis which, within quality constraints, would be representative of the business population. However, this timetable may vary depending on further analysis of quality, as the ABS progressively constructs the BLD.

The CURFs are likely to be accessible through the ABS Remote Access Data Laboratory (RADL). The RADL is an on-line database query system which enables the analysis of micro data. Further information about this facility is available on the ABS web site <www.abs.gov.au/access to ABS CURFs>.

It is anticipated that the initial CURF would contain confidentialised data from:

- the full range of topics collected in the Business Characteristics Survey (BCS);
- Business Activity Statement (BAS) data supplied to the Australian Taxation Office (ATO);
- Business Income Tax (BIT) data supplied to the ATO; and
- Exports and Imports data supplied to the Australian Customs Service (ACS).

The ABS wishes to acknowledge the assistance of both the ATO and ACS in this project.

## HOW TO PROVIDE FEEDBACK

The ABS welcomes feedback from users on the potential usefulness of the type of experimental data derived from the BLD and presented in this information paper. In particular, feedback is sought regarding:

- the type of analyses users will be looking to undertake based on data from the BLD;
- the range of characteristics data collected; and
- measures of business performance and, more specifically, productivity.

To provide feedback or for any queries regarding the future content of the BLD, please contact:

Helen Harkin by telephone (02) 6252 6531 or e-mail <business.demography@abs.gov.au>.

# CHAPTER 2 COMPOSITION OF THE BLD

## OVERVIEW

The BLD is designed to enable analyses of the characteristics and financial attributes of cohorts of businesses over time. The BLD sample has not been specifically designed to produce estimates which are representative of the total business population but, as the sample increases, estimates of reasonable quality will be available. The sample was designed to provide an even proportion of businesses, by industry and size, so that analysis over time of business classified by these dimensions will be possible once multiple time points are available in the BLD.

## STATISTICAL UNIT USED

For most ABS business surveys, the statistical unit is the Australian Business Number (ABN) unit for businesses with simple structures and the Type of Activity Unit (TAU) for businesses with complex structures. The TAU is comprised of one or more business entities, sub-entities or branches of a business entity within an Enterprise Group that can report production and employment data for similar economic activities.

To maximise the ability to link administrative data with survey data, only businesses with simple structures have been included in the BLD at this stage. Therefore, for the current BLD, the statistical unit is the ABN unit.

## SCOPE AND COVERAGE

The scope of the BLD includes actively trading businesses in the Australian economy. An actively trading business is one which is registered for an ABN and remits Goods and Services Tax (GST).

The BLD includes selections from non-employing and small and medium employing businesses across industry.

The sample of businesses is generally evenly distributed across industry and business size strata. A number of segments of the ABN registered population have been excluded from scope of the BLD. The basis for these exclusions relate to either the ability to protect the confidentiality of businesses or the inability to accurately match characteristics data with financial data for groups of businesses. Businesses in the following sectors have been excluded from the BLD:

- Government enterprises
- large businesses (i.e. with employment of 200 or more)
- businesses with complex structures
- not for profit businesses - classified to SISCA sector 5: Non Profit Institutions Serving Households
- non-employing businesses classified to TOLO 9: Trusts
- businesses classified to the following ANZSIC industries (which are dominated by the above exclusions):
  - ANZSIC 1993 Divisions
  - D- Electricity Gas and Water Supply
  - K- Finance and Insurance
  - M- Government Administration and Defence
  - N- Education
  - O- Health and Community Services
  - ANZSIC 1993 Subdivisions
  - 96- Other Services
  - 97- Private Households Employing Staff

SCOPE AND COVERAGE *continued*

- ANZSIC 1993 Groups
- 921 Libraries
- 922 Museums
- 923 Parks and Gardens

STRUCTURE

The BLD is comprised of consecutive panels of businesses for which annual characteristics and financial data are collected for five years. A panel will usually comprise approximately 3,000 businesses but the initial panel is slightly smaller because of changes to the coverage of business survey frames after the selection of the BLD sample. A new panel will commence each year for the duration of the study. When the BLD is fully populated, there will be five consecutive panels of businesses, totalling approximately 12,000 live businesses, included at all times.

In order to support specific government policy requirements, an integral part of the 2004-05 cohort was an additional focus on characteristics and performance of the food industry. As such, the sample comprised a high proportion of businesses in the food industry. This covered businesses in Agriculture, Manufacturing and Wholesale trade.

DATA SOURCES

At this stage, the BLD contains the combined results of the 2004-05 Business Characteristics Survey (BCS), as well as financial information sourced from the Australian Taxation Office (ATO) and exports and imports data from the Australian Customs Service (ACS). Further detail about each of these sources is provided in the following paragraphs.

In this release, only data from the BCS and BAS data from the ATO have been used to provide examples of the analytical potential of the BLD.

*Business Characteristics Survey (BCS)*

The BCS is an annual survey, first conducted for the 2004-05 reference period. It is designed to collect characteristics data in respect of businesses not available from any other source. Each year the survey will contain a consistent set of core questions to allow longitudinal analysis. In alternate years, the survey will also contain additional detailed questions relating to either business use of information technology or business innovation.

Detailed discussion of the content of the BCS is provided in Chapter 4.

*ATO Administrative Data*

Two sets of ATO administrative data are available in the BLD: Business Activity Statement (BAS) data and Business Income Tax (BIT) data.

Business Activity Statements are submitted by businesses in respect of their GST, and where applicable, Income Tax Withholding taxation obligations. Activity statements are submitted to the ATO on either a monthly, quarterly or annual basis, depending on the size, and to some degree, preference of the business. Where businesses in the sample have provided sub-annual data, the ABS has calculated annual estimates, based on the reported data, for inclusion in the BLD.

In some cases, data may be partially missing for an individual business. For example, a Business Activity Statement may only be available for three out of four quarters. In these cases, the ABS has applied an imputation strategy to estimate for these missing data. The ABS will continue to consult with the ATO to refine this strategy.

*ATO Administrative Data continued*

BIT returns are submitted annually and reflect the business activity and subsequent tax obligations for a financial year. BIT data are not available for all businesses due to the nature of taxation reporting requirements and individual business structures.

Data items have been selected from these two sources for inclusion in the BLD in order to produce various measures of business performance.

The BLD currently contains BAS and BIT data for each business for the 2002-03, 2003-04, 2004-05 and BAS only for the 2005-06 financial years.

*Australian Customs Service (ACS) Administrative Data*

Trade data sourced from the ACS are also included in the BLD. These are the same data that provide the source for ABS Merchandise Trade releases. Data are included for exporting and importing businesses in respect of 2003-04 and 2004-05 financial years. The data provide the total value of imports or exports by individual businesses by broad product categories.

# CHAPTER 3 ANALYSING BUSINESS PERFORMANCE

## INTRODUCTION

The main purpose of the BLD is to facilitate longitudinal analyses of business performance.

There are a range of measures that can be used to assess business performance over time. These include:

- at a fundamental level, whether the business survives;
- whether the overall size of the business grows or declines, e.g. in terms of employment, turnover, profits;
- various performance ratios derived from financial measures and employment; and
- changes in the productivity of the business.

The majority of these are relatively easy to measure and are based on data which are readily available in the BLD. Productivity growth, on the other hand, is much more challenging to measure given the data currently and potentially available in the BLD. This section identifies the issues involved in understanding business-level productivity growth and summarises the options and opportunities available in future without reaching firm conclusions. User feedback on these issues/options/opportunities would be most welcome. The aim is to enable a shared understanding of these issues and, ultimately, to reach agreement with regard to the most appropriate way of contributing to an understanding of business productivity, given the data currently and potentially available.

## BUSINESS PRODUCTIVITY

Significant work has been undertaken in Australia and internationally over a long period in developing better measures of macro-level productivity growth. The ABS is currently developing experimental measures of industry level multi-factor productivity as part of this work.

However, relatively little work has been undertaken within statistical agencies which successfully estimates productivity at the business-level.

Several studies have been undertaken which use a variety of proxy measures for firm output and labour and capital inputs. However, due to issues with data availability, none of these studies has been able to construct business productivity measures which match the concepts used in, or general quality levels achieved by, macro-level productivity measures.

## MEASURING OUTPUT

### *Background*

Two different measures of output are normally used in productivity measurement:

- gross output, which at the business equates with the production of the business or, in the case of Wholesale and Retail trade, the margins on that production; and
- value added, which takes away intermediate inputs used in the production of that gross output.

