



2001 CENSUS OF POPULATION AND HOUSING

Census Paper

**2001 CENSUS: LABOUR FORCE STATUS
(Census Paper No. 03/05)**

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(Census Paper No. 03/05)

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Population Census Evaluation
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SUMMARY OF FINDINGS

This 2001 Census Paper evaluates the data quality of questions associated with Labour Force Status. Overall, the quality of labour force data has improved when compared with that of 1996:

- Results indicate that question design and associated coding were the major contributors to differences between the three snapshots of Labour Force Status taken from the 1991, 1996 and 2001 Censuses.
- The difficulty experienced by respondents in understanding employment-related concepts was exacerbated by the use of ‘limited liability’ wording in 1996.
- This and resultant coding might have had a flow-on effect as 102,592 records in 2001 were imputed (via the Derivation Table) to a Labour Force Status based on ten year old (1991 Census) distributions. The logical use of more recent distributions - the skewed distributions from the previous (1996) Census - was avoided. For 2006, 2001 Census distributions should form the basis for imputation, not 1996.
- While the sub-group involved in imputation in 2001 was only 0.72% of all those categorised to Labour Force Status, it highlights the impact that form and coding changes resulting from the desire to more closely reconcile Census data with that of the Labour Force Survey, can have.
- Non-response decreased for four of the six labour force questions (see *Table 11*). The derived output variable Labour Force Status (LFSP) increased in Non-response, up from 1.3% in 1996 to 2% in 2001.
- The labour force question which attracted the most multiple-mark responses was ‘Did the person actively look for work at any time in the last four weeks?’ Results from the DQI Sample indicate that 0.9% of respondents marked both ‘Yes, looked for full-time work’ and ‘Yes, looked for part-time work’.
- All elements in the LFS Derivation Table and the Edits should be thoroughly reviewed, as at least one edit unnecessarily affected unpublished data. Edits and coding associated with Looking for Work and Availability to Start Work, specifically, require re-examination.
- Any future form and coding changes to incorporate ‘limited liability’ aspects, need to be isolated from the balance of questions that contribute to Labour Force Status.

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1. INTRODUCTION

1.1 About Census Papers

The ABS has a stated, corporate objective to provide the means for informed and increased use of statistics. This Paper is one of a series produced after each census by the Australian Bureau of Statistics' Population Census Evaluation team, whose role is to review the data quality of the 5-yearly Census of Population and Housing. The aim of Census Papers is to inform users of issues that have been identified as impacting on the quality of the census data. Analyses such as these are a critical factor in the continuous quality improvement of the Census Program. The ABS welcomes your feedback and suggestions.

1.2 This Paper

Labour Force Status has been derived from census data since the 1981 Census. This Census Paper examines the impact of changes to question design and coding on this derivation of Labour Force Status in the 2001, 1996 and 1991 Censuses, as well as data quality generally.

Note that all statistical tables in this Paper exclude Overseas visitors and, unless otherwise stated, System Created Records.

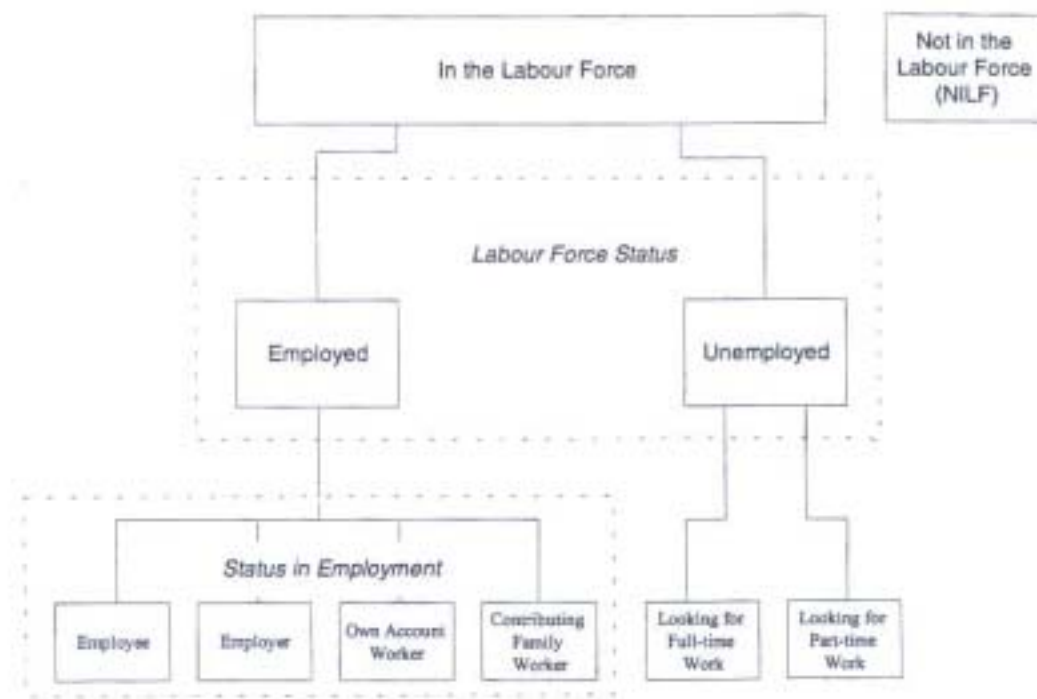
1.3 Definition

The Census variable Labour Force Status (abbreviated to LFSP), which directly matches the classification, is derived from the responses to six census questions - see *1.4 Derivation Source*.

Labour Force Status is the measure which classifies persons as either in the labour force or not in the labour force (NILF). Those in the labour force are then classed as employed or unemployed. The Labour Force Status classification further sub-classifies employed people into Status in Employment categories: employee, employer, own account worker, or contributing family worker. Unemployed persons are classed as looking for full-time or part-time work. Information on hours worked by employed persons is also used as a cross-classifier to determine their full-time/part-time status.

The classification diagram:

FIGURE 1: LABOUR FORCE CLASSIFICATION



1.4 Derivation Source

In 2001, responses to six census questions were used to derive Labour Force Status (LFSP). The questions were:

- Q32: Full-Time/Part-Time Job (FPJP)
- Q33: Job Last Week (JBLP)
- Q40: Hours Worked (HRSP)
- Q41: Transport To Work (TPTP)
- Q42: Looking For Work (LFWP)
- Q43: Availability to Start Work (ATSP)

Responses to the above were transformed into a Labour Force Status via a series of derivation tables that applied IF and THEN statements in a set of 59 rules covering 201 defined combinations (see 4.2.2 *The Derivation of Labour Force Status*).

1.5 Other Information Available

A comparison of 2001 Census with August 2001 Labour Force Survey data, can be found in the *Fact Sheet: Labour Force Status - Comparing Census and Survey Data*, (attached as Appendix 3). An historical and expansive analysis of 1996 Labour Force data (including reconciliation with data from the August 1996 Labour Force Survey), is also available from the ABS website (under Census Papers), titled *1996 Census: Labour Force Status 99/2*.

2. QUESTION DESIGN

2.1 Differences Between the 1991, 1996 and 2001 Forms and Documentation

The main questions used to assess Labour Force Status are those related to any full-time or part-time job held last week (FPJP: see *Figures 2, 3 and 4*), the nature of the job (JBLP: *Figures 5, 6 and 7*), the hours worked (HRSP), and, if they didn't have a job, whether they actively looked for work in the past four weeks (LFWP).

Each of these questions was asked in the three Censuses, though a further one on availability to start work (ATSP), was not asked in 1991. The four other Labour Force-related questions for 2001 are shown in *Figure 8*. *Appendix 1* contains a list of Census Form question numbers and the Labour Force Status variable to which they relate.

Generally, the content of the questions was similar, if not identical.

TABLE 1: SUMMARY OF QUESTION CHANGES TO LABOUR FORCE-RELATED QUESTIONS 1991 - 2001

<i>Question</i>	<i>Changes</i>
Full-Time/Part-Time Job	No change, other than 1991 sequencing of respondent around the following 'Looking for Work' question, if they had a paid job or one in the family business.
Job Last Week	Limited Liability aspect incorporated in question in 1996, but not in 1991 or 2001.
Hours Worked	In 1991, the question requested the number of hours worked in the <i>main job</i> in the week before the census. In 1996 and 2001, this was changed to <i>all jobs</i> .
Mode of Travel to Work	1991 and 1996 were identical, but 2001 had one new option 'Truck', and split the 1996 option 'Ferry or tram' into two.
Looking for Work	Despite minor example differences, question was identical in each year.
Availability to Start Work	No version of this question in 1991. 1996 and 2001 versions were identical.

2.2 The Introduction of 'Limited Liability'

The key change was the use in 1996 of the term 'limited liability' within the 'Job Last Week' question options (see *Figure 6: 1996 Census: JBLP*). The degree of negative impact that this had can be seen in the proportion of Employers and Employees (see *Table 16: Labour Force Status of Persons Aged 15 and Over...*) and the Non-response Rate to 'Job Last Week' (see *Table 18*).

Of the three Censuses, it was only 1996 that highlighted the limited liability/incorporated company issue within the question's options on the Census Form.

The Limited Liability aspect was introduced to identify business people in limited liability companies, so that Census Status in Employment output could be more closely aligned with that of the Labour Force Survey (LFS).

In doing this, it allowed coding of responses to reflect that aspect. Those conducting their own business in a limited liability company (whether they were with or without employees), were coded to 'Employees'. For detail on the results of this coding, see section *6.1 Labour Force Status: 1991, 1996 and 2001 Censuses*.

2.2.1 *September 1998 Census Test*

The September 1998 Census Test set out to ‘evaluate the changed position of categories in the Job Last Week question’ and to ‘trial new wording for ‘not a limited liability company’’.

Form 4 in that Test was close to being the control form - retaining wording as in the 1996 Census, though swapping the order of the limited liability options so that the negative one was presented first.

Form 5 substituted the words ‘Conducting own business which is a sole trader, partnership or trust’, for the first option in Form 4 of ‘Conducting own business which is not a limited liability company’.

While the ‘sole trader...’ version attracted more counts in that same geographic area than the equivalent ‘limited liability’ version did in the 1996 Census, it was even less well received than its alternative at Focus Group Testing. Neither was assessed as being acceptable.

The revised version still failed to substantially close the gap between Census data and LFS results.

2.2.2 *August 1999 Major Test*

Further Focus Group Testing in April 1999 revealed that ‘sole trader...’ wording was generally understood, though limited liability was not. ‘Pty Ltd’ was deemed more acceptable.

