

---

Charles Darwin University

## Changes in net interstate migration (NIM) patterns to the Northern Territory volume, geography and basic demography

Carson, Dean

*Published in:*  
Research Briefs

Published: 01/01/2016

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication](#)

*Citation for published version (APA):*

Carson, D. (2016). Changes in net interstate migration (NIM) patterns to the Northern Territory: volume, geography and basic demography. *Research Briefs*, (RB03), 1-12.  
<http://www.cdu.edu.au/sites/default/files/research-brief-2016-03.pdf>

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

### Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



# Research Brief

Issue 03, 2016

## **Changes in net interstate migration (NIM) patterns to the Northern Territory: volume, geography and basic demography**

**Dean Carson**

Demography & Growth Planning, Northern Institute

[dean.carson@cdu.edu.au](mailto:dean.carson@cdu.edu.au)

## RESEARCH AIM

*This research examined patterns in net interstate migration (NIM) to the Northern Territory (NT) since the 1960s. NIM is the difference between in-migration from other States and the ACT and out-migration to those places. 'Positive NIM' means in-migration exceeds outmigration. This research follows a similar exercise looking specifically at in-migration (Research Brief 02-2016). The aim was to identify key trends which could explain the current period of negative NIM (since 2010) and provide some insights into what could be done to improve the NIM situation.*

## KEY FINDINGS

- An increasingly volatile environment for interstate migration has emerged in the NT over the past two decades, with periods of out-migration in particular becoming more pronounced.
- There has been no single pattern of NIM that foretells a change in a NIM 'era'. Moving from positive to negative eras (and vice versa) can occur as a result of changes in both in- and out-migration. Increased in-migration may even be associated with increasingly negative NIM. Therefore, forecasting changes in NIM based on past behaviour is very difficult.
- Victoria and, to a lesser extent, New South Wales have been consistent sources of positive net migration since the 1970s, but in the past decade, their contribution has declined. This follows a similar path observed with South Australia and Western Australia in the early 2000s.
- The NT appears to have become increasingly marginalised in the interstate migration 'market', having declining NIM relationships with all States.
- Changing economic and labour market conditions may be reflected in the relative NIM performance of different parts of the NT, with remote regions being particularly vulnerable.
- The 'key target' age group of 15-29 year olds has trended towards lower positive (and even negative) NIM since the 1980s, and no other age group has compensated for this decline.
- There has been a notable gendering of NIM since the 1980s, with the NT now performing better with males than with females. Such a male bias has been shown to lead to increased demographic instability over time.

## I. Background

Interstate migration has been the most variable of the components of change (which also include overseas migration and natural increase) in the Northern Territory population for the past 30 years. In the 28 years between 1986 and the last year of available data (2014), more people left the NT for interstate than arrived from interstate; this includes every year since 2010. This net interstate migration (NIM) deficit ultimately threatens the Territory's prospects for continued growth, and has important implications for our political and economic systems (Wilson et al., 2005). This brief is the second in a series examining how interstate migration patterns have changed over the past several decades, with a view to understanding the key trends and their impacts on the NT. Ultimately, the research can shed light on how the NT could more effectively compete in the interstate migration 'market'.

This brief focusses on net migration, and particularly changing migration relationships with the States and ACT, age and sex patterns, and the net outcome of patterns of migration to different parts of the NT. It begins by examining changes in the volume of interstate migration in Australia over the past 50 years, and the implications of those changes for the NT. It then looks at the extent to which in-migration and/or out-migration have determined the net migration position over time. Relationships with individual States and the ACT, and within age and sex groups and regions within the NT are then explored.

## 2. Methods

Data for this brief are drawn from each Census since 1971, and estimates of interstate migration that accompany Australian Bureau of Statistics population estimates (Australian Bureau of Statistics, 2014). The latter has included information about State/Territory of departure and arrival, and age and sex of migrants since 1997.

The variables examined include –

- Number of migrants;
- State of origin of migrants;
- Age of migrants (5 year brackets);
- Sex of migrants; and
- Region of migration to or from the NT (Greater Darwin, Central Australia and the Remainder).