It is generally accepted that value added provides a better output measure at the whole-of-economy level. However, either gross output or value added may be an appropriate measure at the firm level.

*Background continued*

**EXAMPLE 1. Gross output and value added**

Two firms manufacture identical tables and sell the same number of tables at the same price. Their gross output is identical.

The first firm buys the table legs in kit form from other manufacturers, with their manufacturing activity being the construction of the table top and the attaching of legs to the top. The second firm performs the manufacturing work on both the top and legs themselves from raw materials. Therefore, the intermediate inputs of the second firm are lower than for the first firm, and thus the value added of the second firm will be greater.

*Data currently available*

Most output-related data available in the BLD are sourced from the Business Activity Statement (BAS) remitted by each business to the Australian Taxation Office (ATO). BAS contains the following relevant items:

- gross sales and other supplies; and
- non-capital purchases.

The gross sales item equates reasonably well in concept with a nominal price measure of gross output. There are two conceptual exclusions: own account capital work; and inventories of finished goods and work-in-progress. However, both these exclusions are likely to be insignificant for most businesses in terms of their impact on year-to-year movements.

The gross sales item can also contain some "noise" from the inclusion of second-hand capital sales. However, this is likely to affect relatively few small and medium-sized businesses.

Non-capital purchases equates well with the concept of intermediate inputs except that change in inventories of raw materials is not included.

By subtracting non-capital purchases from gross sales, a nominal price proxy for value added can be created which equates reasonably well with the concept of industry value added used in the Australian National Accounts.

*Nominal versus real measures*

While these nominal price measures are available, the required measures of output for productivity purposes are volume measures. That is, measurement would take into account any price changes that have occurred from period to period so that a real measure of output would be obtained.

If price changes are modest, are consistent for both gross output and intermediate inputs and there is consistency across all businesses, then the impact of price changes is likely to be insignificant in terms of the impact on analysis. That is, nominal price comparisons of individual businesses over time and between businesses will enable sensible analytical outcomes.

However, there are occasions where price movements can have a significant impact. For example, commodity price rises over the past two years make nominal price comparisons between mining businesses and other businesses challenging, all other things being equal (it will lead to the false impression that these mining businesses have had higher recent real output growth than other businesses).

*Nominal versus real measures continued*

A superficially attractive solution is to deflate the gross outputs and intermediate inputs of individual firms by industry or commodity-level price deflators and, indeed, many business studies take that approach. There are various price indices of outputs and materials used compiled in Australia and overseas available to apply such a method.

However, the ABS is concerned that such deflation may lead to the illusion of real output being measured where, in fact, results at the individual business level may be quite misleading.

There are two key problems in applying deflation to BLD gross output measures:

- Price indices of acceptable quality tend to be available at fairly broad levels. In most cases, indices at the level of product specialisation that firms are likely to operate at are not available;
- No data are currently available in the BLD with regard to the product mix of individual firm gross outputs.

**EXAMPLE 2. The effect of differences in price change**

Two firms manufacture furniture. Assume there is a price index available for manufactured furniture which shows a price rise of 5% over the past year. The first firm manufactures luxury-quality leather chairs, whose price has risen by 10% over the past year. A second firm manufactures budget-quality wooden chairs, whose price has not risen at all.

Assuming that quantities sold by each business have not changed over the period and all other things being equal, in real life the first firm increases nominal price output by 10% with no real change in output. The second firm has no change in either real or nominal price output.

However, applying the broader-level commodity-based deflator will give the false impression that the first-firm's real output has risen and the second firm's real output has fallen.

It is notionally possible for the ABS to collect some product and/or price information in the Business Characteristics Survey (BCS) which is sent to each business in the BLD. However, the ABS is very conscious of the burden placed on individual businesses in completing survey forms and the BCS forms are already lengthy. Increases in provider burden are likely to translate into lower response rates, which would have other quality implications for the BLD. This is compounded by the likelihood that such detailed information may not be readily accessible by the person filling in the BCS form.

Similar problems impact on attempts to deflate the intermediate inputs of individual businesses. While industry-level inputs data and accompanying deflators are available from the ABS's Input-Output tables, it is unlikely that any individual business will have a mix of inputs which concord closely with the industry average.

The differing inputs of the two table manufacturers in Example 1 illustrate this.

Again, the ABS could notionally collect more detailed data on intermediate inputs but the burden on each business may not be acceptable.

The ABS will continue to explore opportunities, especially with regard to investigating what data may be collectable on BCS forms. Additional thoughts from the user community are also welcomed.

## MEASURING LABOUR INPUTS

### *Background*

The ideal measure of labour inputs is to measure the hours worked in a firm, adjusted by the quality of the firm's labour. Quality is usually measured in terms of educational qualifications, although occupation or experience may also be appropriate indicators of labour quality.

### *Data currently available*

The BLD currently has two main sources of labour inputs available.

Firstly, BAS data contains a measure of wages and salaries paid by the business. This is reasonably well aligned with the National Accounts measure of wages and salaries (that is, excluding employer social contributions) except for the inclusion in BAS of payments to contractors who work almost exclusively for the firm.

BAS wages also exclude drawings from profits by proprietors and partners in unincorporated businesses. This is a significant shortcoming with regard to non-employing businesses, as labour costs and hence labour inputs will be measured as zero. Because of this, any proxy measures of labour inputs based on BAS wages could not be applied to non-employers. The exclusion of drawings from profits also impacts on employing unincorporated businesses. However, as wages for these businesses' employees are captured, the exclusion is less problematic.

Secondly, the BCS form collects total employment of the business. Employment includes both employees and working proprietors and partners. Further, the number of part-time workers is also collected and, from this, a measure of full-time equivalent employment - which would require an assumption to be made about the hours worked by these part time employees - could be modelled for each business.

The BCS form also collects a count of the number of employees ceasing and commencing employment during the year. This is collected to provide a measure of employment turnover, which is likely to have an impact on the firm's performance. Notionally, an employment figure at 30 June in the previous year could be derived by netting the turnover figure from the current 30 June employment count. However, such an estimate will be impacted by employees who worked for the business for less than a full year.

As employment is only currently available from the BCS form, it is not possible to directly produce employment-based labour input measures for periods prior to the inclusion of a business in the panel at this stage. However, it may be possible to either model prior-period employment (using wages and salaries information) or to directly collect prior-period employment in the BCS in future.

### *Shortcomings in available data*

It is not possible at this stage to directly produce an hours worked measure for use in the BLD. Further, the wages data available are in nominal rather than in real terms and so are affected by pay rises.

As with the product data discussed in the "Measuring Output" section, above, it is notionally possible to collect additional information on the BCS form, although whether this is practical will need to be assessed:

*Shortcomings in available data continued*

- Collecting a figure on the average pay rise granted to employees of the business seems possible but may not be practical to collect at reasonable quality in the event of a business negotiating variable payrises for employees under individual contracts. This also does not allow for quality improvements in labour input, which need to be taken into account.
- Aggregate hours worked data will be more difficult to collect, especially where a significant proportion of the firm's workforce is salaried.

It is also possible to model data based on industry averages with regard to payrises and hours worked. As with the output data, however, the extent to which such modelling creates bias, while giving the illusion of accuracy, will need to be assessed:

- Do businesses - other than those fully aligned with centralised wage fixing arrangements - grant payrises in line with industry averages?
- Do workers in any individual business work the same average hours as all businesses in an industry?

It is unlikely that either of the above assumptions will hold true in practice.

The example tables included in this release feature an operating ratio of current price value added to wages. Taking into account the issues noted above, this should not be regarded as a suitable proxy for labour productivity.

The ABS will continue to investigate the potential for additional data collection in the BCS and would welcome user suggestions for further research in this area.

## MEASURING CAPITAL SERVICES INPUTS

*Background*

The measurement of capital services inputs has been one of the most problematic features of measuring productivity at the macroeconomic level. In the experimental estimates of industry MFP currently being developed by the ABS, a capital stock figure is compiled using a perpetual inventory model and a rate of efficiency decline is applied to that stock to obtain a capital services estimate.

The challenges in measuring capital services relate to the number of assumptions that must be made in estimation. Assumptions are required regarding the rate of return on capital, depreciation rates and rates of efficiency decline, capital gains and losses, and average service lives of assets. As many assets have specific characteristics, collecting information to assess the quality of the assumptions is also difficult.