Consequently, the ‘sole trader...’ aspect was included in the Major Test of August 1999 (as Form 7), while Form 6 matched the 1991 Census version that excluded limited liability wording. However, both forms were accompanied by an instruction under the question that if the person was ‘working in their own limited liability company (Pty Ltd) mark the first box’ - the wage and salary earner one.

It was this instruction that was assessed as being the key contributor towards narrowing the discrepancy between Census Test and LFS data.

2.2.3 *Direction for 2001 Census*

As a consequence of the testing, the 2001 Census option structure generally reverted to its 1991 format. The 1996 format that allowed for ‘own business’ and limited liability to be assessed, was removed.

The note underneath the question about ‘limited liability (or Pty Ltd)’ was retained from testing, while the Census Guide (see *Figure 11: Q33, Household Guide, 2001 Census*) instructed respondents to opt for the ‘Wage and Salary Earner’ option if they worked for their own limited liability company (ensuring they were coded to ‘Employee’).

This difference in approach (between the 1991 Census version, the modification that resulted in the 1996 Census variant, and mere instructions below the question and in the Guide, as in 2001), resulted in different outcomes (see *Table 16: Labour Force Status of Persons Aged 15 and Over...*).

Additionally, the Census Dictionaries for 1996 and 2001 included the term ‘incorporated enterprise’ in their identical definition of the term ‘Employee’, while there was no mention of it in 1991 (see *Figures 9 and 10*).

Full-time Part-time Job (1991, 1996, 2001):

FIGURE 2: 1991 CENSUS: FULL-TIME/PART-TIME JOB (QUESTION 30, HOUSEHOLD FORM)

30 <i>Last week, did the person have a full-time or part-time job of any kind?</i>	<input type="checkbox"/> Yes, worked for payment or profit. Now go to 32 <input type="checkbox"/> Yes, but absent on holidays, on sick leave, on strike or temporarily stood down. Now go to 32 <input type="checkbox"/> Yes, unpaid work in a family business. Now go to 32 <input type="checkbox"/> Yes, other unpaid work <input type="checkbox"/> No, did not have job
---	--

FIGURE 3: 1996 CENSUS: FULL-TIME/PART-TIME JOB (QUESTION 30, HOUSEHOLD FORM)

30 <i>Last week, did the person have a full-time or part-time job of any kind?</i> <ul style="list-style-type: none">• Mark one box only.• A job means any type of work including casual or temporary work or part-time work, if it was for one hour or more.	<input type="checkbox"/> Yes, worked for payment or profit <input type="checkbox"/> Yes, but absent on holidays, on paid leave, on strike or temporarily stood down <input type="checkbox"/> Yes, unpaid work in a family business <input type="checkbox"/> Yes, other unpaid work <input type="checkbox"/> No, did not have a job
---	--

▶ Go to 39
▶ Go to 39

FIGURE 4: 2001 CENSUS: FULL-TIME/PART-TIME JOB (QUESTION 32, HOUSEHOLD FORM)

32 <i>Last week, did the person have a full-time or part-time job of any kind?</i> <ul style="list-style-type: none">• Mark one box only.• A 'job' means any type of work including casual or temporary work or part-time work, if it was for one hour or more.• See page 11 of the Census Guide for more information.	<input type="checkbox"/> Yes, worked for payment or profit <input type="checkbox"/> Yes, but absent on holidays, on paid leave, on strike or temporarily stood down <input type="checkbox"/> Yes, unpaid work in a family business <input type="checkbox"/> Yes, other unpaid work <input type="checkbox"/> No, did not have a job
---	--

▶ Go to 42
▶ Go to 42

Job Last Week (1991, 1996, 2001):

FIGURE 5: 1991 CENSUS: JOB LAST WEEK (QUESTION 32, HOUSEHOLD FORM)

<p>32 In the main job held <i>last week</i>, was the person:</p> <ul style="list-style-type: none">• Mark one box only.• If the person had more than one job last week then 'main job' refers to the job in which the person usually works the most hours.	<ul style="list-style-type: none"><input type="checkbox"/> A wage or salary earner?<input type="checkbox"/> Conducting own business but not employing others?<input type="checkbox"/> Conducting own business and employing others?<input type="checkbox"/> A helper not receiving wages or salary?
--	--

FIGURE 6: 1996 CENSUS: JOB LAST WEEK (QUESTION 31, HOUSEHOLD FORM)

<p>31 In the main job held <i>last week</i>, was the person:</p> <ul style="list-style-type: none">• Mark one box only.• If the person had more than one job last week then 'main job' refers to the job in which the person usually works the most hours.	<ul style="list-style-type: none"><input type="checkbox"/> A wage or salary earner?<input type="checkbox"/> A helper not receiving wages?Conducting own business in a limited liability company<ul style="list-style-type: none"><input type="checkbox"/> With employees?<input type="checkbox"/> Without employees?Conducting own business which is not a limited liability company<ul style="list-style-type: none"><input type="checkbox"/> With employees?<input type="checkbox"/> Without employees?
--	--

FIGURE 7: 2001 CENSUS: JOB LAST WEEK (QUESTION 33, HOUSEHOLD FORM)

<p>33 In the main job held <i>last week</i> was the person:</p> <ul style="list-style-type: none">• Mark one box only.• If the person had more than one job last week then 'main job' refers to the job in which the person usually works the most hours.• For a person working in their own limited liability (or Pty Ltd) company mark the first box.• See page 11 of the Census Guide for more information.	<ul style="list-style-type: none"><input type="checkbox"/> A wage or salary earner?<input type="checkbox"/> Conducting own business with employees?<input type="checkbox"/> Conducting own business without employees?<input type="checkbox"/> A helper not receiving wages?
--	---

FIGURE 8: 2001 CENSUS: OTHER LABOUR FORCE-RELATED QUESTIONS (40-43, HOUSEHOLD FORM)

<p>40 Last week, how many hours did the person work in all jobs? • Subtract any time off, add any overtime or extra time worked.</p>	<p><input type="checkbox"/> None</p> <p><input type="text"/> <input type="text"/> Hours worked</p>
<p>41 How did the person get to work on Tuesday, 7 August 2001? • If the person used more than one method of travel to work, mark all methods used. • See page 13 of the Census Guide for more information.</p>	<p><input type="checkbox"/> Train</p> <p><input type="checkbox"/> Bus</p> <p><input type="checkbox"/> Ferry</p> <p><input type="checkbox"/> Tram (including Light Rail)</p> <p><input type="checkbox"/> Taxi</p> <p><input type="checkbox"/> Car – as driver</p> <p><input type="checkbox"/> Car – as passenger</p> <p><input type="checkbox"/> Truck</p> <p><input type="checkbox"/> Motorbike or motor scooter</p> <p><input type="checkbox"/> Bicycle</p> <p><input type="checkbox"/> Walked only</p> <p><input type="checkbox"/> Worked at home</p> <p><input type="checkbox"/> Other</p> <p><input type="checkbox"/> Did not go to work</p>
<p>42 Did the person actively look for work at any time in the <i>last four weeks</i>? • Examples of actively looking for work include: being registered with Centrelink as a job seeker; checking or registering with any other employment agency; writing, telephoning or applying in person to an employer for work; or advertising for work.</p>	<p><input type="checkbox"/> No, did not look for work ▶ Go to 44</p> <p><input type="checkbox"/> Yes, looked for full-time work</p> <p><input type="checkbox"/> Yes, looked for part-time work</p>
<p>43 If the person had found a job, could the person have started work <i>last week</i>?</p>	<p><input type="checkbox"/> Yes, could have started work last week</p> <p><input type="checkbox"/> No, already had a job to go to</p> <p><input type="checkbox"/> No, temporarily ill or injured</p> <p><input type="checkbox"/> No, other reason</p>

FIGURE 9: DEFINITION OF LABOUR FORCE (AND EMPLOYED PEOPLE), CENSUS DICTIONARY, 1991 CENSUS

LABOUR FORCE	<p>For 1991 Census purposes, the labour force includes people aged 15 years and over who:</p> <ul style="list-style-type: none"> • work for payment or profit, or as an unpaid helper in a family business, during the week prior to census night; • have a job from which they were on leave or otherwise temporarily absent; • are on strike or stood down temporarily; and • do not have a job but is actively looking for work. <p>The following people are classified as being in the labour force:</p> <ul style="list-style-type: none"> • employed people (i.e. people in the first three groups above); • unemployed (people in the last group above). <p>The category <i>not in the labour force</i> includes people who are retired, pensioners, and people solely engaged in home duties. See Labour force status.</p>
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FIGURE 10: DEFINITION OF EMPLOYEE, CENSUS DICTIONARY, 1996 & 2001 CENSUSES

Employee	<p>An employee is a person who works for a public or private employer and receives remuneration in wages or salary; or is paid a retainer fee by his/her employer and works on a commission basis; or works for an employer for tips, piece-rates or payment in kind; or, is a person who operated his/her own incorporated enterprise with or without hiring employees.</p>
-----------------	--

FIGURE 11: Q33, HOUSEHOLD GUIDE, 2001 CENSUS

If you work for your own limited liability company or Pty Ltd company (the company is incorporated), you are considered a wage or salary earner.

3. COLLECTION ISSUES

System Created Records are created during Census processing for people for whom a Census Form has not been received but where the Collector believes the dwelling was occupied on Census Night. System Created Records have values imputed for age, sex, marital status and usual residence only; values for other variables are set to Not Stated or Not Applicable, depending on the imputed value for age.

During the collection phase of the 2001 Census, Collectors reported increased difficulty contacting some householders. Access to secure small and large apartment buildings, gated communities, and growing community concerns about security, make it increasingly difficult to judge whether the residents of a dwelling are absent or not.

An increase in Non-response (Not Stated) rates is apparent for many census variables in the 2001 Census. Most of the change can be attributed to the increase in the proportion of System Created Records. A Fact Sheet - *Effect of Census Processes on Non-response Rates and Person Counts* - has been produced and stored on the ABS website. It discusses the factors that may have contributed to the increase in System Created Records for 2001, and the percentage of records affected by state. Please refer to this for further details.

3.1 Background

The questions from which 2001 Census LFSP is derived were applicable only to those aged 15 years and over on Tuesday 7 August, 2001. Once one of the first three options in the 'gateway' question (Full-time/Part-time Job - FPJP) was selected, respondents were expected to complete the other questions that contributed to the derivation.

Those who answered that they did other, unpaid work, or did not have a job, were sequenced ahead by ten questions to Looking for Work, omitting the intervening ones.