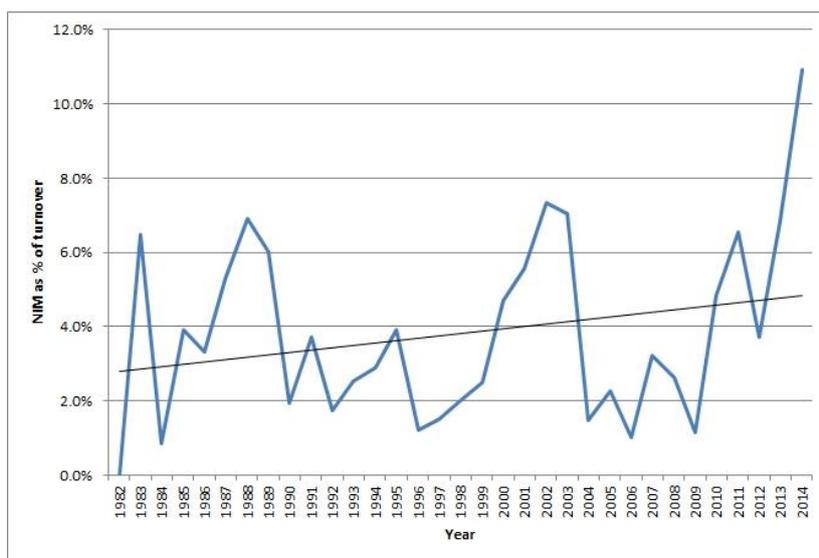
Key findings are highlighted in each sub-section.

### 3. Results

#### 3.1 A Question of Volume?

Since the mid 1990s, Australians have become less likely to move interstate. Interstate movements peaked at 4.3% of Australia’s total population in 1989, and were around 4% through the 1990s, but have since declined to about 3% in the 2010s. Since the early 1980s, following a period of demographic turbulence associated with Cyclone Tracy (1974) and self-government (1978), movements in to and out of the Northern Territory have accounted for about 5% of national turnover. Ultimately, since the mid 1990s, the number of people moving into and out of the NT has remained between 30 000 and 35 000 each year. Figure 1 additionally shows there has been a steady increase in the difference between numbers of in-migrants and out-migrants each year. The growth has been particularly strong for periods of net out-migration (for example, 1986-1994 compared with 2010-2014 in Figure 1).

**Figure 1:** Net Interstate Migration (NIM) to the NT as a percentage of Interstate Movements to and from the NT, 1982-2014



Source: Australian Bureau of Statistics (2014).

A more volatile environment for interstate migration has emerged in the NT.  
***Outmigration eras may be becoming more difficult to contain.***

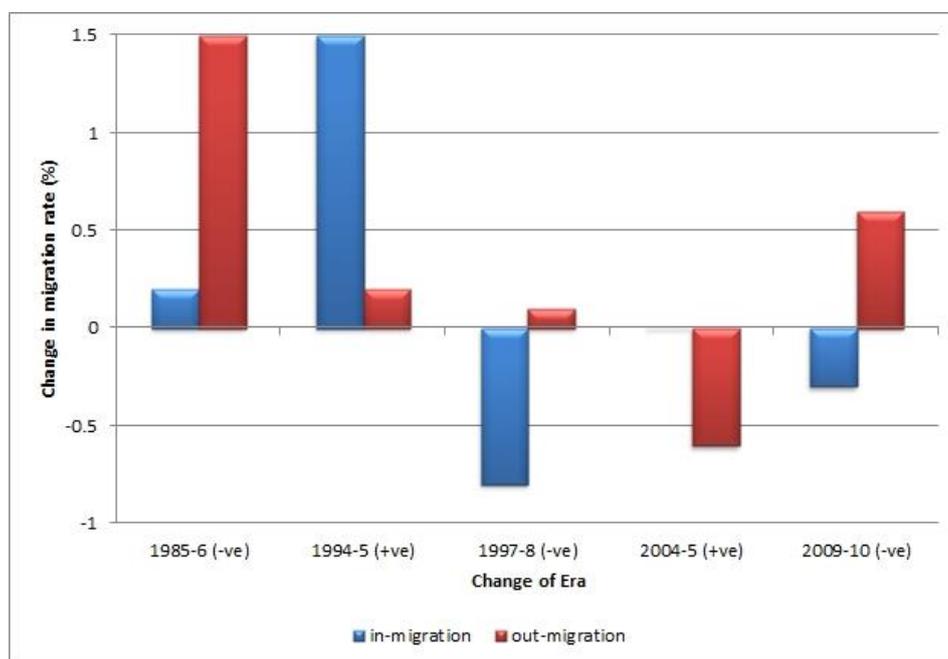
#### 3.2 In-migration... or out-migration?