The measurement of capital services inputs at the firm level, given data available in the BLD, is similarly challenging although different issues impact.

*Data currently available*

The BAS and BIT data sources available in the BLD include three items which are potentially useful in measuring capital services inputs:

- Non-current assets are available from BIT (but there is no breakdown by asset type);
- Depreciation is available from BIT; and
- Capital expenditure is available from BAS (but there is no breakdown by asset type).

These items, either individually or in combination, could enable the measurement of at least a proxy for capital services.

*Data currently available continued*

Firstly, depreciation alone could serve as a useful proxy measure. Most macroeconomic developments in productivity measurement have discounted the appropriateness of depreciation for this purpose. However, at the firm level, it is more likely that depreciation might provide a measure which is close to the true figure.

A firm's depreciation is directly correlated with the composition of a firm's tangible assets, the original cost of these assets, and the expected useful life of these assets.

**EXAMPLE 3. Depreciation as a capital services proxy**

Assume that the depreciation schedule allows for: computers to be depreciated over 2 years; cars to be depreciated over 5 years; and lathes to be depreciated over 10 years. Also assume no price change in the cost of assets in recent years.

- Firm one has assets of: 1 computer, purchased for $2,000 1 year ago; a car, purchased for $20,000 3 years ago; and a lathe purchased for $50,000 5 years ago. The firms depreciation this year would be $10,000.
- Firm two has exactly the same asset composition, except that the car was purchased 1 year ago and the lathe was purchased 8 years ago. This firms depreciation would also be $10,000.

Under certain assumptions, both firms would be getting the same level of services out of their assets and so the depreciation amount would be a suitable measure.

However, there are three shortcomings in using depreciation as a measure of a firm's capital services:

- Price change will mean that an identical asset purchased at a different time will, under historical cost accounting, attract a different level of depreciation. Abstracting from the above case study, if the second firm bought the lathe for only $40,000 three years earlier then it's depreciation would be $9,000 rather than $10,000.
- Some firms may continue to use assets beyond their expected useful life. For example, if the above firms were still using their computers in 2 years time then the depreciation on them would be $0, despite the fact that they would still be obtaining services from them.
- The utility from some assets may degrade over the period of their useful life. For example, the actual service obtained from the 8 year old lathe might be less than from a newer lathe as the older one may frequently be taken out of service for repairs.

An alternative - commonly used in other studies in Australia and overseas - might be to construct a capital stock measure for each firm and to either use this as a proxy for capital services or to abstract a capital services figure from this.

Within this capital stock approach, there are three basic methodologies that have been used in various studies:

- Using the book value of non-current assets directly. This method suffers from similar historical valuation issues to using depreciation as a proxy for capital services;

*Data currently available continued*

- Constructing a perpetual inventories formula from information directly available from business data. That is, capital stock equals capital stock in the previous period less depreciation plus capital expenditure. A variant on this is to apply an inferred depreciation rate rather than using reported depreciation directly. As well as valuation issues, this method suffers from potential changes in asset composition over time. Further, this method will overstate capital stock in the absence of data on disposals of assets. Also, this requires a long time series of capital expenditure, which is unlikely to be available or would be very difficult to collect; and
- Inferring a capital stock figure for the firm by pro-rating based on the firm's share of industry-level capital stock using a range of potential measures (e.g. employment has been used in a UK study) as pro-ration factors. This method suffers from similar issues to those discussed in the "Measuring Outputs" section as it is unlikely that an individual firm's asset holdings and composition will match industry averages.

Each of these approaches is both difficult to implement and is unlikely to lead to an accurate measure of capital services inputs by each business.

Of the above alternatives, using depreciation directly appears to be the least flawed of the various alternatives for measuring capital services inputs. Clearly, though, there are significant imperfections in using depreciation.

## CONCLUSIONS AND FUTURE DEVELOPMENTS

As noted above, the purpose of this section is to achieve a common understanding of the issues faced in constructing the various components required to derive business productivity measures in the BLD.

At this stage, given the data available, it is not possible to construct an appropriate measure to enable an understanding of business productivity. However, there is clearly a large range of information available to help analyse business performance more generally.

Despite the measurement challenges, constructing a measure of business level productivity is considered an important element of future BLD developments, as productivity is one of the most important measures of business performance. Therefore, the ABS is looking to work with the user community to develop practical ways to construct appropriate productivity measures.

The ABS therefore welcomes feedback from users regarding the information in this section and suggestions for progressing this important piece of work.

# CHAPTER 4 BUSINESS CHARACTERISTICS DATA

## GENERAL DESCRIPTION

Data relating to the organisational characteristics and activities of businesses are obtained from the Business Characteristic Survey (BCS). The first iteration of the survey was in respect of the 2004-05 reference period. Subsequent to this despatch, a decision was made to incorporate the content of the Business Use of Information Technology (BUIT) and Innovation surveys into the BCS. The key objectives of this strategy are to reduce provider burden and to improve the integration of micro and macro level data.

Each year the BCS will contain a consistent set of core questions to allow longitudinal analysis. In alternate years, the survey will also contain additional detailed questions relating to either business use of information technology or business innovation.

One of the key aims of the BLD is to enable analysis of business performance, including the capacity of business to undertake activities which lead to performance growth and the relative importance of these activities in driving that growth. To better meet this objective, the scope of the questions included in the 2004-05 BCS were refined in the 2005-06 survey. The 2005-06 survey reflects these changes which provide a greater focus on aspects of business characteristics or operations which may have an impact on business performance and, in particular, productivity.

In developing the BCS survey, as with all ABS surveys, it has been necessary to manage the tension of developing a survey which enables the collection of comprehensive, integrated data with the responsibility of managing the reporting load of respondents.

The 2005-06 BCS content will remain largely unchanged for 2006-07 to enable the consolidation of the survey strategy. However, after this time there is scope to review some of the survey content and also the possibility of including specific additional topics.

The following summary provides an overview of the scope of characteristics data contained in the BLD, from both the 2004-05 and 2005-06 BCSs within broad business characteristic themes. Within each theme there is discussion of the topics which are covered. There is also some background as to why these topics were considered relevant and, where applicable, information about why some topics were not included. This summary does not discuss every survey topic in detail. It is intended to provide a general guide to the rationale applied to the selection or omission of topics. Also included are tables which provide examples of possible analyses in respect of selected topics. Details of the methodology used to derive these analyses is provided in Chapter 7.

In the context of the main purpose of the BLD, which includes an understanding of the drivers of productivity growth and of business performance more generally, user feedback is sought regarding the usefulness of the range of topics proposed for the BLD and the relative importance of topics.

## BUSINESS DEMOGRAPHICS

*Topics collected in the 2004-05 BCS:*

- number of locations
- industry in which business operates
- number of locations opened and closed during the year
- whether the business was home based
- the reasons for being home based
- time controlled by present owner

BUSINESS DEMOGRAPHICS *continued*

- time in operation regardless of ownership
- whether a single person was responsible for most business decisions
- the length of time this responsibility has been held
- whether the business was a family business
- percentage of foreign ownership

*Topics in the 2005-06 BCS:*

- number of locations
- industry in which business operates
- whether the business was home based
- whether the business was seasonal
- time controlled by present owner
- time in operation regardless of ownership
- percentage of foreign ownership

Key demographic data such as industry, business size, dispersion (i.e. number of locations) and length of business operation are important to enable the comparison of similar businesses.

Issues with regard to business demographics topics include:

- The justification for separately identifying home based businesses from their counterparts is not clear. It is acknowledged that in terms of infrastructure requirements and social policy development, home based businesses need to be considered separately from their counterparts. However, there is an argument that operationally, home based businesses would not be significantly different from other similar sized businesses and that, for many businesses, to be home based is just a stage in the life cycle of a business.
- The inclusion of a question on foreign ownership may provide some indication of degree of direct management control. However, the more direct reason for the inclusion of this question is that it enables analysis of the hypothesis that foreign owned businesses have greater access to innovation through their foreign owner.
- A number of business structure themed questions were deleted from the 2005-06 survey. One of these related to the identification of family businesses. The concept of what constitutes a "family business" is ill defined. It could in theory include a self-employed plumber who's partner assists with the bookkeeping or, equally, a very large incorporated company with members of the same family holding a majority company share. The topic on identification of family business was therefore excluded because, given this wide variation in business structure and management style, it was unclear how being a "family" business or otherwise had a direct relationship to business productivity or dynamics.
- Other topics related to the management decision making process, reasons for home based operation, or number of locations opened or closed during the year were excluded from the 2005-06 survey. The basis for this exclusion was that these topics did not have a relationship with business performance or because, in their existing form, they did not adequately capture the intended information.