Contrary to what might be expected, it was possible to not respond to FPJP - and therefore bypass the gateway question - but still achieve a Labour Force Status (see 4.2.2: *The Derivation of Labour Force Status*).

Table 2 shows the distribution of forms completed by those aged 15 and over, and whether they responded to the 'gateway' question:

TABLE 2: FORM USE FOR LABOUR FORCE STATUS, VIA RESPONSE TO FULL-TIME/PART-TIME JOB, 2001 CENSUS (a)

<i>Form Type</i>	<i>Responded</i>	<i>% of Total Response</i>	<i>Non-response</i>	<i>% of Total Applicable</i>	<i>Total applicable</i>	<i>% of Total Persons</i>
Personal Form	460,713	3.3	57,079	11.0	517,792	3.6
Household Form	13,533,361	96.4	386,116	2.8	13,919,477	96.1
Special Indigenous Form	45,764	0.3	2,733	5.6	48,497	0.3
Total Persons	14,039,838	100	445,928	3.1	14,485,766	

(a) Excludes Overseas visitors and System Created Records.

These questions were self-enumerated by 99.7% of persons (96.1% on Household Forms and 3.6% on Personal Forms), in the appropriate age range on Census Night. A further 0.3% were enumerated on interviewer-based Special Indigenous Personal Forms.

There were an additional 334,958 persons within the age range whose Labour Force characteristics were not captured. This group reflected a combination of non-contact with individuals in households and non-private dwellings, as well as information sourced from administrative records and groups such as the homeless who were enumerated on Special Short Forms.

4. PROCESSING DATA

4.1 Description of Coding Procedures

2001 Census Forms were processed at the ABS's Data Processing Centre (DPC) in Sydney. After receipt, a scanned image of each form was taken, which was used for all further processing.

The six questions from which Labour Force Status (LFSP) has been derived were almost exclusively coded as a result of one of three successive processing procedures: Data Capture (DC), Pre Computer Assisted Coding Edits (known as Pre CAC) and Computer Assisted Coding (CAC). The balance were coded through Main Edits.

Overwhelmingly, responses were coded from mark boxes. The only question that had a write-in response box was Hours Worked, where there were two boxes for writing in the digits corresponding with the number of hours the respondent worked in the last week in all their jobs.

Three quarters of all responses to FPJP (the 'gateway' question for Labour Force Status) were coded directly from the mark boxes, utilising the Data Capture (DC) process.

For FPJP, the majority of the rest were coded via one of the pre CAC edits that applies rules based on options selected. The full LFSP coding breakdown was as follows:

TABLE 3: METHOD OF LABOUR FORCE STATUS CODING, 2001 CENSUS (a)

<i>Labour Force Status: Question</i>	<i>Percentage Coded By...</i>			
	<i>Data Capture (DC)</i>	<i>Pre CAC Edits</i>	<i>Computer Assisted Coding (CAC)</i>	<i>Main Edits</i>
Full-Time/Part-Time Job	75	15	3	7
Job Last Week	44	51	1	4
Hours Worked	43	51	2	4
Transport To Work (b) 1	44	51	1	4
2	46	49	3	2
3	46	49	3	2
Looking For Work	71	16	6	7
Availability to Start Work	7	85	7	1

(a) Excludes Overseas visitors and System Created Records.

(b) Transport to Work 1, 2 and 3 are the first, second and third option selections, per person, to the question

4.1.1 Data Capture (DC)

Data Capture is the process of scanning the forms into the image and text files that are used for all subsequent processes. At this stage, mark box responses are captured and coded, and text responses are translated into machine readable symbols (through a process that assigns percentages of surety for each individual character) which are examined for their fitness for Automatic Coding (AC).

During the Data Capture process, records are automatically repaired that are marked in such a way that they still conform to secondary tolerance guidelines for forming particular letters or numbers, as well as acceptable marking, if mark boxes.

Others that fail to meet such guidelines are sent to Manual Repair, where an operator studies the letter or number, in an attempt to clarify the respondent's intention.

Where the degree of surety was so low that neither Manual Repair or (for other topics) Automatic Coding were possible, the field was sent to CAC. Such a situation might exist for the example below:

FIGURE 12: HOURS WORKED WRITING EXAMPLE, 2001 CENSUS

40 Last week, how many hours did the person work in all jobs?
 • Subtract any time off, add any overtime or extra time worked.

None

7 0 Hours worked

Neither digit would be likely to be coded via Automatic Repair. An operator in Manual Repair would view each digit in isolation (initially) and would have to decide if the first was a '2' or '7' and the second (separately) if it was a '0' or '1', or perhaps even '8'. If either of these decisions were deemed too difficult, the Repair surety checking sequence would be followed. Ultimately, the response would be sent to Computer Assisted Coding, for determination, if necessary.

Where two or more options within a mark box question were acceptably marked, or where a mark differed significantly from what might be expected, the system always sent the record to Manual Repair, where only the first valid mark in the sequence was coded.

FIGURE 13: JOB LAST WEEK MARKING EXAMPLE, 2001 CENSUS

33 In the main job held last week was the person:
 • Mark one box only.
 • If the person had more than one job last week then 'main job' refers to the job in which the person usually works the most hours.
 • For a person working in their own limited liability (or Pty Ltd) company mark the first box.
 • See page 11 of the Census Guide for more information.

A wage or salary earner?
 Conducting own business with employees?
 Conducting own business without employees?
 A helper not receiving wages?

In the example above, the whole question would have gone to Manual Repair and the full range of marks for that question would have been reviewed. The first two marks would have passed the initial tolerance test. Regardless of whether or not the third marking would have been viewed as a genuine selection, under coding rules, only the first marking in the sequence would have been coded in Manual Repair.

See section 5.1.1 *Multiple Marking* for frequencies.

4.1.2 Automatic Coding (AC)

Automatic Coding is the process of computer matching the captured text responses to entries on an index for that topic. As there was no formal opportunity for written (word) response in the six questions from which LFSP is derived, Automatic Coding is not directly relevant to Labour Force coding.

4.1.3 Computer Assisted Coding (CAC)

Where DC (and Automatic or Manual Repair) could not definitively decipher a Labour Force question response, the response was assigned to manual (CAC) coding.

Computer Assisted Coding is the process of using procedures and rules to allow a coder to clarify the mark box or written response. Given that Hours Worked was the only write-in question from which LFSP was derived, resort to CAC was limited.

4.2 Programmed Modifications

4.2.1 Edits

The ABS Census program has a minimalist editing approach, with most data output as reported on census forms. However, editing is the systematic way of altering data to ensure that it is:

- more complete. For example, if the basic demographic variables of age, sex or usual residence are not stated, they are imputed based on known distributions;
- socially consistent to some extent. For example, age edits do not allow five year olds to be attending high school; and
- consistent with ABS classifications used in other ABS collections. Census Labour Force Status is derived using the same broad derivation used in the Labour Force Survey, to allow clients to more accurately compare data.

As far as specific Edits in the Labour Force-related questions are concerned, there is one (50A), that states that if the individual is a Full-Time Student, but LFSP has been determined as Not Stated, then LFSP (the Labour Force Status of the individual) should be modified to NILF (Not in the Labour Force).

There are three other edits that affect LFSP. These are linked to responses to an individual's Occupation:

TABLE 4: LABOUR FORCE STATUS EDITS, 2001 CENSUS

<i>Edit ID (a)</i>	<i>Edit Specification</i>
MS50A	If LFSP = & (Not Stated) and STUP = 2 (Full Time Student), then set LFSP = 7 (Not in the Labour Force).
MF307	Where LFSP = 5 - 7, NA or NS, and JBLP NE NA (@) Then set JBLP = NA (@)

MS234	WHERE OCCP = (099910 - student, 099920 - child, 099930- invalid pensioner, 099940-other pensioner, 099950-houseperson, 099960-retired, 099970-unemployed, 099980- honorary treasurer, 099990-drug dealer, OR 099900-workers comp) THEN, SET JBLP, OCCP, GNGP, HRSP, INDP, TPT1P, TPT2P, TPT3P, JTWSP, JTWDEP, JTWSLAP and JTWDZNP TO NA (@), AND SET LFSP = 7 (NILF).
MS234A	Where OCCP = '099971- worked for the dole' THEN set OCCP, JBLP, GNGP, HRSP, INDP, TPT1P, TPT2P, TPT3P, JTWSP, JTWDEP, JTWSLAP, and JTWDZNP to NA (@) and set LFSP = 5 (Unempl looking F/T work)

(a) Where MF = First Release Main Edits; MS = Second Release Main Edits

The Edit of concern is MF307. It is a post LFSP edit that effectively ensures that Census internal output cannot show a Not Stated to FPJP cross-classified by a Not Stated to JBLP. Quite clearly this would have occurred on quite a few occasions.

Edit interrogation has revealed that there were 791,546 instances where this edit was utilised. The edit should be removed from the series of programmed modifications as LFSP has already been derived utilising a different (and genuine respondent) JBLP value.

4.2.2 *The Derivation of Labour Force Status*

Labour Force Status is derived from information gained from six questions on the Census Form, coded using a set of 59 rules covering 201 defined combinations, that have at least one field open to any response (or non-response). This means that the true number of combinations would be many times greater.

4.2.2.1 The Coding for Question Variables

Internal ABS coding normally, though not always, followed the sequencing of response options within each question on the Census Form (see *Table 5*). The one exception was JBLP, where the 1996 option sequencing was carried over and not updated to reflect the sequence of options on the 2001 Census Form:

TABLE 5: CODES USED IN 2001 CENSUS LABOUR FORCE STATUS DERIVATION TABLE

Full-time/Part-time Job (FPJP) 1: Yes, worked for payment or profit 2: Yes, but absent on holidays etc. 3: Yes, unpaid work in a family business 4: Yes, other unpaid work 5: No, did not have a job	Transport to Work (TPTP) 1: Train 2: Bus 3: Ferry 4: Tram (including Light Rail) 5: Taxi 6: Car - as driver 7: Car - as passenger 8: Truck 9: Motorbike or motor scooter 10: Bicycle 11: Walked only 12: Worked at home
Job Last Week (JBLP) (a) 1: A wage or salary earner 2: A helper not receiving wages 3: Conducting own business with employees 4: Conducting own business without employees	
Hours Worked (HRSP) 00: No Hours Worked 01-99: 1-99 hours	
Looking for Work (LFWP) 1: No, did not look for work 2: Yes, looked for full-time work 3: Yes, looked for part-time work	Availability to Start Work (ATSP) 1: Yes, could have started work last week 2: No, already had a job to go to 3: No, temporarily ill or injured 4: No, other reason

(a) Ordered as per 1996 (see *Figure 6*), not 2001 (see *Figure 7*).