A previous research brief (02-2016) identified five distinct ‘eras’ of NIM since 1986. These were an initial negative NIM era from 1986-94, a positive era from 1995-97, a negative era from 1998-2004, a positive era from 2005-9, and a negative era from 2010-14. Transition from one era to the next could theoretically result from an increase or decrease in in-migration or out-migration or both. Overall, there was a weak correlation ( $r=0.26$ ,  $p>0.05$ ) between in-migration and net migration between 1986 and 2014, but no such correlation between out-migration and net migration. This suggests that changes in in-migration have been the main

driver of NIM. However, examination of the years in which NIM eras changed from positive to negative, and vice versa, reveals a more complex picture.

Figure 2 shows the change in in- and out-migration rates between the last year of one era and the first year of the next era. The figure identifies whether the change was to a period of net negative (-ve) or net positive (+ve) NIM. For example, between 1985 and 1986, in-migration rates increased by 0.2% (from 9.3% to 9.5% of the NT population), while out-migration rates increased by 1.5% from 8.4% to 9.9%. So, while both in- and out-migration increased, the change in era was clearly driven by the much more dramatic increase in out-migration.

**Figure 2:** Changes in in- and out-migration rates at each change in NIM era, 1985-2010.



Source: Australian Bureau of Statistics (2014).

Similarly, the change from negative to positive NIM between 1994 and 1995 was driven by a dramatic increase in in-migration, even though out-migration also increased. The 1997-8 change in era saw out-migration change only by 0.1%, but in-migration declined more substantially. Likewise, the change from 2004-5 was driven by decreased out-migration while in-migration stayed the same. The most recent change in era resulted from both a decrease in in-migration and an increase in out-migration.

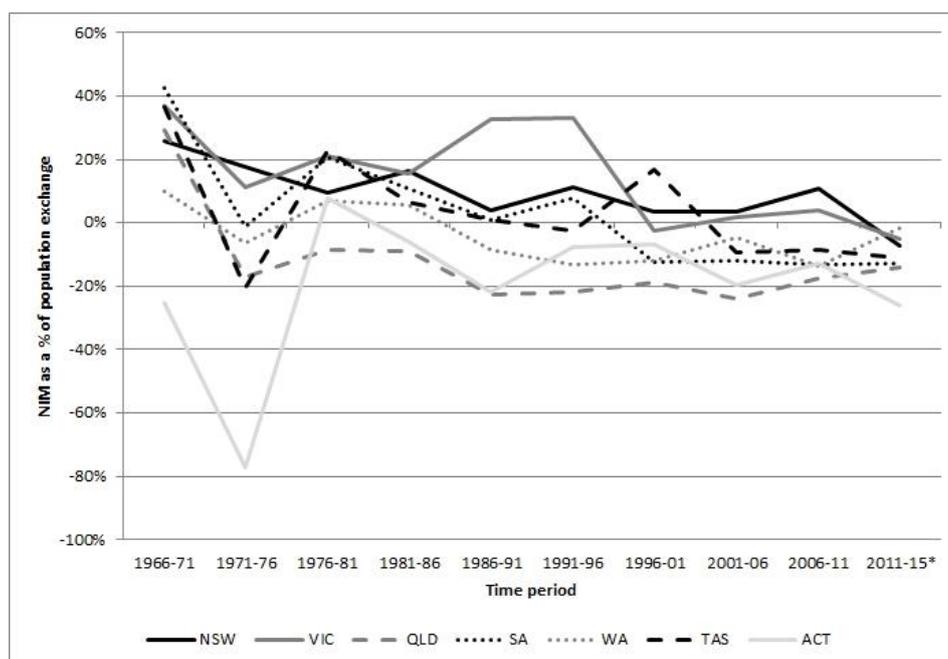
***There has been no single pattern of NIM that foretells a change in NIM ‘era’.  
Forecasting changes in eras just by observing NIM is therefore very difficult.***

NIM emerges as the result of a balance between recruiting new migrants and retaining existing population, but each change in era has been introduced by a different change in the balance. This means that it is difficult to forecast changes in eras just by observing changes to in- or out-migration. Negative NIM has accompanied both rising in-migration (1985-6) and falling in-migration (2009-10), and positive NIM has occurred even when out-migration has increased (1994-5).