BUSINESS DEMOGRAPHICS *continued*

The following table gives an example of the data available in the BLD regarding business demographics:

TABLE 1 - COMPARISON OF BUSINESSES BY LENGTH OF CURRENT OWNERSHIP, Experimental Estimates

| | NON-EMPLOYERS | | 1-4 EMPLOYEES | | 5-19 EMPLOYEES | | 20-199 EMPLOYEES | |
|---|---|---|---|---|---|---|---|---|
| | *Less than 5 years* | *5 years or more* | *Less than 5 years* | *5 years or more* | *Less than 5 years* | *5 years or more* | *Less than 5 years* | *5 years or more* |
| Number of units in sample *(no.)* | 218 | 332 | 198 | 462 | 169 | 480 | 95 | 341 |
| Number of businesses *('000)* | 280 | 499 | 102 | 227 | 57 | 116 | 16 | 24 |
| Median Sales | | | | | | | | |
| 2004–05 value *($'000)* | 54 | 60 | 169 | 266 | 674 | 737 | 1 179 | 4 108 |
| 2003–04 to 2004–05 movement *(%)* | 8.0 | 4.6 | 23.9 | 5.1 | 12.0 | 5.4 | 2.2 | 6.3 |
| 2004–05 to 2005–06 movement *(%)* | 0.7 | –1.7 | 8.3 | 1.0 | 2.7 | 4.0 | 5.3 | 1.7 |
| Median Wages | | | | | | | | |
| 2004–05 value *($'000)* | — | — | 30 | 46 | 177 | 199 | 548 | 928 |
| 2003–04 to 2004–05 movement *(%)* | — | — | 9.8 | –0.1 | 5.9 | 7.2 | 3.3 | 7.8 |
| 2004–05 to 2005–06 movement *(%)* | — | — | 11.3 | — | 6.4 | 5.0 | 7.7 | 4.7 |
| Median Value Added | | | | | | | | |
| 2004–05 value *($'000)* | 22 | 34 | 66 | 118 | 214 | 293 | 430 | 1 278 |
| 2003–04 to 2004–05 movement *(%)* | 29.9 | 12.6 | 18.3 | 2.6 | 16.1 | 4.6 | 5.3 | 6.2 |
| 2004–05 to 2005–06 movement *(%)* | 6.0 | 5.2 | 1.6 | –1.8 | 18.9 | 7.2 | –10.5 | 0.6 |
| Median of Value Added to Wages Ratio | | | | | | | | |
| 2004–05 ratio *(%)* | — | — | 1.9 | 2.2 | 1.6 | 1.6 | 1.3 | 1.6 |
| 2003–04 to 2004–05 movement *(%)* | — | — | –7.5 | 6.9 | 5.6 | –1.8 | –19.2 | 2.6 |
| 2004–05 to 2005–06 movement *(%)* | — | — | –4.5 | –0.1 | –2.9 | 4.3 | –7.3 | –1.6 |

— nil or rounded to zero (including null cells)

WORKFORCE COMPOSITION

*Topics collected in the 2004-05 BCS;*

- a breakdown of working proprietors and partners and employees
- a breakdown of full-time and part-time employees
- number of casual employees
- number of employees ceasing and commencing during the year
- number of employees by broad occupational groupings
- whether there were skill shortages
- factors causing skill shortages and steps taken to address these
- type of pay arrangements of employees (e.g. award, individual agreement)

*Topics in the 2005-06 BCS;*

- number of persons working in the business
- how many of these were casual
- how many were full-time
- number ceasing and commencing during the year
- type of pay arrangements of employees (e.g. award, individual agreement)

WORKFORCE COMPOSITION *continued*

The size and composition of a business' workforce is considered core demographic information. Data pertaining to the workforce composition can also provide an indication of the relative flexibility of the business, which may facilitate assessment of the affect of government workplace policy. Data relating to changes in workforce composition may also impact on business productivity.

Issues with regard to work force composition topics include:

- Ideally, to better enable analysis of labour productivity, data on the total hours worked by employees would be collected for each business. Unfortunately, detailed questions of this nature place an unreasonable reporting burden on survey respondents and they have therefore been omitted.
- A number of factors can impact on workforce flexibility, including the proportion of permanent to casual staff, the size of the workforce and the employee pay and condition arrangements, hence the continuing inclusion of these topics.
- It is also thought that the rate of staff turnover may have some correlation with business productivity. This information is captured in the questions on staff commencements and cessations.
- The collection of topics relating to the gender composition and also to the skill levels of a business' workforce have been considered but have not been included in the BCS questionnaire at this stage due either to space constraints or the lack of a clear need for the data in terms of analysing business performance.
- Questions relating to the level of skills shortages experienced by businesses, the reasons for them and the methods for addressing them, were included in the 2004-05 survey. However it was felt that the existing questions did not adequately capture the range of issues pertaining to this topic and survey space constraints precluded the inclusion of additional questions at this time. Questions pertaining to the composition of workforce by occupation group have also been removed from the survey subsequent to 2004-05. It is possible that if there is demonstrated need for information on these topics that additional questions may be included as a one-off module of questions relating to workforce capability and structure, in a future panel of the survey.

BUSINESS OPERATIONS

*Topics collected in the 2004-05 BCS;*

- whether the business was involved in franchise arrangements
- range of business practices used
- extent to which various performance assessment tools were used
- whether significant changes were made in a range of areas
- factors significantly hampering business performance
- whether business exported
- whether business imported
- sources of business advice and frequency of that advice
- whether government assistance was received
- types of debt finance sought and from whom
- whether debt finance was available
- types of equity finance sought and from whom
- whether equity finance was available
- whether business changed banking institution

BUSINESS OPERATIONS *continued*

*Topics in the 2005-06 BCS;*

- whether the business was involved in franchise arrangements
- whether the business was involved in other collaborative arrangements
- whether business exported (separated by goods and services)
- whether business imported (separated by goods and services)
- extent to which various performance assessment tools were used
- whether a range of performance indicators changed significantly
- factors significantly hampering ability to innovate
- factors significantly hampering business performance
- whether government assistance was received
- whether debt or equity finance was sought
- whether debt or equity finance was obtained
- reasons for seeking finance

Data relating to business operations enable analysis of: how various business management arrangements; practices relating to planning or business monitoring; access to finance; or exporting or importing activity may impact on business performance. Conversely, they may also provide insights into the barriers to productivity and the factors hampering performance.

Issues with regard to business operations topics include:

- Questions relating to finance provide information as to degree of access to finance and the implications of this on business performance. In this context finance includes both borrowings and government funding. In the 2005-06 survey information relating to reasons for accessing finance were included to better understand the financial status of the business and also as a possible indicator of innovative activity.
- The question on business franchising arrangements was retained in 2005-06 but the topic was broadened to also collect information on other types of collaborative activities. The premise for this inclusion being that collaboration results in time and resource savings, thereby enabling businesses to be more productive and also, that it potentially provides businesses with access to a wider range of innovative practices through its collaborative partners.
- It is considered useful to identify businesses which export and to analyse their characteristics. The supposition being that exporting businesses operate in a more competitive environment and as such need to be more innovative and productive. The separate identification of goods exporters from service exporters, implemented in the 2005-06 survey, will better enable the matching of financial data relating to the business' exporting activity sourced from ACS.
- It would be useful to collect more information on capacity utilisation within businesses as this will be an important determinant of business productivity. However, consideration needs to be given as to how to best collect this information from businesses.