4.2.2.2 Output Categories

Edits, imputations and direct coding were used to derive an output category for each person aged 15 and over (excluding overseas visitors). There were seven LFSP output categories for responses in the 2001 Census:

- | | | |
|--------------------------|---|---------------------------------------|
| Employed: | 1 | Employee |
| | 2 | Employer |
| | 3 | Own account worker |
| | 4 | Contributing family worker |
| Unemployed: | 5 | Unemployed looking for full-time work |
| | 6 | Unemployed looking for part-time work |
| Not in the labour force: | 7 | Not in the labour force |

Additionally, there were a further three categories:

- | | |
|---|------------------|
| & | Not stated |
| @ | Not applicable |
| V | Overseas visitor |

4.2.2.3 The Derivation Table

Linking the coded Census variables with the LFSP output categories is the role of the Derivation Table.

While it is not necessary to present the full LFSP Derivation Table, a few selected examples give an idea of its scope and intention.

The appearance of a * indicates that any value for that Census variable, including Not Stated (NS), is acceptable.

TABLE 6: LABOUR FORCE STATUS DERIVATION TABLE EXAMPLES, 2001 CENSUS

<i>Example</i>	<i>Rule</i>	<i>F/P-time FPJP</i>	<i>Job JBLP</i>	<i>Looking LFWP</i>	<i>Available ATSP</i>	<i>Hrs Wkd HRSP</i>	<i>Travel TPTP</i>	<i>Status LFSP</i>
A	1	1	1	*	*	*	*	1
B	36	1	NS	NS	*	*	*	1,2,3
C	8	NS	1	*	*	*	*	1
D	46	4,5,NS	NS	2	NS	*	*	5
E	50	NS	NS	NS	*	00	NS	7
F	52	NS	NS	NS	*	01-99	*	&

The section 4.2.2.1 *The Coding of Census Variables*, and 4.2.2.2 *Output Categories* should be used to decipher the Derivation Table.

In Example A (Rule1) from *Table 6*, a person responding that they worked for payment and profit (1 in FPJP) and that they were a wage and salary earner (1 in JBLP) was allocated a LFSP of 1 = Employed, irrespective of their response (or non-response) to the other four contributing questions. Given the first two responses, this is an entirely logical result.

In Example B (Rule 36), a response to the ‘gateway’ question alone, is enough to be categorised to one of the first three Employed categories of LFSP, though there is no indication in this table of how the system could determine if the person was 1 (an Employee), 2 (an Employer) or 3 (an Own Account Worker). Information on the three starred variables (Availability, Hours and Travel) would not assist any differentiation.

This is where the special LFSP imputation rule is invoked:

TABLE 7: LABOUR FORCE STATUS IMPUTATION FORMULA, 2001 CENSUS (RULES 33-40)

<p>IF person stated they worked for payment or profit or usually worked but were temporarily absent (FPJP = 1 OR 2) AND they did not state the nature of their main job (ie whether on wages or own business with employees etc.) JBLP = & THEN impute LFSP (=1-3) based on state of enumeration</p>
<p>IF state of enumeration = Other Territories (STE = 9) THEN refer to SLA of Enum to determine which state to use (Jervis Bay => NSW; Cocos Island, Christmas Island => WA)</p>

A LFSP of 1, 2 or 3 is allocated based on the proportion of that LFSP category in the person’s state of enumeration at a previous Census - in this case the 1991 Census. As can be

seen in section 6.1 *Labour Force Status: 1991, 1996 and 2001 Censuses*, Employee counts nationally were up to 10 percentage points higher from the 1996 Census than in the neighbouring Censuses. Such a distribution would have unnecessarily skewed distributions for data governed by the Rules 33 to 40, had the most recent Census figures been used.

In total there were 102,592 records imputed under Rules 33 to 40 in the Derivation Table. This is 0.7% of all records categorised within Labour Force Status (excluding Not Stated).

In Example C, the primacy of the 'gateway' question is undermined. While FPJP sequenced out (to Question 42, Looking for Work - LFWP) those persons who indicated that they did other unpaid work (4) or did not have a job (5), a Not Stated to the 'gateway' question would still result in a LFSP of 'Employed' if the person indicated they were a wage and salary earner (1) in JBLP - even though all other responses could be NS!

This has been done to maximise the use and value of the data collected. However, the fewer components contributing to a particular classification, the more likely it is that its validity could be questioned.

Similar rules exist for the remaining JBLP options, allowing just one response (to JBLP) to generate a LFSP classification within the Employed category.

Quite logically, the appropriate Unemployed and Looking for Work category could be registered through just a positive response to LFWP (Looking for Full-time or Part-time work) - as in Example D.

Arguably, the minimal response that is codeable to a LFSP classification is shown in Example E. The sole response of '00' for Hours Worked is accepted as enough to categorise the person as Not In the Labour Force (NILF).

By contrast, Example F shows the sequence for Rule 52, where, although Hours Worked can be between 1 and 99 and even though there might be responses to ATSP and TPTP, the LFSP is derived as Not Stated. It could be argued that if a person was to have responded 2 to ATSP (No, already had a job to go to) and a method of travel to work, in addition to the hours worked, that person could reliably be assumed to be within the general LFSP grouping of Employed. Whether the person is an Employee, Employer, own Account Worker or Contributing Family Worker, cannot be discerned from the information provided - even though it is more than that given under Rule 50.

Generally, the derivation rules do a good job of maximising the conversion of Census respondent data into a Labour Force category - the one exception being the reliance of Rules 33 to 40 on distributions based on the historically old Census data from 1991.

The complexity of the Derivation Table and its multiplicity of permutations demands a thorough periodic review - daunting though such a task may seem.

4.3 *Quality Management (QM)*

A Quality Management (QM) system was established to identify systematic discrepancies in processing, provide feedback to coders on discrepancies and produce and analyse discrepancy rates by topics.

4.3.1 *The QM Process*

Quality Management processing takes a sample of each coder's work, plus samples of codes resulting from Data Capture and Automatic Coding, for duplicate coding by a second coder. When the original code and second code differ, both outcomes are written to a mismatch file; these mismatches are then recoded for a third time, by an adjudicator, who determines which is the correct code. When the Adjudicator determines a code that differs from the original and/or QM coder, a discrepancy is recorded for that source. In some cases, the Adjudicator may determine that both are incorrect, and both will have a discrepancy recorded. A report of these discrepancies is fed back to the relevant coder, or process, so that retraining can be done, or systems updates can be made.

4.3.2 *Discrepancy Rates*

In the overwhelming majority of cases, the data is not corrected as a result of QM sampling: the aim is to improve the coder or process so that such errors do not reoccur. Discrepancy Rates therefore show error rates that are very close to those existing in the final data. The discrepancies are also aggregated into the Management Information System (MIS) reports which provide data on the types and frequencies of coding errors over time.

The QM system in place during processing allowed the detection of discrepancies and the calculation of a crude discrepancy rate. This crude discrepancy rate differs from a true discrepancy rate for the following reasons:

- a higher proportion of 'poor' coders' work was included in the quality monitoring sample;
- the Quality Management check coders could make the same mistake as the original coder and therefore an error would not be detected;
- there is not always an absolutely correct code for every response; and
- discrepancies were recorded for any difference in coding between the Quality Management coder and the original coder.

The DPC routinely reviewed between 10% and 50% of automatic and manual coding. This practice was ongoing, though, particularly with a 'human' coder, the percentage chosen for review varied depending on their performance. In this way a measure of quality could be made, and extra training or ongoing support provided if a staff member was having continuing problems. Automatic processes were also continuously monitored.

There would invariably have been errors that coders or systems would have made that were repeated by the QM coders - therefore ensuring that further review by Adjudication never occurred. Such instances, however, would have been small - no doubt less than the

confirmed Discrepancy Rate. Balancing out this aspect was the greater scrutiny of coders experiencing difficulty.

TABLE 8: DISCREPANCY RATES BY LABOUR FORCE RELATED QUESTION, 2001 CENSUS, percent (a)

<i>Labour Force Status: Question</i>	<i>Coded By...</i>		<i>All</i>
	<i>Data Capture (DC)</i>	<i>Computer Assisted Coding (CAC)</i>	
Full-Time/Part-Time Job	0.06	0.50	0.17
Job Last Week	0.06	0.39	0.19
Hours Worked	0.65	1.02	0.71
Transport To Work 1	0.78	0.40	0.73
2	0.11	0.05	0.10
3	0.03	0.04	0.03
Looking For Work	0.06	0.33	0.18
Availability to Start Work	0.18	0.29	0.28

(a) Excludes Overseas visitors and System Created Records.

The most common errors occurred in Hours Worked and the first coded Transport to Work selection (Transport to Work 1).

The Hours Worked errors covered a range from number misinterpretation to edit processing to ‘not applicable’. Given that this question was the only one without mark boxes, the resulting overall error rate of 0.71% is reasonable.

Transport to Work errors were related to cross outs and invalid marks, such as big ticks covering two or more mark boxes, while the remaining questions experienced generally similar error rates.

Full-Time/Part-Time Job CAC errors centered around coders incorrectly coding ‘Not Stated’ rather than a selection - or vice versa.

4.4 Validation

The role of Validation in the processing system was to ensure that the data produced, and released, met the requirements of the users. This role was carried out by checking the data produced by the system to ensure that it meets the stated output requirements, and identifying and correcting the errors that occur. When the source of the error was identified, that part of the system that was generating the error was reviewed for the most suitable method of correction. In some cases, a procedural correction may be more appropriate than a system update.

Validation reviewed input data for all six LFSP input variables, as well as reviewing the LFSP output itself. Validation staff checked, for example, that persons associated with the variables were aged 15 or over; where usual residence was overseas, that the person was classified as an Overseas Visitor; that if LFSP was Not Applicable, that Income was Not Applicable; and that there was symmetry with 1996 data.

5. SAMPLE DATA

5.1 DQI Sample Analysis

A 2% statistically derived sample of CDs (totalling approximately 760) from each State and Territory in Australia, representing a range of urban and rural CDs; and two smaller samples, focused on Indigenous and Homeless populations, were identified for 2001. Using these samples, Data Quality Investigations (DQIs) were carried out at the DPC, directly related to the areas for which in-depth investigations were planned. The resulting data quality information is made available to clients in Census Papers and other related publications, and through analysis provided via the Census Query network.