### 3.3 Relationships with States and the ACT

While South Australia was the most important source of in-migrants to the NT in the 1970s and 1980s, Queensland and Victoria have provided an increasing proportion of the NT's interstate in-migrants in more recent times (Research Brief 02-2016). When it comes to net migration, however, there has been a consistently positive migration relationship (i.e. the NT received more migrants than it lost) with Victoria and New South Wales across the whole period, and a consistently negative relationship with Queensland and the ACT. The NT had generally positive relationships with South Australia and Western Australia until the mid-1990s, but has had negative relationships since then. Figure 3 reveals the period 2011-2015 is on track to become the first since 1971 when the NT has had a negative relationship with all States and the ACT. This observation must be accepted with some caution, as the previous periods present data drawn from the Census and referencing five years, while the 2011-15 period has been constructed from interstate migration estimates, and references three and a half years. Nevertheless, the graph does show States which were positive contributors to NT NIM in the 1980s and 1990s have contributed less in more recent times, while States that were negative contributors in the 1980s, have remained negative contributors throughout.

**Figure 3:** Net NIM position (as percentage of migrants exchanged) of each State and the ACT, 1971-2015.



Source: Australian Bureau of Statistics, Census of Population and Housing (1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011) and Australian Bureau of Statistics (2014).

It is not possible to directly match Census data to the eras of positive and negative NIM, however, it is interesting to note there were small increases in net interstate migration from New South Wales for 1991-96 (which included the start of the 1995-7 positive era) and 2006-11 (which included much of the 2005-10 positive era). This was also apparent for Victoria, but there was also high positive NIM from that State in 1986-91, which included the first five years of the 1986-2004 negative era. There was a large decline in NIM from Victoria for the 1996-2001 period, which appears to be the most dramatic change for that time which covered the transition from the 1995-7 positive era to the 1998-2004 negative era. Interestingly in the case of Victoria, volumes of both in-migrants and out-migrants have grown steadily since 1971, with the exception of

a spike in in-migrants in 1991-6. Since 1996, however, growth in out-migrants has far exceeded growth in in-migrants.

***Victoria and, to a lesser extent, New South Wales, have been consistent sources of positive net migration since the 1970s, but in the past decade, their contribution has declined. This follows a similar path as observed with south Australia and Western Australia which went from positive contributors in the 1980s and early 1990s to negative contributors by the 2000s.***

Research from the 2006 Census (Carson, 2011) highlighted the challenges the NT faces in trying to secure consistent sources of migrants given its distance from the dominant migration flows that tend to be centred on the larger capital cities. While there might be some advantage in not having a reliance on a single source market (as is common in rural and remote areas within other States), a marketplace which is too fragmented makes it difficult to influence migration flows. Figure 3 seems to suggest the NT has become increasingly marginalised in the national interstate migration market, and that this process started well before the current negative NIM era.

***The NT appears to have become increasingly marginalised in the interstate migration market.***

### **3.4 NIM in NT regions**

Darwin has increased its share of in-migrants over the past 20 years, largely at the expense of Central Australia (Research Brief 02-2016). From a net point of view, however, both Darwin and Central Australia have gone from positive positions (having more interstate migrants arrive than depart) in the 1980s to consistently negative positions since 1991. Darwin's net migration loss for the period 2006-11 (2%) was slightly less than that of Central Australia (3%). In contrast, the remainder of the NT (which features key locations such as Tennant Creek, Katherine and Nhulunbuy) has had small positive NIM for all intercensal periods except 1991-96, and a positive NIM of 2% for the 2006-11 period. This is likely to be explained in large part by an increase in-migration to Nhulunbuy accompanying upgrades in the alumina smelting operations there (Carson & Carson, 2014) and in-migration associated with the Northern Territory Emergency Response commencing in 2007 (Carson & Carson, 2013). The more recent suspension of smelting activities in Nhulunbuy, general downturn in the mining industry (most prominent as an employer in the more remote parts of the NT), and the stabilisation of workforce demands for remote Indigenous programs are likely to see a decline in migration to the remainder of the NT. There are also concerns about the increasing use of fly-in fly-out labour even in public service sectors such as health and education (Carson et al., 2013; Wakerman et al., 2012). Such economic and labour market changes may contribute to a sustained period of negative NIM, especially in more remote areas.