BUSINESS OPERATIONS *continued*

The following table gives an example of the data available in the BLD regarding business operations:

TABLE 2 - COMPARISON OF EXPORTING AND NON-EXPORTING BUSINESSES, Experimental Estimates

| | NON-EMPLOYERS | | 1-4 EMPLOYEES | | 5-19 EMPLOYEES | | 20-199 EMPLOYEES | |
|---|---|---|---|---|---|---|---|---|
| | *Non-exporter* | *Exporter* | *Non-exporter* | *Exporter* | *Non-exporter* | *Exporter* | *Non-exporter* | *Exporter* |
| Number of units in sample *(no.)* | 512 | 38 | 591 | 69 | 554 | 95 | 332 | 104 |
| Number of businesses *('000)* | 749 | 30 | 308 | 21 | 152 | 21 | 36 | 5 |
| Median Sales | | | | | | | | |
| 2004–05 value *($'000)* | 57 | 151 | 219 | 174 | 718 | 926 | 2 754 | 5 922 |
| 2003–04 to 2004–05 movement *(%)* | 5.0 | 53.4 | 6.1 | 4.5 | 6.4 | 2.3 | 5.4 | 5.2 |
| 2004–05 to 2005–06 movement *(%)* | 0.3 | –29.9 | 2.5 | 16.1 | 3.6 | –1.3 | 5.3 | 0.9 |
| Median Wages | | | | | | | | |
| 2004–05 value *($'000)* | — | — | 42 | 24 | 197 | 158 | 761 | 1 536 |
| 2003–04 to 2004–05 movement *(%)* | — | — | — | 1.2 | 6.2 | 19.0 | 7.6 | 3.6 |
| 2004–05 to 2005–06 movement *(%)* | — | — | — | 8.8 | 5.0 | 8.4 | 7.2 | 4.2 |
| Median Value Added | | | | | | | | |
| 2004–05 value *($'000)* | 29 | 39 | 110 | 1 | 288 | 268 | 939 | 1 746 |
| 2003–04 to 2004–05 movement *(%)* | 17.5 | –17.3 | 12.6 | –15.0 | 7.7 | 10.4 | 5.3 | 5.3 |
| 2004–05 to 2005–06 movement *(%)* | 5.0 | 69.5 | –2.9 | 55.4 | 6.1 | 13.2 | –1.1 | –1.2 |
| Median of Value Added to Wages Ratio | | | | | | | | |
| 2004–05 ratio *(%)* | — | — | 2.0 | 0.5 | 1.6 | 1.6 | 1.4 | 1.5 |
| 2003–04 to 2004–05 movement *(%)* | — | — | 3.1 | –18.7 | — | –16.3 | –7.6 | 4.9 |
| 2004–05 to 2005–06 movement *(%)* | — | — | –1.8 | 35.4 | 1.2 | 10.0 | –7.3 | –2.2 |

— nil or rounded to zero (including null cells)

MARKETS AND COMPETITION

*Topics collected in the 2004-05 BCS;*

- number of known competitors
- how closely competitors were monitored
- how business compared to competitors on a range of indicators

*Topics in the 2005-06 BCS;*

- geographic description of business' markets
- main type of customer
- extent of competition
- nature of competition
- estimate of market share

Topics relating to markets and competition provide information as to the relative size and dispersion of businesses, and an understanding of the nature of the competitive environment in which they operate. Topics relating to competition enable the analysis of the underlying premise that greater competition requires greater productivity.

Issues with regard to markets and competition topics include:

- The 2004-05 questions on competition relied to some degree on the possibly flawed assumption that businesses would have detailed knowledge of the operations of their competitors. The focus of the 2005-06 BCS questions changed to better capture a more objective assessment of the business' external environment.

MARKETS AND COMPETITION *continued*

- Additionally, questions relating to markets were included in the 2005-06 survey. These related to the geographic distribution of the business' markets and also the characteristics of their main customers (e.g. government, large business, small business, general public). The purpose of their inclusion is to explore the hypothesis that businesses with larger business customers have different characteristics than their counterparts and exhibit a different degree of performance.

The following table gives an example of the data available in the BLD regarding markets and competition:

TABLE 3 - COMPARISON OF BUSINESSES BY DEGREE OF COMPETITION, Experimental Estimates

| | NON-EMPLOYERS | | 1-4 EMPLOYEES | | 5-19 EMPLOYEES | | 20-199 EMPLOYEES | |
|---|---|---|---|---|---|---|---|---|
| | *0 - 2 competitors* | *3 or more competitors* | *0 - 2 competitors* | *3 or more competitors* | *0 - 2 competitors* | *3 or more competitors* | *0 - 2 competitors* | *3 or more competitors* |
| Number of units in sample *(no.)* | 333 | 217 | 343 | 317 | 231 | 418 | 107 | 329 |
| Number of businesses *('000)* | 527 | 252 | 164 | 165 | 61 | 111 | 10 | 30 |
| Median Sales | | | | | | | | |
| 2004–05 value *($'000)* | 53 | 91 | 177 | 278 | 669 | 801 | 2 860 | 2 950 |
| 2003–04 to 2004–05 movement *(%)* | 6.3 | 4.1 | 2.9 | 8.4 | 2.8 | 8.6 | 8.8 | 2.6 |
| 2004–05 to 2005–06 movement *(%)* | –1.9 | 2.6 | 2.5 | 2.7 | 2.7 | 4.3 | 5.3 | 2.1 |
| Median Wages | | | | | | | | |
| 2004–05 value *($'000)* | — | — | 35 | 45 | 158 | 199 | 554 | 887 |
| 2003–04 to 2004–05 movement *(%)* | — | — | — | 0.3 | 9.5 | 5.3 | 15.2 | 6.2 |
| 2004–05 to 2005–06 movement *(%)* | — | — | — | 2.0 | 3.3 | 6.3 | 7.7 | 3.2 |
| Median Value Added | | | | | | | | |
| 2004–05 value *($'000)* | 29 | 30 | 96 | 104 | 229 | 332 | 773 | 1 134 |
| 2003–04 to 2004–05 movement *(%)* | 29.9 | 8.2 | 1.6 | 23.0 | 1.4 | 14.2 | 57.8 | –1.5 |
| 2004–05 to 2005–06 movement *(%)* | 2.2 | 10.8 | –4.5 | 5.8 | 13.2 | 3.7 | –0.2 | –10.5 |
| Median of Value Added to Wages Ratio | | | | | | | | |
| 2004–05 ratio *(%)* | — | — | 1.7 | 2.2 | 1.5 | 1.7 | 1.3 | 1.5 |
| 2003–04 to 2004–05 movement *(%)* | — | — | –6.7 | 10.0 | –10.6 | 4.3 | 6.1 | –6.2 |
| 2004–05 to 2005–06 movement *(%)* | — | — | –4.2 | 0.9 | 11.7 | –1.6 | –6.5 | –12.2 |

— nil or rounded to zero (including null cells)

INNOVATION AND RESEARCH AND DEVELOPMENT (R & D)

*Topics collected in the 2004-05 BCS;*

- whether new goods or services were introduced
- whether new operational processes were introduced
- whether new organisational/managerial processes were introduced
- whether R&D undertaken

*Topics in the 2005-06 BCS;*

- whether new goods or services were introduced (broken down by type)
- whether new operational processes were introduced (broken down by type)
- whether new organisational/managerial processes were introduced (broken down by type)
- whether new marketing methods were introduced (broken down by type)
- whether any innovative activities were abandoned
- whether any innovative activities were started but not yet complete

For the 2006-07 reference year and in alternating years thereafter, more detail on innovation will be collected as part of the integrated business characteristics strategy.

Innovation in business is believed by most analysts to be a key driver of firm-level productivity.

Given the relative importance of this topic to the understanding of productivity drivers, the number of questions included in 2005-06 have increased significantly. The focus of the additional questions is to provide a more detailed understanding of which aspects of the business operation innovation impacts on. It is possible that these innovative changes could then be linked with changes in performance.

Issues with regard to innovation and R&D topics include:

- Further to just identifying whether or not innovation occurred, information as to the implementation time frame was also collected. It was considered important to identify instances where innovations had been commenced but not completed, to better understand the timing or lag effect of the impact of these innovations.
- R&D activity is considered an important aspect of the broader topic of innovation. From 2005-06, comprehensive information as to the presence and scale of R&D work undertaken by businesses in the BLD will be sourced from the ABS R&D survey. The reason for this change was to reduce the burden on survey respondents.