5.1.1 Multiple Marking

The sample in relation to the Full-time/Part-time Job (FPJP) question:

TABLE 9: MULTIPLE MARKS, FULL-TIME/PART-TIME JOB, 2001 DQI SAMPLE (a)

	<i>Number</i>	<i>%</i>
Total Persons in DQI	366,667	
Persons who responded to FPJP (aged 15 years or more)	301,916	100.00
Total Multiple Marked	495	0.16
Most popular combination:		
1 = Yes, worked for payment or profit, AND		
3 = Yes, unpaid work in a family business	102	0.03

(a) Excludes Overseas visitors and System Created Records.

Multiple marking for the gateway question was relatively low, at only 0.16%. Four combinations registered 80 or more occurrences: three of these involved the first option, while the fourth significant combination ('Yes, other unpaid work' and 'No, did not have a job'), occurred 90 times in the DQI Sample.

Persons who marked option 5, accounted for 45% of all multiple marks. In all these cases, the person would have had their earlier mark coded. If option 5 were the intended selection in every case, presumably the 221 persons involved in this sample scenario, would have not marked another question till No. 42 (Looking for Work). The sample in relation to the Job Last Week (JBLP) question:

TABLE 10: MULTIPLE MARKS, JOB LAST WEEK, 2001 DQI SAMPLE (a)

	<i>Number</i>	<i>%</i>
Total Persons in DQI	366,667	
Persons who responded to JBLP (aged 15 years or more and have a job: i.e. 1, 2 or 3 or Not Stated to FPJP)	168,857	100.00
Total Multiple Marked	454	0.27
Most popular combination:		
1 = A wage and salary earner, AND		
3 = Conducting own business without employees	209	0.12

(a) Excludes Overseas visitors and System Created Records.

The most popular multiple mark would have resulted in the first option (A wage and salary earner) being coded and the third (Conducting own business without employees) being ignored.

While this combination occurred in 46% of multiple marked records they would have only marginally contributed to the 76.2% of the Labour Force classified as wage and salary workers. In any case, it is likely to have occurred in each of the previous Censuses, where, presumably, its impact was similar.

Multiple marking was 69% greater for JBLP than FPJP. Most likely this reflects the greater complexity of concepts presented.

The sample in relation to the Hours Worked (HRSP) question did not involve multiple marking, but revealed that 17.7% of persons who stated they worked hours, proffered 40 as their number. This was the most popular written response - though one in every 5,550 stated that they worked 168 hours a week - or 24 hours a day!

The sample in relation to the Looking for Work (LFWP) question:

TABLE 11: MULTIPLE MARKS, LOOKING FOR WORK, 2001 DQI SAMPLE (a)

	<i>Number</i>	<i>%</i>
Total Persons in DQI	366,667	
Persons who responded to LFWP (aged 15 years or more)	282,955	100.00
Total Multiple Marked	2,528	0.89
Most popular combination:		
2 = Yes, looked for full-time work, AND		
3 = Yes, looked for part-time work.	2,441	0.86

(a) Excludes Overseas visitors and System Created Records.

Both options for looking for work were selected by 97% of multiple markers. The marking of this combination is close to 1% of those responding to the question, and indicates that it is most likely that many genuinely looked for both full-time and part-time work in the four weeks before the 2001 Census.

Under the classification, a person could be classified as only looking for one form of work. In any case, under the Census coding rules, only the first (full-time) option would have been coded, when both would have been marked.

The balance of 87 multi-marked forms all included combinations of 'No' and then 'Yes'.

The sample in relation to the Availability to Start Work (ATSP) question:

TABLE 12: MULTIPLE MARKS, AVAILABILITY TO START WORK, 2001 DQI SAMPLE (a)

	<i>Number</i>	<i>%</i>
Total Persons in DQI	366,667	
Persons who responded to ATSP (aged 15 years or more and stated looking for work, in LFWP)	69,460	100.00
Total Multiple Marked	190	0.27
Most popular combination: 2 = No, already had a job to go to, AND 4 = No, other reason.	43	0.06

(a) Excludes Overseas visitors and System Created Records.

ATSP has the same multiple response rate as JBLP, though both are less than a third of LFWP. It is of course possible to have multiple reasons for not being available to start work last week, so a selection such as the most popular combination could be valid, though again, only the first (No, already had a job to go to) would have been coded.

A total of 70 persons marked 'Yes, could have started work last week', but also marked one of the three 'No' options.

5.1.2 *Limited Liability Suffix*

The 1996 census forms specifically included 'limited liability' mark-box options, to facilitate alignment of Census output with Labour Force Survey concepts. Due to the respondent and processing difficulties encountered, the limited liability options were removed from the 2001 forms.

In an attempt to find a viable proxy, the DQI team recorded the number of times in the 2001 Sample that a suffix to the business name indicating limited liability - such as Pty Ltd, Limited or Inc - had been recorded in answer to Q36 (Business Name). The result was as follows:

TABLE 13: SUFFIX INDICATING LIMITED LIABILITY, BUSINESS NAME, 2001 DQI SAMPLE (a)

	<i>Number</i>	<i>%</i>
Total Persons in DQI	366,667	
Persons who stated business name (aged 15 years or more and have a job)	163,885	100.0
Limited Liability suffix present	28,535	17.4

(a) Excludes Overseas visitors and System Created Records.

The percentage stating a limited liability business name also includes those who were 'wage and salary earners', so no direct comparison can be made with 1996 figures. However, if DQI counts for those with a limited liability indicator are cross-classified with Job Last Week, categories equivalent to those produced in 1996 emerge:

TABLE 14: SUFFIX INDICATING LIMITED LIABILITY, BY JOB LAST WEEK, 2001 DQI SAMPLE (a)

	<i>Frequency</i>
Wage and salary earner	24,155
Conducting own business with employees	2,296
Conducting own business without employees	1,582
A helper not receiving wages	148
Multimarked	74
JBLP Not Stated	280
Total	28,535

(a) Excludes Overseas visitors and System Created Records.

When the 'own business' frequencies (2,296 and 1,582) are multiplied by 50 to reach a theoretical Australia-wide figure, the following table results:

TABLE 15: SUFFIX INDICATING LIMITED LIABILITY BY OWN BUSINESS, COMPARISON, 1996 CENSUS AND 2001 DQI SAMPLE (a)

	<i>Ltd Lia. With Emp</i>	<i>Ltd Lia No Emp</i>
1996 Census	307,502	256,579
2001 DQI count extrapolated to Australia level	114,800	79,100

(a) Excludes Overseas visitors and System Created Records.

While the relationship between the two types is generally proportional, their gross numbers are not. This result indicates that the inclusion of a specific question on limited liability (as in 1996) is more likely to identify employment in limited liability businesses, than relying on the respondent to include this aspect as an unprompted suffix to the write-in business name (as in 2001).

6. FINAL DATA ANALYSIS

6.1 Labour Force Status: 1991, 1996 and 2001 Censuses

Labour Force Participation rates have remained very stable over the past three Censuses, at 61%. The number of unemployed has fallen with each Census, as has the number of people looking for full-time work:

TABLE 16: LABOUR FORCE STATUS OF PERSONS AGED 15 AND OVER, 1991, 1996 and 2001 CENSUSES (a)

<i>Labour Force Status</i>	<i>1991 Census</i>		<i>1996 Census</i>		<i>2001 Census</i>	
	Count	%	Count	%	Count	%
Employed:	7,086,237	88.4	7,635,859	90.8	8,298,606	92.6
Employee	5,788,134	72.2	6,920,998	82.3	6,823,554	76.2
Employer	483,957	6.0	194,611	2.3	578,050	6.5
Own Account Worker	751,818	9.4	442,363	5.3	836,770	9.3
Contributing Family Worker	62,328	0.8	77,887	0.9	60,232	0.7
Total Unemployed:	929,258	11.6	771,908	9.2	660,709	7.4
Looking for Full-time Work	748,444	9.3	609,934	7.3	472,513	5.3
Looking for Part-time Work	180,814	2.3	161,974	1.9	188,196	2.1
Total in Labour Force	8,015,495	100.0	8,407,767	100.0	8,959,315	100.0
In Labour Force (Participation Rate)	8,015,495	61.6	8,407,767	61.3	8,959,315	61.9
Not in Labour Force	4,699,603	36.1	5,144,096	37.5	5,242,337	36.2
Not Stated	302,690	2.3	171,487	1.3	284,114	2.0
Total Persons Aged 15 and Over	13,017,788		13,723,350		14,485,766	

(a) Excludes Overseas visitors. While 1996 and 2001 counts exclude Dummy and System Created Records (respectively), the number of these in the 1991 count was unable to be determined.

The principle variations have occurred within those deemed to be 'Employed' - the group divided amongst the Status in Employment categories of 'Employee', 'Employer', 'Own Account Worker' and 'Contributing Family Worker'. While 1991 and 2001 percentages are similar in each category, those for 1996 are quite different.

Where 1991 and 2001 are 72.2% and 76.2% respectively for 'Employees', the 1996 percentage leapt to 82.3%. 'Employers' (6.0% in 1991 and then 6.5% in 2001) dropped to only 2.3% in the intervening 1996 Census.

That two percent figure is inconsistent with ‘Employer’ percentages and directly reflects the use and coding of the term ‘limited liability’, introduced in 1996 for the Job Last Week question, but removed for 2001.

According to Australian National Accounts and Labour Force Survey standards and practice, those conducting their own business in ‘limited liability’ companies (also known as ‘incorporated businesses’), with or without employees, are classified as Employees. This was the perspective adopted for Census coding in 1996.

In 1991 and 2001, without the use of the ‘limited liability’ term in the options and their associated breakdown, persons conducting their own business were recorded as Employer (if with employees) and Own Account Workers (if without employees).

Table 10 (below) demonstrates the difference between 1996 coding and an adjusted version that equates with the more simplified interpretation as applied in 1991 and 2001.

TABLE 17: EMPLOYED PERSONS AND PERCENTAGE OF LABOUR FORCE, 1996 CENSUS - UNADJUSTED AND ADJUSTED (a)

<i>Labour Force Status</i>	<i>Job Last Week</i>					<i>Helper</i>	<i>%</i>
	<i>For Wages</i>	<i>Ltd Lia. With Emp</i>	<i>Ltd Lia. No Emp</i>	<i>Own Bus. With Emp</i>	<i>Own Bus. No Emp</i>		
Unadjusted:							
Employee	6,229,334	307,502	256,579				82.3
Employer				188,618			2.3
Own Account Worker					427,902		5.3
Contributing Family Worker						57,957	0.9
Adjusted:							
Employee	6,229,334	↓	↓				75.6
Employer		307,502	↓	188,618			6.1
Own Account Worker			256,579		427,902		8.3
Contributing Family Worker						57,957	0.9

(a) Excludes Overseas visitors and System Created Records.