***Changing economic and labour market conditions may be reflected in the relative NIM performance of different parts of the NT.***

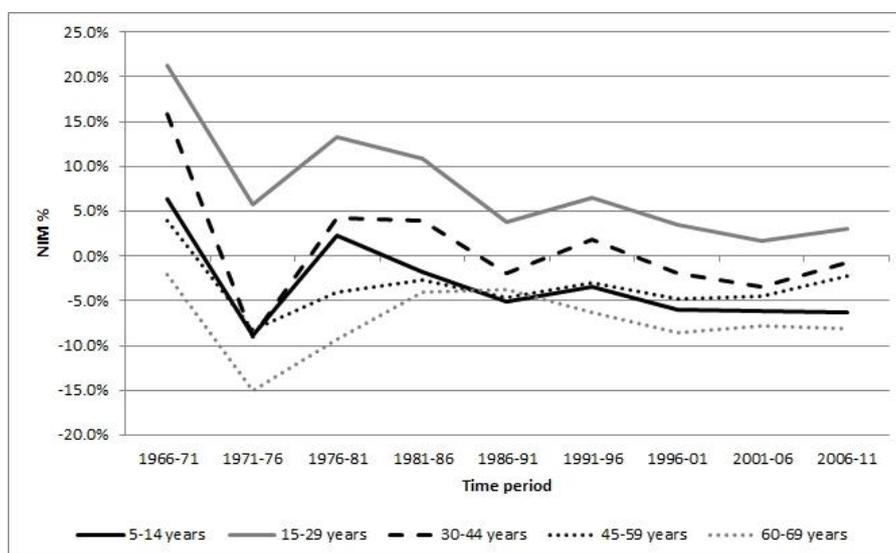
### 3.5 Age Characteristics

In the 2014 calendar year, the NT experienced net out-migration of every age group with the exception of 20-24 years, which had a small (1%) positive NIM. In contrast, there was negative NIM of 2.7% for children aged 0-4 years, and for people aged between 60 and 69 years. Analysis of age patterns in each Census since 1971 reveals five age classes that appear to have different levels of NIM (Figure 4) –

1. Children (0-14 years) – increasing net out-migration;
2. Young adults (15-29 years) – generally maintaining positive NIM;
3. Early career adults (30-44 years) – usually negative NIM, but highly variable, and very small negative NIM and even positive NIM during periods of overall positive NIM;
4. Later career adults (45-59 years) – reasonably stable low net out-migration; and
5. Older adults (60-69 years) – generally high net out-migration.

Since at least 1981, the patterns of NIM for the first three of these age groups have mirrored one another, decreasing for the 1986-91 period, and increasing for 1991-96 and 2006-11. Overall, each age group has had a declining NIM position, with the possible exception of the 45-59 year group, which has stayed within the -2% to -4% range since 1976-81.