INNOVATION AND RESEARCH AND DEVELOPMENT (R & D) *continued*

The following table gives an example of the data available in the BLD regarding Innovation and R&D:

TABLE 4 - COMPARISON OF BUSINESSES BY WHETHER INNOVATION OCCURRED, Experimental Estimates

| | NON-EMPLOYERS | | 1-4 EMPLOYEES | | 5-19 EMPLOYEES | | 20-199 EMPLOYEES | |
|---|---|---|---|---|---|---|---|---|
| | *Did not innovate* | *Innovated* | *Did not innovate* | *Innovated* | *Did not innovate* | *Innovated* | *Did not innovate* | *Innovated* |
| Number of units in sample *(no.)* | 456 | 94 | 525 | 135 | 468 | 181 | 244 | 192 |
| Number of businesses *('000)* | 692 | 87 | 256 | 73 | 126 | 47 | 22 | 19 |
| Median Sales | | | | | | | | |
| 2004–05 value *($'000)* | 57 | 75 | 237 | 214 | 718 | 798 | 3 189 | 2 818 |
| 2003–04 to 2004–05 movement *(%)* | 2.8 | 16.6 | 6.1 | 6.1 | 4.8 | 10.1 | 7.1 | 2.6 |
| 2004–05 to 2005–06 movement *(%)* | –1.0 | –1.2 | 2.6 | 6.5 | 1.5 | 16.4 | 1.0 | 5.3 |
| Median Wages | | | | | | | | |
| 2004–05 value *($'000)* | — | — | 41 | 42 | 197 | 167 | 901 | 701 |
| 2003–04 to 2004–05 movement *(%)* | — | — | — | — | 5.3 | 10.1 | 6.2 | 7.8 |
| 2004–05 to 2005–06 movement *(%)* | — | — | — | 4.1 | 4.9 | 6.1 | 0.4 | 8.1 |
| Median Value Added | | | | | | | | |
| 2004–05 value *($'000)* | 29 | 30 | 109 | 93 | 276 | 280 | 1 158 | 939 |
| 2003–04 to 2004–05 movement *(%)* | 14.3 | 52.6 | 5.8 | 14.5 | 2.8 | 22.1 | 7.3 | 0.2 |
| 2004–05 to 2005–06 movement *(%)* | 5.5 | –8.9 | –0.5 | –10.4 | 3.7 | 25.9 | 3.3 | –7.8 |
| Median of Value Added to Wages Ratio | | | | | | | | |
| 2004–05 ratio *(%)* | — | — | 2.1 | 1.8 | 1.6 | 1.7 | 1.5 | 1.3 |
| 2003–04 to 2004–05 movement *(%)* | — | — | 6.4 | –11.1 | –1.8 | 4.3 | 5.9 | –15.9 |
| 2004–05 to 2005–06 movement *(%)* | — | — | –3.4 | 8.7 | –2.9 | 12.2 | 0.8 | –10.7 |

— nil or rounded to zero (including null cells)

INFORMATION TECHNOLOGY USE

*Topics collected in the 2004-05 BCS*;

- did the business use the Internet
- did the business have a web site
- were orders placed over the Internet
- were orders received over the Internet

*Topics in the 2005-06 BCS;*

- who provides IT support for the business
- extent of IT use in various processes
- use of IT security measures
- whether security breaches were experienced and the impact of these
- did the business use the Internet
- type of Internet connection and reasons for this
- type of broadband connection (if applicable)
- did the business have a web presence and the nature of this presence
- were orders placed over the Internet
- an estimate of the income from these orders
- any business benefits from receiving these orders
- type of systems used in receiving these orders
- reasons for not receiving orders over the Internet (if applicable)

INFORMATION TECHNOLOGY USE *continued*

- activities the Internet was used for
- extent of electronic lodgement with government organisations

As noted above, the BCS is used to collect business characteristic information for the BLD but also collects in alternate years information previously collected in the Business Use of Information Technology Survey (BUIT) and also the Business Innovation Survey. In the 2005-06 BCS, an additional set of Information Technology questions were included to provide information required from the BUIT survey. Therefore some of the questions included have relevance to the impact of information technology on business performance. However, other questions have are relevant to more specific policy development and monitoring of IT issues.

Much research to date indicates that the access to, and use of, information technology is a key enabler of productivity. In addition, these questions are designed to not only provide information relating to productivity impacts but also provide cross-sectional estimates. The topics relating to this subject explore the nature and extent of IT access and usage. Businesses with greater access to IT may be considered to be more competitive and have broader access to markets.

Information pertaining to the relative use of information technologies by the business are considered important as an indicator of productivity potential.

The following table gives an example of the data available in the BLD regarding information technology use:

TABLE 5 - COMPARISON OF BUSINESSES BY WEB PRESENCE, Experimental Estimates

| | NON-EMPLOYERS | | 1-4 EMPLOYEES | | 5-19 EMPLOYEES | | 20-199 EMPLOYEES | |
|---|---|---|---|---|---|---|---|---|
| | *No web presence* | *Has web presence* | *No web presence* | *Has web presence* | *No web presence* | *Has web presence* | *No web presence* | *Has web presence* |
| Number of units in sample *(no.)* | 455 | 95 | 524 | 136 | 388 | 261 | 150 | 286 |
| Number of businesses *('000)* | 674 | 105 | 255 | 74 | 112 | 61 | 12 | 28 |
| Median Sales | | | | | | | | |
| 2004–05 value *($'000)* | 54 | 176 | 188 | 347 | 613 | 1 240 | 2 969 | 2 852 |
| 2003–04 to 2004–05 movement *(%)* | 4.4 | 8.1 | 6.1 | 3.0 | 8.2 | 4.0 | 7.1 | 5.2 |
| 2004–05 to 2005–06 movement *(%)* | 1.3 | –6.9 | 2.9 | 1.5 | 2.7 | 4.0 | 2.1 | 5.3 |
| Median Wages | | | | | | | | |
| 2004–05 value *($'000)* | — | — | 36 | 60 | 161 | 244 | 701 | 887 |
| 2003–04 to 2004–05 movement *(%)* | — | — | — | 6.8 | 9.5 | 2.6 | 11.1 | 6.2 |
| 2004–05 to 2005–06 movement *(%)* | — | — | 0.7 | –0.7 | 3.9 | 6.4 | 7.7 | 6.2 |
| Median Value Added | | | | | | | | |
| 2004–05 value *($'000)* | 27 | 60 | 98 | 114 | 240 | 378 | 1 132 | 982 |
| 2003–04 to 2004–05 movement *(%)* | 13.9 | 27.1 | 7.5 | 14.5 | 5.5 | 15.6 | 11.7 | 0.2 |
| 2004–05 to 2005–06 movement *(%)* | 5.2 | 2.5 | –0.5 | –5.6 | 9.6 | 4.9 | 17.2 | –10.5 |
| Median of Value Added to Wages Ratio | | | | | | | | |
| 2004–05 ratio *(no.)* | — | — | 2.3 | 1.5 | 1.5 | 1.6 | 1.6 | 1.3 |
| 2003–04 to 2004–05 movement *(%)* | — | — | 10.0 | –9.1 | –1.8 | 8.4 | 7.4 | –9.3 |
| 2004–05 to 2005–06 movement *(%)* | — | — | –1.8 | 8.7 | 4.3 | –2.9 | 9.5 | –12.2 |

— nil or rounded to zero (including null cells)

# CHAPTER 5 SCOPE AND COVERAGE OF THE BLD

## BACKGROUND

Details of the current scope and coverage of the BLD are discussed on Page 4 of Chapter 2. As noted there, not all Australian business entities are in scope of the BLD. In particular, the BLD currently excludes large and/or complex businesses and not-for-profit entities. The rationale for exclusion is discussed below.

## LARGE AND/OR COMPLEX BUSINESSES

There are a number of reasons which have led the ABS to exclude large businesses from the BLD:

- As noted in Chapter 1, the main output medium of the BLD will be confidentialised unit record files (CURFs). However, ensuring the confidentiality of large businesses in a CURF release will be extremely difficult. The extent to which data - and especially financial and employment data - for large businesses could be perturbed to avoid recognition of these businesses without significantly biasing analysis will be investigated. However, a successful outcome in the short term should not be anticipated.
- Large business groups are profiled by the ABS to create statistical units (known as type-of-activity units or TAUs) which enable the collection of data along industry lines and at a level that can be reported by the business groups. Often, TAUs equate to the divisional structure of these business groups. However, restructuring by businesses can lead to significant changes in the statistical units covered by the ABS from one period to the next. This restructuring of TAUs means that a longitudinal view at the TAU level might be very challenging. Possibly only 20% of TAUs might have continuity over a 5-year period.
- Financial data for businesses in the BLD is currently sourced from ATO data. However, it is not possible to match TAUs to ABNs in many cases and so the ATO data will not be widely useable in these instances. Where TAUs are included in ABS surveys collecting financial data, that data could be used in the BLD. However, a significant proportion of TAUs - mainly those which are small or medium sized, are not sampled in these surveys.
- Activities (e.g. innovations) are often undertaken at the group level and taken advantage, of on a cost-free basis, at the TAU level. For example, a group may develop new technology which is then adopted by each business unit with consequent cost savings or business process improvements. In the BLD, we might thus see the financial benefits of the innovations without seeing the costs or activities which have led to these benefits. This would therefore lead to misleading analysis of BLD data.