The adjustments in Table 17 make 1996 Employed Persons percentages more like those of 1991 and 2001 (see Table 16).

Shifting those who marked as ‘Conducting own business in a limited liability company, with employees’ from the coded ‘Employee’ category to ‘Employer’ category, assists in changing the ‘Employee’ percentage of the Labor Force from 82.3% to 75.6% - much more in line with the 1991 and 1996 percentages for ‘Employees’ of 72.2% and 76.2% respectively.

Similarly, the ‘Employer’ category grows from 2.3% to 6.1%, much more consistent with 1991’s 6.0% and 2001’s 6.5% results.

Moving those ‘Conducting own business in a limited liability company, with no employees’ from the ‘Employee’ to the ‘Own Account Worker’ category, is the other contributor to the ‘Employee’ percentage reduction and the rise in ‘Own Account Workers’. The latter rose from 5.3% to 8.3%, more in line with the 9.4% of 1991 and 9.3% of 2001.

Once these adjustments are made, LFSP figures can be seen to be more consistent over the three Censuses. However, Census Labour Force Status in Employment results for 2001 remain ‘out of step’ with the standards for classifying staff in limited liability businesses.

6.2 *Non-response*

6.2.1 *Non-response Rates: 1996 and 2001 Censuses*

Table 18 shows that mixed results were achieved regarding efforts to reduce Non-response Rates for labour force related variables in 2001.

TABLE 18: NON-RESPONSE RATES FOR LABOUR FORCE STATUS RELATED VARIABLES, 1996 and 2001 CENSUSES (a)

<i>Variable</i>	<i>1996 Census (%)</i>	<i>2001 Census (%)</i>	<i>% Change</i>
Labour Force Status	1.3	2.0	56.8
Full-Time Part-Time Job	4.4	2.4	-45.7
Job Last Week	2.2	1.4	-38.6
Hours Worked	2.2	3.0	34.7
Method of Travel to Work	1.8	1.8	1.1
Looking for Work	10.9	7.9	-27.5
Availability to Start Work (b)	8.3	5.2	-37.0

(a) Excludes Overseas visitors and System Created Records.

(b) Includes only those who stated that they were looking for work

From 1996 to 2001, Non-response to the Full-time Part-time Job question fell by over 45% (4.4% down to 2.4%). Exactly why this should have been the case is unclear. The question itself was at the top of the page in 2001, but in the middle, after Income, in 1996. This may have been a contributing factor.

The question was identical in both years, with the exception that in 2001 there was an additional instruction to: ‘See page 11 of the Census Guide for more information’. Pages 11, 12 and 13 of the Household Guide supplied explanatory information on the range of ‘Jobs and Work’ questions. Other questions relating to work location and travel were covered on page 13 in a section called ‘Where You Work and How You Travel to Work’.

It is possible, though perhaps unlikely that the statement to refer to the Guide, in 2001, would have contributed to a reduction in Non-response of over two percentage points.

The next largest decrease between 1996 and 2001 Non-response rates was 38.6% for the Job Last Week question, where limited liability was included in 1996, but not in 2001. Hours Worked changed from a 1996 series of mark box options displaying a range of hours, to a

pair of write-in boxes in 2001. Non-response rose from 2.2% to 3.0%, suggesting respondents had more difficulty giving precise details.

The Looking for Work questions on the 1996 and 2001 forms were all but identical in content and format - yet Non-response dropped a full three percentage points to 7.9% in 2001.

6.2.2 Coding to Availability To Start Work

It is suggested that Availability to Start Work (ATSP), not a variable for which data is publicly released, should have its Non-response coding revised. Only those who answer positively to the Looking for Work question, should be part of the potential Non-response population. For 2001, those who did not answer LFWP were included in this group.

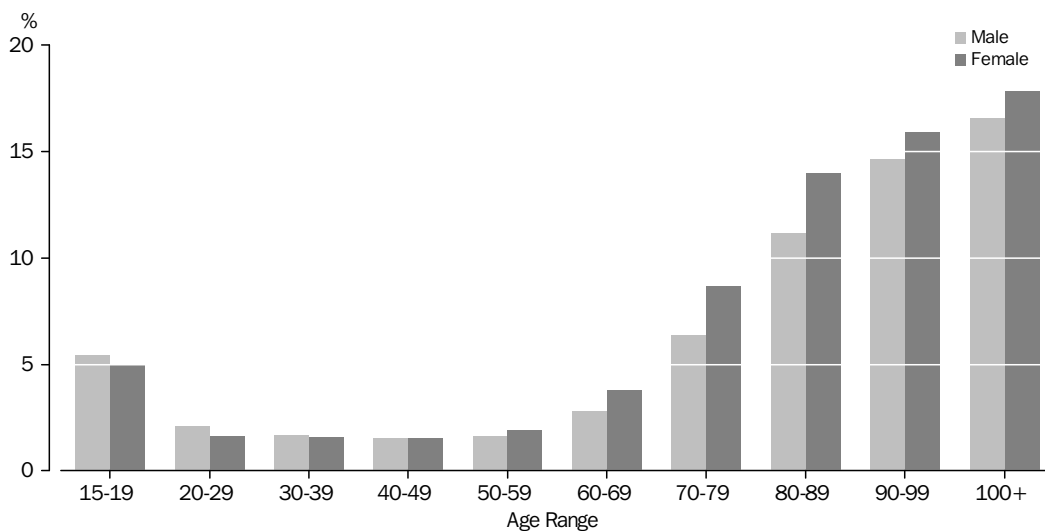
Additionally, there was a group of 3,215 persons who had their forms coded manually (CAC'd) as they were multiple or faint-marked for LFWP and ended up with a coding of 'No, did not look for work'. This group failed to qualify for application of the pre-CAC edit that would have set them to Not Applicable to ATSP. In future, a later edit needs to be applied to ensure they can't be coded as needing to respond to ATSP.

6.2.3 Characteristics of Non-respondents

Everyone 15 years and over was expected to respond to the 'gateway' question: 'Last week, did the person have a full-time or part-time job of any kind?'

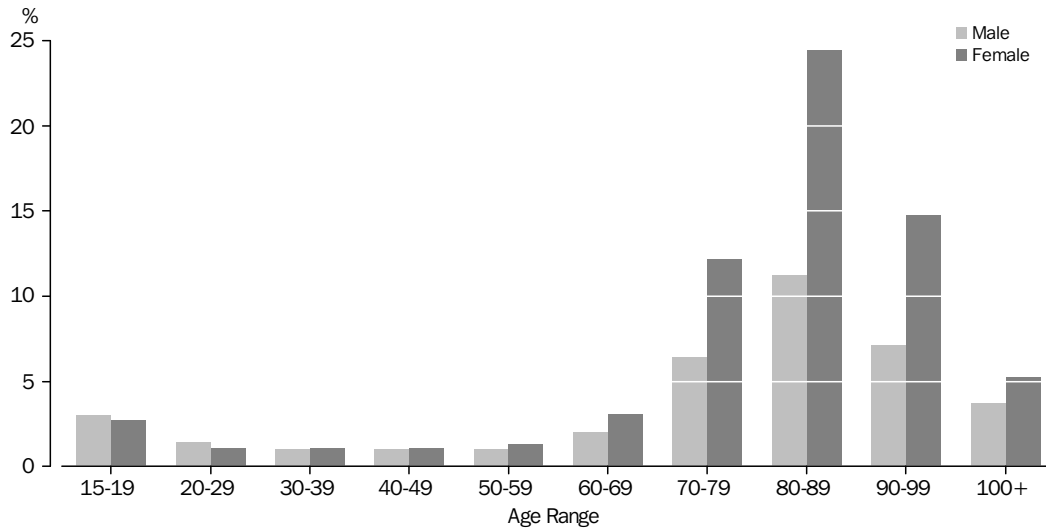
Women under 50 years of age were more likely to respond (see *Figure 13*). Beyond 50, the position was reversed:

FIGURE 13: NON-RESPONSE TO FULL-TIME/PART-TIME JOB, BY AGE AND SEX, 2001 CENSUS



Those who responded positively to the ‘gateway’ question and acknowledged they had a job, were meant to complete the following question on their Job Last Week:

FIGURE 14: NON-RESPONSE TO JOB LAST WEEK, BY AGE AND SEX, 2001 CENSUS



Differences for those under 60 are marginal, but for those 60 years of age and older, women are far less likely to respond (and categorise the job they had last week), than men.

When non-respondents to JBLP (from *Figure 14*) are reviewed for their response to the gateway question FPJP, the following table results:

TABLE 19: RESPONSE TO FULL-TIME/PART-TIME JOB, BY AGE RANGE, FOR NON-RESPONSE TO JOB LAST WEEK BY SEX, 2001 CENSUS, percent (a)

Age range	Male			Female		
	Yes, worked for pay	Yes, but absent	Unpaid family business	Yes, worked for pay	Yes, but absent	Unpaid family business
15-19	87.9	7.3	4.9	89.7	6.9	3.4
20-24	87.4	9.1	3.5	85.1	12.1	2.8
25-29	86.7	10.1	3.2	71.8	21.6	6.6
30-34	86.2	9.8	4.0	64.9	24.8	10.3
35-39	86.2	9.1	4.7	71.8	16.4	11.8
40-44	84.6	10.1	5.3	76.8	11.9	11.3
45-49	83.8	10.0	6.2	76.9	12.5	10.7
50-54	82.4	11.4	6.3	72.0	15.6	12.4
55-59	78.6	13.3	8.1	69.1	15.3	15.7

continued...

TABLE 19: RESPONSE TO FULL-TIME/PART-TIME JOB, BY AGE RANGE, FOR NON-RESPONSE TO JOB LAST WEEK BY SEX, 2001 CENSUS, percent *continued...*

<i>Age range</i>	<i>Male</i>			<i>Female</i>		
	<i>Yes, worked for pay</i>	<i>Yes, but absent</i>	<i>Unpaid family business</i>	<i>Yes, worked for pay</i>	<i>Yes, but absent</i>	<i>Unpaid family business</i>
60-64	74.3	13.2	12.6	69.6	11.1	19.4
65-69	74.7	7.2	18.1	70.1	6.2	23.8
70-74	71.6	5.2	23.2	75.9	5.0	19.1
75-79	72.5	4.5	23.0	78.8	3.8	17.3
80-84	75.6	3.3	21.1	83.2	4.6	12.2
85-89	79.2	4.1	16.7	87.1	3.9	9.0
90-94	76.2	7.9	15.9	85.4	9.2	5.4
95-99	82.4	8.8	8.8	87.5	0.0	12.5
100+	70.0	0.0	30.0	100.0	0.0	0.0

(a) Excludes Overseas visitors and System Created Records.