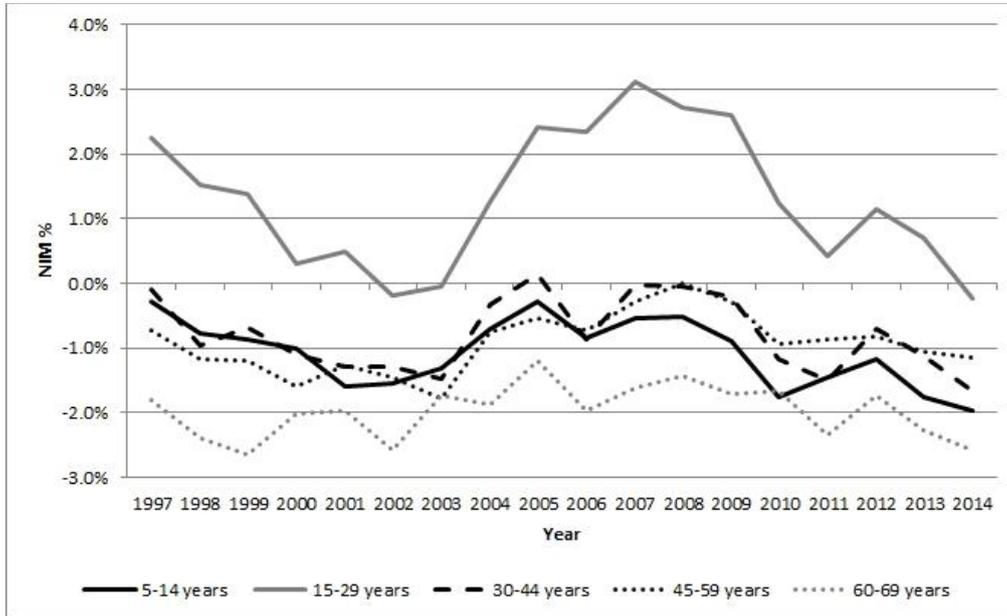
**Figure 4:** NIM by age group and five year time period 1966-71 to 2006-11.



Source: Australian Bureau of Statistics, Census of Population and Housing (1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011)

Figure 5 (from first available annual data in 1997) shows even more starkly how patterns for the younger age groups mirror one another, but also suggests that patterns for the 45-59 year group are becoming more aligned with those of the other age groups. Of particular note are the coinciding declines in NIM position at the end of the 1995-7 positive NIM era, and the rise and then fall around the 2005-9 positive era. The NT continues to rely heavily on its attractiveness to young adults, but that attractiveness may be decreasing, and there is only marginal evidence that losses in NIM for this group can be even partially compensated for by an improving position of the 45-59 year group.

**Figure 5: Annual NIM by age group, 1997-2014**



Source: Australian Bureau of Statistics (2014).

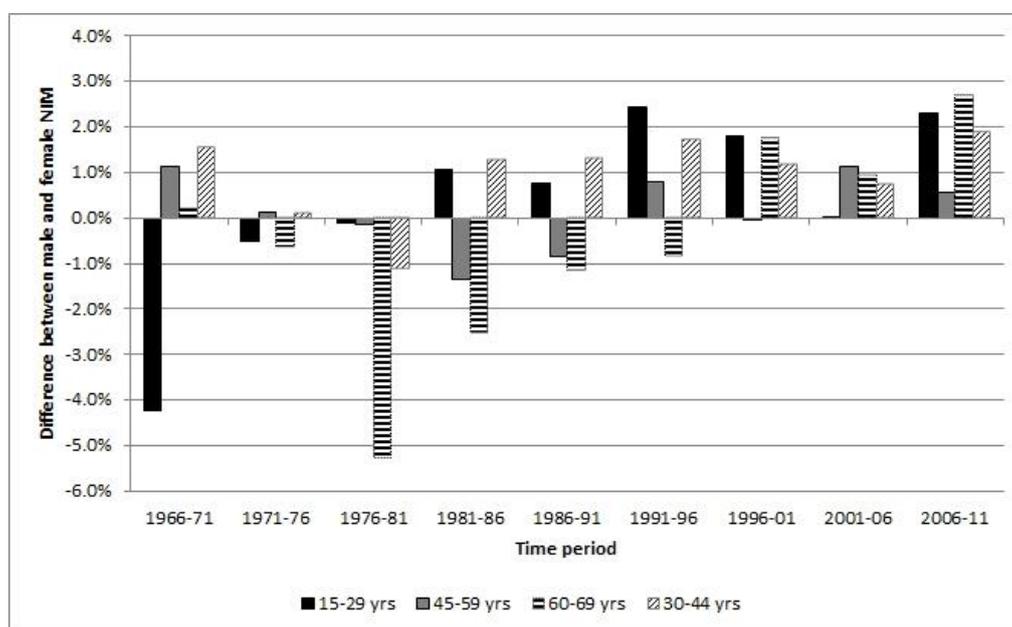
***The ‘key target’ age group of 15-29 year olds has trended towards lower positive (and even negative) NIM since the 1980s, and no other age group has had a substantial compensating effect.***

It has been noted elsewhere (Martel et al., 2013) that there have been increases in in-migration rates of older people, but these have been matched (and exceeded) by increases in rates of out-migration.