Given the challenges listed above, large businesses will not be included in BLD releases in the short to medium term.

Large businesses are, however, significant contributors to Australian economic activity. As such, the BLD would ideally include them. Consequently, the ABS will continue to investigate the extent to which the issues above can be overcome with a view to potentially including them in future.

NOT-FOR-PROFIT ENTITIES

There is considerable interest amongst some users in understanding the activities of not-for-profit (NPI) entities in the BLD context.

At this stage, however, it is not proposed to include NPIs in the BLD.

The main reasons for this are:

- The coverage on the ABS Business Register of NPIs is relatively poor compared to market sector businesses; and
- The financial data in the BLD are sourced from the ATO and many NPIs are not subject to the same taxation requirements as apply to market sector businesses.

The ABS will investigate the extent to which these barriers can be overcome. In at least the short-term, however, NPIs will continue to be excluded from the BLD.

There are other ABS sources from which NPI data will be available. The ABS will shortly be conducting a survey of NPIs with respect to the 2006-07 financial year. This will result in some survey-specific output and will also feed into the compilation of an updated NPI satellite account.

## INTRODUCTION

There are a number of ABS developments which are related to the BLD and which are relevant to potential users. These should be borne in mind when assessing user requirements from the BLD, as it is possible that requirements which cannot be met from the BLD may be able to be met from these other developments.

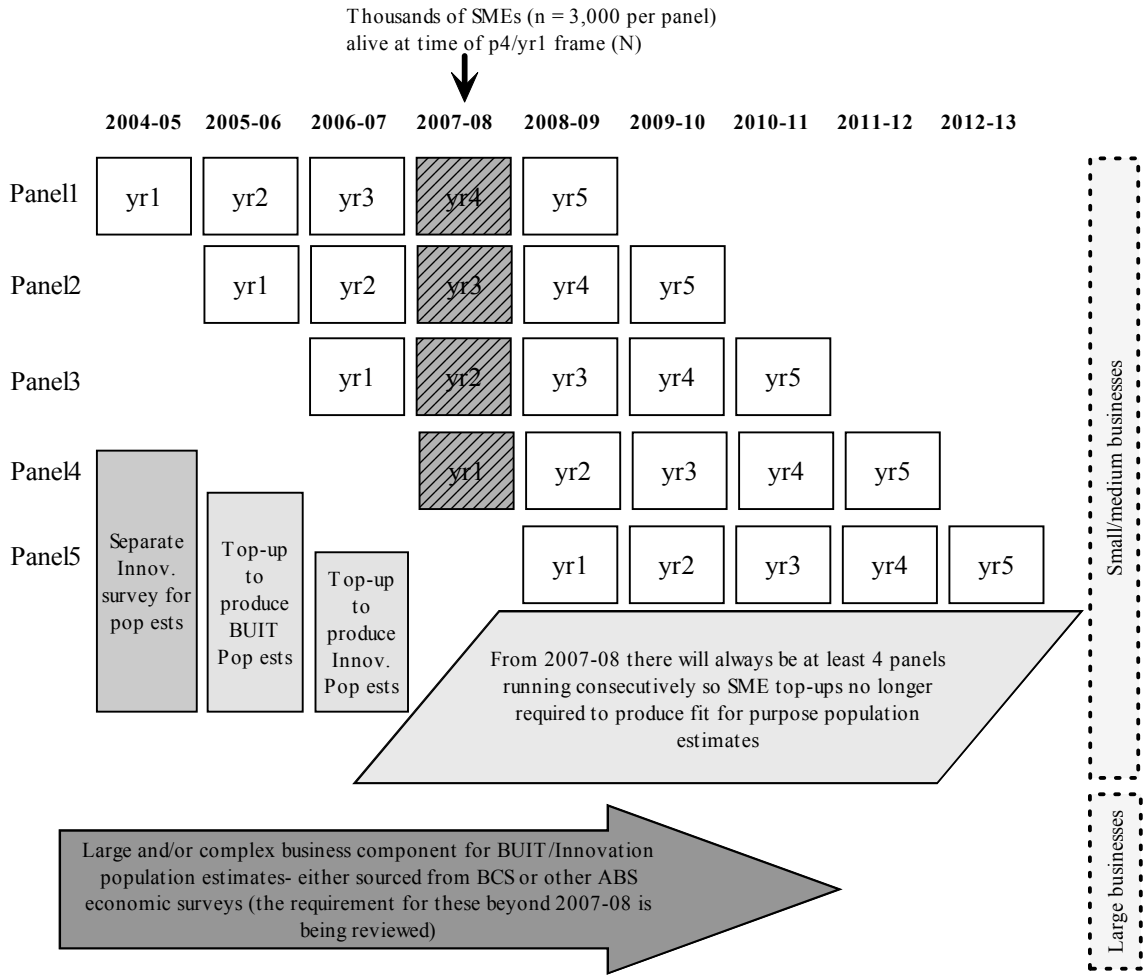
## THE INTEGRATED BUSINESS CHARACTERISTICS STRATEGY

The integrated business characteristics strategy (IBCS) integrates the data collection and processing of data for:

- the BLD;
- the Innovation Survey (IS); and
- the Business Use of Information Technology Survey (BUIT).

As demonstrated in the diagram below, a phased approach will result in high levels of sample overlap between the samples required for the longitudinal BLD panels and for cross sectional estimates required for the IS and BUIT surveys.

**Production of longitudinal and cross-sectional estimates from the Business Characteristics Survey**



THE INTEGRATED BUSINESS CHARACTERISTICS STRATEGY *continued*

The purpose of the IBCS is twofold:

- the overall burden placed on businesses providing data to the ABS will be reduced via the re-use of sample for the various sources; and
- the IBCS will allow better integration between the macro-level IS and BUIT estimates and the microdata in the BLD. Thus, users will be able to drill down from the macro to the micro level to better understand factors influencing changes in the macro-level estimates.

As indicated in the diagram above, the IBCS is being phased in over the next two years as the BLD panels build up.

In addition to the cross sectional estimates which have been produced from the IS (see ABS cat. no. 8158.0) and BUIT (see ABS cat. no. 8129.0) surveys in recent years it will, in the near future, be possible to produce cross-sectional estimates of all the categorical variables collected as part of the BLD (see Chapter 4 for details).

THE BUSINESS CENSUS DATASET

The ABS is currently developing a business census dataset. This has been referred to previously as the "large-sparse BLD".

The business census dataset attempts to populate the frame of all businesses in Australia with any data available which presents a complete enumeration of relevant businesses. This will include:

- core financial data, sourced either from taxation records or from ABS surveys;
- merchandise trade data;
- ABS surveys which are based on a complete enumeration of relevant businesses, such as the R&D Survey and the Venture Capital Survey; and
- any other available administrative datasets where all affected businesses are covered and where the ABN is available as a linking key. The ABS is currently working with other organisations to bring in such data.

The ABS is planning to conduct two pilot projects using this business census dataset in coming months:

- an analysis of the length of time it takes a new business to become profitable, and how many don't make it that far; and
- a portrait of an Australian Exporter.

These pilot projects will provide valuable guidance as to tips and traps in conducting such analyses and use of the dataset. This guidance, together with the availability of other data, will enable a range of analyses to be undertaken in future.

# CHAPTER 7 TECHNICAL NOTE

## METHODOLOGY FOR CALCULATION OF ESTIMATES

The analyses in this publication are provided as illustrative examples only of potential BLD analysis. They are based on a subset of the businesses included in the BLD. Excluded from analyses were businesses which reported $0 for sales. Also excluded from these estimates were businesses which were not actively trading in both 2003-04 and 2004-05.