The table above shows that the overwhelming majority of non-respondents to JBLP, indicated that they worked for payment and profit in FPJP - the 'gateway' question.

Beyond age 65, absence from work decreases but the proportion of non-respondents working in an unpaid position in the family business, increases, for both men and women. Nevertheless, the proportion indicating they were in unpaid work in the family business, is far too small to imply that perhaps a significant number of women over 65 selected this option interpreting it as housework and then realised its inappropriateness when confronted with the next (JBLP) question.

As *Appendix 2 (Labour Force Variables by Stated/Not Stated, by Sex, Income, Qualification & Birthplace)* shows for the range of Labour Force variables, that the greater the income and also the higher the qualification, the lower the Non-response rate.

The table also shows that a person born Overseas was 33% more likely to be a non-respondent to JBLP than one born in Australia. This is the greatest difference (for Birthplace by Non-response) amongst any of the Labour Force variables.

A marked difference exists between the sexes of non-respondents when language other than English spoken at home, is considered.

TABLE 20: NON-RESPONSE TO JOB LAST WEEK BY LANGUAGE SPOKEN AT HOME, 2001 CENSUS (a)

<i>Language Variable</i>	<i>Non-response to JBLP</i>		<i>Full 15+ Population</i>	
	<i>Males %</i>	<i>Females %</i>	<i>Males %</i>	<i>Females %</i>
English Only	63.7	77.0	83.3	83.1
Language Other Than English	36.3	23.0	16.7	16.9
Did Not Speak English 'Very Well'	46.9	43.2	44.3	46.8

(a) Excludes Overseas visitors and System Created Records.

This accounted for 36.3% of men, but only 23% of women who were non-respondents, compared to the general 15 years and over population's 16.7% and 16.9% respectively, spoke a language other than English at home. Of those, 46.9% of men and 43.2% of women stated that they did not speak English 'very well'.

These sets of figures, while not explaining the significantly greater non-response percentage for women over the age of 65, indicate that lack of proficiency in English (and therefore most likely unfamiliarity with employment concepts) was a possible contributor to non-response to JBLP.

7. CONCLUSIONS

The 1996 coding of those conducting their own business in a limited liability company to 'Employee' status, whether they had employees or not, distorted time series analysis of Status in Employment data. Had those limited liability organisations with employees been coded to 'Employer' and those without employees to 'Own Account Workers', percentage distributions would be similar to those produced from 1991 and 2001 figures.

This implies that respondents who indicated they worked in a limited liability company, invariably would have coded themselves to 'Employer' ('Conducting own business with employees') or 'Own Account Worker' ('Conducting own business without employees') rather than seen themselves as Employees ('A wage or salary earner').

While the 2001 Census dot point instruction on the Form (and in the 2001 Census Guide), instructed respondents to mark the 'wage and salary earner' option if they worked for their own limited liability company (see *Figures 7 and 11*), the similarity between 1991, 2001 and adjusted 1996 percentages for Employees indicates the information had relatively little impact when compared with 1996 Census Form option changes (see *Figure 6*). Respondents adopted a 'simplified interpretation' of the question, in ignoring the limited liability aspect.

2001 question design and processing precluded Census results from aligning with National Accounts standards for Employer, Employee, and Own Account Worker categories.

Non-response to the Job Last Week (JBLP) question in 2001 (which excluded 'limited liability' wording), was 39% lower than in 1996. This was the second highest difference for Labour Force questions and the largest difference for any question to be answered by employed persons only.

This is most likely a result of the complexity of wording and concepts. Even in 2001, non-respondents were more likely than those in the full Census population to be born overseas and to speak a language other than English at home. While these factors alone do not necessarily equate with inadequate levels of English comprehension, close to half of non-respondents to JBLP, who spoke a language other than English at home, did not speak English 'very well'.

While the maximising of respondent contribution to Labour Force Status is laudible, care should be taken with the future construction of Derivation Tables. In 2001, Rules 33 to 40 imputed a total of 102,592 responses to one of three LFSP categories, based on their distribution in the person's state of enumeration (see *4.2.2.3 The Derivation Table*) from the 1991 Census. This was a decade old - though preferable to using that of 1996. As has been shown in section *6.1*, the 1996 distribution was skewed by question wording and coding particular to that Census.

8. RECOMMENDATIONS

- That any change to form content to once again include the term ‘limited liability’ or similar words designed to elicit such information, is in the form of a supplementary selection option specifically for those conducting their own business. This should be done so as to maintain and enable a time series comparison of basic interpretation of the ‘Job Last Week’ question, and to limit the likelihood of non-response due to question complexity.
- The complexity of the Derivation Table for Labour Force Status, with its multiplicity of permutations and variety of associated Edits, necessitates a thorough periodic review. In any case, a rebuilding of the Table and Edits will be essential if the Census Form content changes. Users will need to be mindful of the possibility of minor distortions inherited as a result of imputation, while Census staff must ensure that 2001 and not 1996 Census distributions are used when imputing 2006 data.
- The modification to collected data that occurred with Edit MF307 affected 791,546 records (though none were those indicating a full or part-time job and all were for JBLP, which was not publicly available). This Edit should be removed and others reviewed.
- The multiple marking of looking for both full-time and part-time work (in LFWP) was close to 1% of respondents - suggesting a classification and coding review is an option.
- Coding of records to LFWP (Looking for Work) and ATSP (Availability to Start Work) needs to be reviewed, as those not responding to the previous Looking for Work (LFWP) question are counted in the Non-response population for ATSP. Furthermore, the 2001 Census coding for these questions did not mirror the form sequencing instructions. Some records that were manually coded for LFWP, escaped an edit that should have meant they were Not Applicable for ATSP.

9. GLOSSARY

Census Labour Force related Acronyms:

ATSP - Availability to Start Work. Question that asks if the person could have started work if they had found a job last week.

FPJP - Full-time/Part-time Job. This is the Labour Force ‘gateway’ question. From here, respondents either move to the following question, or are sequenced to one further on in the form, depending on their response to FPJP.

HRSP - Hours Worked. Question asked for the total hours worked in all jobs last week. This was the only one of the labour force questions used to derive Labour Force Status, that did not rely solely on mark boxes.

JBLP - Job Last Week. Question that asks about the main job held last week.

LFSP - Labour Force Status. A status derived from responses (or non-response) to a series of six labour force related Census questions. Usually expressed as an element in the Labour Force Classification (see *Figure 1*).

LFWP - Looking for Work. Question that asks if the respondent was looking for work at any time in the last four weeks.

TPTP - Transport to Work (on Census Day). Question that has 14 response options in mark box format. The first three marked boxes in descending order were coded for each person.

Other:

CAC - Computer Assisted Coding. The final (though not compulsory) stage in the general coding sequence, where, if necessary, responses are coded manually.

Census Guide - an explanatory booklet that provides advice and background information on how to complete a Census Form. A Guide was distributed with each Form.

Census Inquiry Service (CIS) - a phone-based (13 number) facility set up to provide translation and other information services relating to the 2001 Census.

DC - Data Capture. The process of scanning that ensures all marks on the Census Form (mark box or writing) are reproduced in image or text files that are used for all subsequent processes. As a result of this, DC registers and codes mark box responses.

Discrepancy Rate - the rate at which Quality Management and subsequent Adjudication coding differed from that of an individual human or system coding. It is expressed as a percentage and is regarded as the error rate within final data.

DPC - Data Processing Centre. A facility established each Census by the ABS, to receive and process Census Forms. For the 2001 Census it was located in Ultimo, Sydney.

LFS (Labour Force Survey) - an ABS interviewer-conducted survey with results released monthly. The purpose of the Labour Force Survey is to provide timely information on the labour market activity of the civilian population of Australia aged 15 years and over. It is the official source for the labour force participation and unemployment rates.

APPENDIX 1 - QUESTION NUMBERS ON HOUSEHOLD FORMS FOR LABOUR FORCE STATUS-RELATED VARIABLES, 1991, 1996 and 2001 CENSUSES

<i>Variable</i>	<i>1991 Census</i>	<i>1996 Census</i>	<i>2001 Census</i>
Labour Force Status	Qns 30, 31, 32, 33 and 39	Qns 30, 31, 37, 38, 39 and 40	Qns 32, 33, 40, 41, 42 and 43
Full-Time Part-Time Job	Qn 30	Qn 30	Qn 32
Job Last Week	Qn 32	Qn 31	Qn 33
Hours Worked	Qn 33	Qn 37	Qn 40
Method of Travel to Work	Qn 39	Qn 38	Qn 41
Looking for Work	Qn 31	Qn 39	Qn 42
Availability to Start Work	Not Asked	Qn 40	Qn 43

APPENDIX 2 - LABOUR FORCE VARIABLES by STATED/NOT STATED, by SEX, INCOME, QUALIFICATION & BIRTHPLACE, percent for applicable population

<i>Variable</i>	<i>FPJP</i>		<i>JBLP</i>		<i>HRSP</i>		<i>TPTIP</i>		<i>LFWP</i>		<i>ATSP</i>	
	<i>S</i>	<i>NS</i>	<i>S</i>	<i>NS</i>	<i>S</i>	<i>NS</i>	<i>S</i>	<i>NS</i>	<i>S</i>	<i>NS</i>	<i>S</i>	<i>NS</i>
Sex:												
Male	97.2	2.8	98.7	1.3	96.9	3.1	98.4	1.6	92.7	7.3	94.6	5.4
Female	96.7	3.3	98.6	1.4	97.2	2.8	98.1	1.9	91.5	8.5	95.1	4.9
Income:												
Negative	96.8	3.2	96.8	3.2	93.3	6.7	95.6	4.4	89.5	7.3	93.3	6.7
Nil	98.2	1.8	93.4	6.6	88.5	11.5	89.9	10.1	91.2	8.5	94.6	5.4
\$1-399	97.8	2.2	97.7	2.3	96.1	3.9	97.2	2.8	92.7	10.5	94.7	5.3
\$400-999	99.0	1.0	99.1	0.9	97.8	2.2	98.9	1.1	95.3	8.8	96.1	3.9
\$1,000 or more	99.5	0.5	99.5	0.5	98.5	1.5	99.3	0.7	97.2	7.3	96.9	3.1
Not Stated	69.3	30.7	93.7	6.3	80.4	19.6	90.1	9.9	57.0	4.7	86.0	14.0
Qualification:												
Deg or Higher	99.4	0.6	99.4	0.6	98.5	1.5	99.2	0.8	97.5	2.5	96.8	3.2
Adv Dip/Dip	99.2	0.8	99.2	0.8	98.3	1.7	99.1	0.9	96.6	3.4	96.2	3.8
Certificate	99.0	1.0	99.1	0.9	97.6	2.4	98.9	1.1	95.1	4.9	95.9	4.1
Inad Desc	98.5	1.5	98.9	1.1	97.6	2.4	98.6	1.4	94.1	5.9	95.0	5.0
Level NS	76.1	23.9	95.7	4.3	90.7	9.3	94.6	5.4	63.6	36.4	87.7	12.3
No Qual	98.4	1.6	98.3	1.7	96.5	3.5	97.9	2.1	93.4	6.6	94.4	5.6
Birthplace:												
Australia	97.6	2.4	98.8	1.2	97.2	2.8	98.4	1.6	93.1	6.9	95.3	4.7
Overseas	97.2	2.8	98.4	1.6	96.8	3.2	98.2	1.8	92.0	8.0	93.8	6.2
Not Stated	75.1	24.9	95.9	4.1	92.7	7.3	94.9	5.1	64.8	35.2	88.6	11.4

