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JUST HOW MANY PEOPLE LIVE IN CENTRAL SYDNEY?

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This brief note examines population growth in central Sydney over the past two intercensal periods, highlighting the difficulties the Australian Bureau of Statistics has had in accurately tracking this growth in its annual estimates of resident population numbers and its 2001 Census operations. The paper is a reminder that published population data are not always what they seem.

Most readers of this journal will be aware that one of the striking demographic developments in metropolitan Sydney in recent years has been the surge in number of central city residents. After many decades of population loss, then a period of stabilisation in the 1980s and early 1990s, resident numbers in the heart of the city have exploded, the central Sydney Local Government Area (as geographically defined prior to the Carr Government's politically driven boundary changes that came into effect on 1 July 2003) expanded around fourfold between 1991 to 2001. Home for most of these new central city residents has been in one of the many new high rise apartment developments that have sprung up in the Central Business District (CBD) and neighbouring areas.

Tracking this rapid demographic expansion has proved a difficult task for the Australian Bureau of Statistics (ABS), in both its annual estimates of resident population numbers and its 2001 Census operations. This short note outlines some of these difficulties as they serve as a useful reminder of the, at times, 'rubbery' nature of population data. Demographic specialists will generally be aware of such problems. However, for non-specialist population data users, published figures can appear to have an accuracy that goes unquestioned and encourages their uncritical acceptance and use.

SYDNEY LGA — ESTIMATED RESIDENT POPULATION (ERP) CHANGE

(a) 1991-1996

For example, this period saw the start of the surge in central city resident numbers, the ABS' final ERP figures¹ indicating a near doubling of numbers in the Local Government Area (LGA) over the five years: from 7,281 at mid-1991 to 13,846 at 30 June 1996. At the time, though, this spectacular demographic growth went essentially unnoticed, the preliminary estimate for 1996 being put at just 7,950,² suggesting an increment of merely 669 for the five years. The large difference between the preliminary and final 1996 estimates was not without a little irony in that the Bureau's Sydney Office is located in the heart of the LGA.

Once 1996 Census results became available the ABS, as per normal went back and revised its intercensal figures, recognising that very substantial growth had clearly occurred. The surge in numbers was placed as beginning in 1993-94 (tying in with a sudden increase in dwelling unit approvals the preceding year), accelerating even a little faster in 1994-95, and then slowing down somewhat over 1995-96 (Table 1).

In hindsight it is a little surprising that the 1992-93 jump in dwelling unit approvals, published in mid-1995,³ did not get picked up on in the preliminary

Table 1: Preliminary and final Estimated Resident Population (ERP), figures, Sydney local government area, 1991 to 2001

Year (ending 30 June)	Preliminary ERP	Final ERP
1991	9,900*	7,281
1992	7,150	7,612
1993	7,250	7,586
1994	7,100	9,540
1995	7,400	12,350
1996	7,950	13,846
1997	15,869	16,501
1998	19,913	20,966
1999	22,773	24,101
2000	24,907	26,555
2001	26,912 and 31,788 (Revised)	28,728

Sources: Australian Bureau of Statistics, *1996 Census of Population and Housing: Population Growth and Distribution, Australia*, Cat. no. 2035.0, 1998; ABS, *Census of Population and Housing: Population Growth and Distribution, Australia 2001*, Cat. no. 2035.0, 2003; ABS, *Estimated Resident Population of Statistical Local Areas New South Wales*, Cat. no. 3210.1, various issues; ABS *Regional Population Growth, Australia and New Zealand*, Cat. no. 3218.0, various issues; ABS *Population by Age and Sex, New South Wales*, Cat. no. 3235.1, various issues
 * The high 1991 preliminary estimate stems from an overestimation of Sydney LGA's remaining population when South Sydney LGA was formed and excised from the Sydney LGA on 1 January 1989

1994 ERP calculations being done at the same time. Likewise, it is surprising that the continuing large flow of dwelling unit approvals in the following years did not flash on the demographic radar screen for the preliminary 1995 and 1996 ERP figures. Small increases were factored into those ERP releases, but nothing in line with what was occurring on the dwelling front. The uncertainty about the number of dwelling approvals actually translating into completed and occupied units is obviously a factor here. In turn, estimating occupancy ratios adds a further uncertainty. As the ABS could fairly say, it is also easy for commentators to critique from the sideline after the event, but monitoring of this nature is valuable for the lessons it offers for future ERP

calculations.

With such large underestimation of ERP any flow-on calculations incorporating the preliminary figures obviously gave misleading impressions. For example, combining the preliminary ERP figures and death statistics for 1995⁴ would have indicated the LGA to have one of the highest crude death rates within the metropolitan area. In fact, the advantage of post-1996 Census hindsight subsequently showed the LGA's death rate to be below the Sydney Statistical Division average. Likewise, any population-based resource allocation planning for the LGA would have also been distorted. A comparison of the preliminary 1995 ERP age distribution and the final 1996 figures indicates that the greatest underestimation was in the younger age groups (5-29 years).

(b) 1996-2001

Comparison of preliminary and final ERP figures over this most recent intercensal period reveals a greater concordance between the two data sets. The end of the period, though, produced two surprising demographic results for the LGA: the first, a highly inflated usual residents count from the Census; the second, a resulting 'way out' revised preliminary 2001 ERP figure.