### 3.6 Gender balance

There has been a notable gendering of NIM since the 1970s. Figure 6 shows the difference between male and female NIM measured at each Census and for the adult age groups considered above. Bars below the line indicate female NIM was higher than male NIM. This was generally the case in all age groups at the start of the period, but male NIM was higher in all age groups in the three most recent Census. The gender ‘turnaround’ started for the 15-29 years and 30-34 years age groups at the 1986 Census, but not until the 1996 and 2011 Census for the 45-59 years and 60-69 years age groups respectively.

**Figure 6:** Difference between male and female NIM, 1971-2011



Source: Australian Bureau of Statistics, Census of Population and Housing (1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011)

***There has been a substantial gendering of NIM since the 1980s, with the NT now performing better with males than with females. Such a male bias has been shown to lead to increased demographic instability over time.***

The gendering of migration to the NT, and of the NT population overall, has been consistently raised as an issue affecting demographic development (Taylor & Carson, 2014). Understanding how to address gender imbalances, particularly in the key young adult age groups, is essential if the NT is to implement effective long-term population growth strategies.

## 4. Further research

The first brief in this series proposed seven areas for further research (Research Brief 02-2016). In addition to the examination of NIM conducted here, there remains –

1. Investigating changes in the NT labour market and their impact on interstate migration;
2. Investigating correlations between national economic and social indicators and NT NIM;
3. Identifying events that might have led to changes in trends observed (such as the gendering of NIM observed here);
4. Analysing the characteristics of migrants to and from different regions within the NT;
5. Preparing a research plan for analysis of 2016 Census data (due in 2017);
6. Comparing patterns observed in the NT with patterns observed in other 'remote' jurisdictions particularly in the Arctic north and European northern periphery.

This brief has re-emphasised the importance of understanding the relationship between national and NT economics and NIM, regional differences in performance, and examining what has led to changing age and sex patterns.

## References

- Australian Bureau of Statistics (2014). *3105.0.65.001 Australian Historical Population Statistics, 2014*. Canberra: Australian Bureau of Statistics. Retrieved from:  
<http://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/3105.0.65.001?OpenDocument>.
- Australian Bureau of Statistics. *Census of Population and Housing data for 1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011*. Available at: <http://www.abs.gov.au/census>
- Carson, D.A., & Carson, D.B. (2014). Mobilities and path dependence: Challenges for tourism and 'attractive' industry development in a remote company town. *Scandinavian Journal of Hospitality and Tourism*, 14(4), 460-479.
- Carson, D.B. (2011). Skilled labour migration flows to Australia's Northern Territory 2001-2006: Beyond periphery? *Australian Journal of Labour Economics*, 14(1), 15-33.
- Carson, D.B., & Carson, D.A. (2013). Mobilising labour in remote 'boom' towns for economic diversification: The case of Tennant Creek, Australia. *Inner Asia Studies in the Humanities*, 2, 31-44.
- Carson, D.B., Porter, R., & Heidelbeer, D. (2013). *The human geography of long distance commute work in remote Australia – who is where and why?* Paper presented at the Contemporary Issues in Long Distance Commute Work in the Extractive Industries conference, Vienna.
- Martel, C., Carson, D., & Taylor, A. (2013). Changing patterns of migration to Australia's Northern Territory: Evidence of new forms of escalator migration to frontier regions? *Migration Letters*, 10(1), 101-113.
- Taylor, A.J., & Carson, D.B. (2014). It's Raining Men in Darwin: Gendered Effects from the Construction of Major Oil and Gas Projects. *Journal of Rural and Community Development*, 9(1), 24-40.
- Wakeman, J., Curry, R., & McEldowney, R. (2012). Fly in/fly out health services: The panacea or the problem? *Rural and Remote Health*, 12(2268), online.

Wilson, T., Beneforti, M., & Barnes, T. (2005). Population statistics and the number of House of Representatives seats for the Northern Territory. *People and Place*, 13(4), 23-33.