APPENDIX 3 - FACT SHEET: LABOUR FORCE STATUS - COMPARING CENSUS AND SURVEY DATA

Labour Force Status: Comparing Census and Survey Data

Although the Census and the monthly Labour Force Survey (LFS) both collect data on labour force status, they are not strictly comparable due to differences in the following:

- Scope;
- Coverage;
- Timing;
- Collection methodology;
- Measurement of underlying labour force concepts;
- Treatment of non-response;
- Non-response bias;
- Non-sampling error; and
- Sampling variability.

Scope

Scope is the population about which information is required. The two collections differ in their scope, both geographically and in respect of their target population.

Although included as part of Australia, the Jervis Bay Territory, along with the Territory of Christmas Island and the Territory of Cocos (Keeling) Islands are currently regarded as out-of-scope for ABS collections except for the Census, population estimates, and Cause of Death. The LFS therefore excludes these territories.

The Census aims to count every person in Australia on census night, excluding diplomatic personnel. The LFS counts only usual residents, and excludes members of the Australian permanent defence forces, members of non-Australian defence forces and their dependants, stationed in Australia.

Coverage

Coverage is the actual population about which information can be obtained or inferred, and under-enumeration is the degree to which coverage falls short of the intended scope.

Census coverage differs from that of the LFS. In the Census, people were counted

where they spent census night (which may not be where they usually live) and data from the Census are generally released on this place of enumeration basis (although place of usual residence based data are also available). Census labour force figures for the population aged 15 and over represent counts of people as enumerated, without adjustment for under-enumeration.

In the LFS, the survey applies coverage rules to ensure that each person is associated with only one dwelling, and hence has only one chance of selection. Persons who are away from their usual residence for six weeks or less at the time of interview are enumerated at their usual residence (relevant information may be obtained from other usual residents present at the time of the survey). LFS data relate only to place of usual residence, and the estimates are calculated in such a way as to add up to the independently estimated usually resident population aged 15 and over, a procedure which compensates for under-enumeration in the survey.

Timing

LFS interviews are generally conducted during the two weeks beginning on the Monday between the 6th and 12th of each month. The information obtained relates to the week before the interview (i.e. the reference week). For the August 2001 survey, the LFS interview weeks were moved to commence on 13 August and the reference weeks were therefore the two weeks commencing Monday 6 August. Census data refers to the week prior to Census Night on 7 August 2001.

Collection methodology

Households selected for the LFS are interviewed each month for eight months. The first interview is conducted face-to-face. Subsequent interviews are conducted by telephone (if acceptable to the respondent). The LFS interview could be answered by any responsible adult on behalf of other household members. LFS information is then obtained from the occupants of selected dwellings by specially trained interviewers who ask respondents the survey questions and record the answers.

In the Census, collectors deliver and collect the census forms but the forms are completed by each household, often by each household member. This dependence on self-enumeration rather than interview means that respondent's interpretation and completion of questions may be less accurate.

Measurement of labour force concepts

Differences in the definition of labour force status categories between the two collections should also be borne in mind when comparing figures.

The LFS provides Australia's official source of labour force data. The survey devotes many questions to providing measures of employment and unemployment that are aligned closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians.

While the Census aims to derive labour force status on a basis comparable with the

LFS, the Census questions are not as detailed, nor as comprehensive. This is largely due to space limitations on the census form, as well as constraints imposed by self-enumeration. As a result, the LFS and Census definitions differ for the employed, the unemployed and those not in the labour force.

Treatment of non-response

A further difference between the two collections lies in their treatment of non-response. In the Census, respondents for whom Labour force status was not recorded or imputed are classed in the category 'Not stated'. In contrast, the LFS does not require a Not stated category, because only fully responding questionnaires contribute to the estimates, with any under-enumeration in the survey being automatically compensated for by the weighting process.

Non-response bias

There are two main reasons for non-response in the LFS. One is the inability of interviewers to contact one or more persons in a household. The other is that some persons refuse to respond. Non-response bias will occur if persons not included in the labour force estimation process have significantly different labour force characteristics to those who do respond. While any non-response bias will have an effect on data released from the survey, the effect is minimised by careful management of the level of under-enumeration and non-response. In the Census, under-enumeration and non-response also contribute to non-response bias. Non-response bias is more significant in the Census, as the levels of under-enumeration and non-response to individual questions are higher and more difficult to control than in the LFS.

Non-sampling error

Both collections are also subject to non-sampling error. Non-sampling error may occur because of imperfections in reporting by respondents, errors made in collection, such as recording and coding data, and errors made in processing the data, such as faulty imputation methods. Non-sampling error is likely to be larger in the Census, due to the bigger scale of the operation, the reliance on self-enumeration, and its less frequent collection.

Sampling variability

Since the estimates in the LFS are based on information obtained from occupants of a sample of dwellings, they and the movements derived from them are subject to sampling variability. That is, the estimates may differ from those that would have been produced if all dwellings had been included in the survey. By contrast, the Census aims to enumerate the entire population and results are not subject to sampling variability. When comparing data from the LFS and the Census, the sampling variability of survey data should be taken into account.

CENSUS AND LABOUR FORCE SURVEY COMPARISON

<i>States and Territories</i>	<i>2001 Census of Population and Housing (a)</i>				<i>Labour Force Survey, Aug 2001 (b)(c)</i>		
	<i>Unemployed</i>	<i>Employed (d)</i>	<i>Not Stated (e)(f)</i>	<i>Unemployment Rate (g)</i>	<i>Unemployed</i>	<i>Employed (h)</i>	<i>Unemployment Rate</i>
	no.	no.	no.	%	no.	no.	%
NSW	213,196	2,748,396	236,686	7.2	191,300	3,051,000	5.9
VIC	151,859	2,082,216	156,367	6.8	152,000	2,303,100	6.2
QLD	140,748	1,568,864	113,364	8.2	145,700	1,702,200	7.9
SA	52,340	635,325	36,934	7.6	52,300	673,600	7.2
WA	67,485	828,781	56,326	7.5	64,900	938,200	6.5
TAS	20,526	182,522	13,447	10.1	22,000	192,700	10.2
NT	5,714	90,434	11,000	5.9	7,800	97,400	7.4
ACT	8,720	160,866	7,867	5.1	7,900	165,900	4.6
AUST (i)	660,588	8,297,404	631,991	7.4	644,000	9,124,200	6.6

Footnotes:

(a) The Census reference period for 'Labour force status' data was the week prior to 7 August 2001.

(b) Original data.

(c) This survey reference period was the two week period: Monday August 6, 2001 to Sunday August 19, 2001.

(d) Excludes 'Not in labour force', 'Not applicable' and 'Overseas visitor'.

(e) Comprises persons who did not state their labour force status.

(f) Not included in denominator for calculation of Unemployment rate.

(g) The denominator for these calculations is the sum of the data shown in the 'Unemployed' and 'Employed' columns, that is, 'Total labour force'.

(h) Only fully responding questionnaires contribute to survey estimates and any under-enumeration is automatically compensated for by the weighting process.

(i) Excludes Other Territories.

Further information about Australia's labour force statistics is available in [Labour Statistics: Concepts, Sources and Methods](#) (cat. no. 6102.0) which is available on the ABS website.

Census Papers

2001 Census Papers:

- 03/09 *2001 Census: Level, Main Field and Year of Completion of Highest Non-School Qualification*
- 03/06 *2001 Census: Occupation*
- 03/05 *2001 Census: Labour Force Status*
- 03/04 *2001 Census: Income*
- 03/03 *2001 Census: Computer and Internet Use*
- 03/02 *2001 Census: Housing*
- 03/01b *2001 Census: Ancestry - Detailed Paper*
- 03/01a *2001 Census: Ancestry - First and Second Generation Australians*
- 02/03 *2001 Census: Form Design Testing*
- 02/02 *Report on Testing of Disability Questions for Inclusion in the 2001 Census*
- 02/01 *2001 Census: Digital Geography Technical Information Paper*

1996 Census Working Papers:

- 00/4 *1996 Census Data Quality: Income*
- 00/3 *1996 Census Data Quality: Industry*
- 00/2 *1996 Census Data Quality: Qualification Level and Field of Study*
- 00/1 *1996 Census Data Quality: Journey to Work*
- 99/6 *1996 Census Data Quality: Occupation*
- 99/4 *1996 Census: Review of Enumeration of Indigenous Peoples in the 1996 Census*
- 99/3 *1996 Census Data Quality: Housing*
- 99/2 *1996 Census: Labour Force Status*
- 99/1 *1996 Census: Industry Data Comparison*
- 97/1 *1996 Census: Homeless Enumeration Strategy*
- 96/3 *1996 Census of Population and Housing: Digital Geography Technical Information Paper*
- 96/2 *1996 Census Form Design Testing Program*

A range of 1991 Census Working Papers, from 93/1 to 96/1 are also available.

These Papers can be accessed on the ABS web site at <<http://www.abs.gov.au>>. From the ABS home page, select **Census -> (Census Information) Fact Sheets and Census Papers -> (Fact Sheets and Information Papers) Census Papers.**

If you have further data quality queries, please contact the Assistant Director, Census Evaluation by telephone: (02) 6252 5611 or email: <joanne.healey@abs.gov.au>.