In respect of the ERP, the preliminary figures released by the ABS over the course of the five years charted continuing solid growth in the LGA. In the Bureau's eyes resident numbers rose to just under 27,000 when preliminary estimates for 2001 were first released⁵ on 19th February 2002. See Table 1. Five months after this figure was published, however, a revised preliminary total was

released on 25th July 2002. This showed that numbers had increased by almost 5,000 persons.⁶ See Table 1. No explanation of the dramatic upwards revision was offered. The reason though can be tracked to the first surprising demographic result mentioned above, that is, an anomalous usual residents population count from the 2001 Census.

As all population specialists will be aware, the ERP is based on Census usual residence counts, adjusted for three important factors: census net underenumeration, Australian residents who are temporarily overseas, and the difference between the Census (early August) and ERP (end of June) compilation dates. The first two of these factors outweigh the effect of the third and thus the expectation is that ERP figures will be greater than usual residence counts, albeit only by small margins in the case of many areas.

The revised preliminary 2001 ERP figures released in July 2002 were based on results of the 2001 Census of Population and Housing. For the vast bulk of the local areas across Australia these census-informed ERP statistics would certainly have been closer to the 'true' ERP than the ones released five months earlier which did not have the benefit of census results guiding their calculation. Sydney LGA, however, was a marked exception, due to what can now be seen to be a substantially inflated usual residents population count. That count was 30,858 persons, almost 4,000 more than the initial ERP estimate. With the adjustments mentioned above added in, the ABS arrived at a revised preliminary 2001 ERP figure of 31,788 for the LGA.

Subsequent consideration of the usual residents count pointed to a substantial inflation in numbers due to System Created Records (SCRs). These records

are created during Census processing for people for whom no Census form has been received and whom the Census collector believes have been missed. The bulk of such cases occur where a collector is unable to contact a household, but believes the dwelling was occupied on Census Night.⁷ For Australia as a whole SCRs accounted for 2.2 per cent of the final 2001 Census count, up from 1.4 per cent in the 1996 Census. In NSW the SCR count was 2.7 per cent, totalling 173,878 persons.⁸ The ABS does not release SCR data for individual LGAs, but it can be confidently taken that the percentage for Sydney LGA was several times greater than the State average.⁹

The nature of much of the new dwelling stock in central Sydney makes the area particularly prone to contact difficulties. Many of the high rise apartment developments are security buildings and pose access problems for Census collectors. (Similar situations are found in the inner section of Melbourne LGA and in Surfers Paradise which likewise showed up with larger 2001 usual resident census counts than ERPs, though not to the same magnitude as in central Sydney. A few instances of usual resident counts exceeding ERP figures were also recorded in other geographic contexts, the most marked case being Snowy River LGA in southeastern New South Wales.)

Other inflation of the usual residents counts is believed to have occurred through some people being imputed as enumerated at home, when they should have been classified as Australian Visitors or Overseas Visitors.¹⁰ As well, an ABS review in September 2002 of procedures for measuring undercount found the imputation model employed over-estimated the number of people living in 'non-contact' dwellings.¹¹

Taking these various considerations

on board ultimately saw the ABS produce a final 2001 ERP figure for Sydney LGA of 28,728 persons, 3,060 below the previously published total. 340 of the difference between this final ERP figure and the usual resident count was attributed to migration inflow over the five weeks between June 30 and the Census date.¹²

In so far as can be gathered from a comparison of the preliminary 2000 ERP figures with the final 2001 tabulations, the main groups that had slipped into central Sydney 'under the radar' were persons aged 15-24 and 50-64. Counter to the underestimation in these groups, females aged 25-29 had been overestimated by around 300.

CONCLUSION

The central Sydney experience is thus a good example of the difficulties of counting and estimating population numbers in some geographic situations. While it is clearly an extreme case, it is a useful reminder that published population data are not always what they seem. With the likely expansion of apartment living, especially high rise forms, in Australia's cities it is probably also a pointer to greater difficulties in future Census data collection and intercensal population estimation for the Australian Bureau of Statistics.

References

- ¹ Australian Bureau of Statistics (ABS), *1996 Census of Population and Housing: Population Growth and Distribution, Australia*, Cat. no. 2035.0, 1998
- ² ABS, *Estimated Resident Population of Statistical Local Areas New South Wales*, Cat. no. 3210.1, 1997
- ³ ABS, *New South Wales Regional Statistics*, Cat. no. 1304.1, 1995
- ⁴ ABS, *Demography New South Wales, 1995*, Cat. no. 3311.1, 1997
- ⁵ ABS, *Regional Population Growth, Australia and New Zealand*, Cat. no. 3218.0, 19 February 2002
- ⁶ *ibid.*, 25 July 2002
- ⁷ Other cases where imputation occurs are where people state they will return the Census form by mail, but do not do so, and those where people in a dwelling refuse to complete a Census form.
- ⁸ ABS, *Information Paper: Census of Population and Housing, Data Quality - Undercount. Australia 2001*, Cat. no. 2940.0, 2003
- ⁹ An indication of SCRs for LGAs can be deduced from the 'not stated' component of several of the Census Basic Community Profile (BCP) tables (for example, B06, B07, B08). Persons forgetting to or deliberately not filling in Census questions are obviously also included in the 'not stated' category, but where 'not stated' totals form a high percentage of the total population they are suggestive of a significant SCR element. For example, for Sydney Statistical Division as a whole the 'not stated' component in BCP tables B06, B07 and B08 was 6 to 7 per cent, whereas for Sydney LGA it was 27 per cent.
- ¹⁰ ABS, *personal communication*
- ¹¹ ABS, *op. cit.*, Cat. no. 2940.0, 2003
- ¹² ABS, *personal communication*