The median, rather than the mean, has been used as a measure of central tendency in these analyses. Given the relatively small sample size available, sample means were deemed not to be appropriate for analysis. The mean is sensitive to the influence of a few extreme values whereas the median is resistant to these. Within this publication, the median for each variable represents the reported value of the unit at the midpoint of the ranked weighted sample.

The publication presents a number of data items, representative of the range of data items included in the BLD. The performance of businesses were compared in respect of these data items to investigate if businesses with certain characteristics performed differently to businesses without these characteristics.

The following estimates were calculated for each of the published data items;

- number of businesses
- number in sample
- median sales for 2004-05
- median wages and salaries for 2004-05
- median value added for 2004-05
- median ratio of value added to wages for 2004-05
- median percentage change in sales from 2003-04 to 2004-05
- median percentage change in sales from 2004-05 to 2005-06
- median percentage change in wages from 2003-04 to 2004-05
- median percentage change in wages from 2004-05 to 2005-06
- median percentage change in value added from 2003-04 to 2004-05
- median percentage change in value added from 2004-05 to 2005-06
- median percentage change in ratio of value added to wages from 2003-04 to 2004-05
- median percentage change in ratio of value added to wages from 2004-05 to 2005-06

Employment size data for each business is sourced from the BCS. For the purpose of this publication, non-employing businesses are those which reported $0 wages and salaries in 2004-05. These will generally comprise non-employing sole proprietorships and partnerships. Micro employing businesses are those businesses which have employment of less than 5 persons. Other small employing businesses are those which have employment of 5 to 19 persons. Medium employing businesses are those which have employment of 20 to 199 persons.

Sales and wages data are sourced from the businesses' reported Business Activity Statement (BAS). As the BAS data reported by businesses may not be complete, percentage change calculations for some businesses may be misleading. Therefore, published median percentage change in sales is based only on businesses which reported non-zero sales values for both 2003-04 and 2004-05. Similarly, median percentage change in the levels of wages were also only based on businesses which reported non-zero values for both periods.

METHODOLOGY FOR CALCULATION OF ESTIMATES *continued*

For the purpose of this publication, value added was approximated as being the sum of total sales less non-capital purchases. As value added can legitimately be either positive or negative, this factor was taken into account in deriving the formula to calculate percentage change in this measure.

The ratio of value added to wages was only calculated for businesses which reported wages.

DATA QUALITY

There are several factors affecting the quality of the published data. The data presented in this publication, obtained from a sample survey and administrative data, have been linked for each unit in the sample.

Estimates for all surveys are subject to two sources of error; sampling error and non-sampling error. Sampling error refers to the fact that since the estimates are based on information obtained from a sample of businesses, they (and the movements derived from them) may differ from the figures that would have been produced if all businesses had been included in the survey. Inaccuracies may also be the result of non-sampling error such as imperfections in reporting by respondents and errors made in processing of data. Every effort is made to reduce the non-sampling error to a minimum by careful design of questionnaires and efficient operating procedures.

Financial data have been obtained from the ATO as administrative by-product data and reference back to the originating businesses is not possible. Differences in accounting policy and practices across businesses and industries can lead to inconsistencies in the data.

The publication tables contain estimates of the number of businesses in the population against each category. These estimates do not align with other ABS sources of business counts because some businesses in the sample were found to be non-operating during survey processing. As is also the case for the median values in these tables, the estimates of numbers of businesses are impacted by sampling and non-sampling error.

INTERPRETATION OF RESULTS

Users of the data produced in the publication should be aware of the limitations of drawing any conclusions from the medians published in the tables. When comparing the median values or percentage changes for differing measures (e.g. sales, wages) of any population, it should be considered that the business which contributes the median value for one measure is unlikely to contribute the median value for the other measures. The implication of this is that whilst the results presented are generally indicative of the whole population they do not reflect the behaviour of any one "typical" business.

This is particularly evident in respect of the median ratio of value added to wages and its associated median percentage change. The published ratio is not derived from the published median sales and median value added but is the median ratio of all businesses. This ratio is in some cases different from that which would be derived if the published medians were used.

Due to this fact and others relating to sample size and data quality, it is again stressed that the data in this publication are for illustrative purposes only and should be used with caution.

# GLOSSARY

| | |
|---|---|
| **Australian Business Number (ABN)** | The ABN is a unique business identifier introduced to assist businesses with dealings with the Australian government. The ABN unit is the business unit which has registered for an ABN, and thus appears on the Australian Business Register. |
| **Business** | For the purposes of this publication a business constitutes the total business activity conducted under the selected ABN. |
| **Business Location** | Any location or premises from which business is conducted, producing goods or providing a service. Examples include shops, factories, offices, warehouses (where persons working for the business work on a regular basis) , building sites, farms, permanent markets, restaurants and homes, in the case of home based businesses. |
| **Casual Employee** | An employee not entitled to paid sick leave or paid holiday leave. |
| **Classification by Industry** | Businesses have been classified to industry sectors according to their description of activities. The industry is coded to the Australian and New Zealand Standard Industrial Classification 1993 (ANZSIC) which is a classification system for grouping businesses in Australia and New Zealand into industries to enable comparability of data. |
| **Competitor** | A rival business supplying a good or service that offers buyers an identical or similar product. |
| **Debt Finance** | Finance that the business must repay and includes: loans, overdrafts, credit card facilities, capital/finance lease or hire purchase agreements |
| **Equity Finance** | Finance for a company in the form of ordinary shares paid for by shareholders. |
| **Exporter** | An Australian business which directly sells goods and/or services overseas. |
| **Foreign Ownership (degree of)** | The extent to which the ordinary shares or voting stock of the business are held by non-residents of Australia. |
| **Franchise Agreement** | A franchise is an agreement between a franchisee and a franchisor. The franchisee obtains the right to use a name, trademark, product, service or business system in return for the payment of a fee and/or royalty to the franchisor. Usually, the franchisee gets a package of the above rights including a business system and management advice. |
| **Government Financial Assistance** | This includes grants, subsidies and tax concessions from all levels of government. The assistance may relate but is not exclusive to: employment (e.g. apprenticeships, traineeships); starting and/or expanding the business; research and development; innovation; or exporting. |
| **Home Based Business** | A home based business is a business which has no other premises owned or rented by the business other than the home(s) of the working proprietors, working partners or working directors. Home based may include an office located in a separate structure from the home residence, but still be on the same grounds. |
| **Importer** | An Australian business which directly purchases goods and/or services from another country. |
| **Internet** | A world-wide public computer network. Organisations and individuals can connect their computers to this network and exchange information across a country and/or across the world. The Internet provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files. |
| **Median** | The middle value in a ranked data distribution. In this publications medians represent the reported value of the business with the middle value in the ranked weighted sample. |
| **Medium Employing Business** | In this publication - a business which reports employment of 20 or more persons but less than 200, and wages and salaries greater than $0. |
| **Micro Employing Business** | For this publication - a business which reports employment of less than 5 persons and wages and salaries greater than $0. |
| **Order** | A commitment to purchase goods and services. |

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|---|---|
| **Other Small Employing Business** | For this publication - a business which reports employment of 5 or more persons but less than 20, and wages and salaries greater than $0. |
| **Permanent Employee** | An employee entitled to paid sick leave and paid holiday leave. |
| **Research and Development** | The Research and Development (R&D) performed by businesses is generally investigative work which is of actual or potential use in the development of new or enhanced material, products, devices, processes or services.<br><br>R&D must contain an appreciable element of novelty and the resolution of scientific and/or technological uncertainty (i.e. and element of risk should be present). R&D directed towards duplicating work already developed by others should only be included in this survey if the knowledge or technology required for development is not available to the business. |
| **Sales** | The total revenue from the supply of goods and/or services. |
| **Small Business** | A business with employment of less than 20 persons. |
| **Turnover** | The total revenue generated by a business from the provision of goods and services for a given accounting period. |
| **Value Added** | A measure of economic activity, specifically, the contribution of a business to the gross domestic product. For this publication value added is calculated as being the sum of sales less the value of non-capital purchases. (See Explanatory Notes paragraph 29). |
| **Wages** | The total salary, wages, allowances and leave loading paid to employees, and fees paid to directors, by a business. |
| **Web presence** | Web presence includes a web site, home page or presence on another entity's web site. A web site or home page is an electronic document that is accessed via a unique address on the World Wide Web. The document provides information on a textural, graphical or multimedia format. Web presence excludes online listings. |

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