



# Monitoring the Norfolk Island Economy

**A report prepared for the Department of Infrastructure, Transport, Cities  
and Regional Development**

**26 August 2019**

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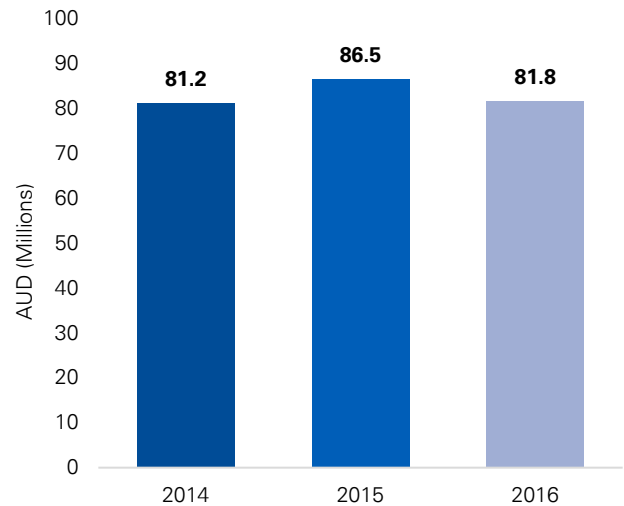
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# Key Findings

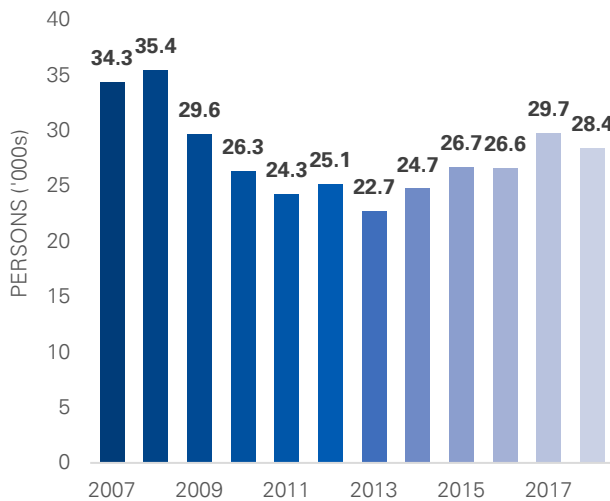
Norfolk Island’s Gross Territory Product (GTP), excluding investment, was estimated to have been just under \$82 million in FY2016 (the most recent year for which there is robust data available).<sup>1</sup> This is down slightly from the FY2015 GTP estimate, and higher than the FY2014 estimate (see Figure 1). These small year-to-year fluctuations, borne out of changes in the number of visitors, government expenditure and the level of net exports, are not unusual for the Norfolk Island economy, as a small, remote economy which is more likely to see regular year-to-year fluctuations.

**Figure 1: Gross Territory Product (GTP) (excluding investment) for Norfolk Island (current prices, latest available years)**



Source: KPMG analysis

**Figure 2: Total visitor arrivals by calendar year**



Source: Norfolk Island Regional Council, ABF

Understanding the components of the GTP estimate highlights that tourism is a key source of economic activity for Norfolk Island – with around 40 per cent of the Island’s activity related to tourism. Its near 30,000 visitors in FY2016 generated approximately \$33 million in tourist exports.<sup>2</sup> For 25 years (to 2016), 40 per cent of the Island’s labour force worked in wholesale, retail trade, accommodation and food services. Similarly, 12 per cent of the population held a degree related to management, commerce, food, hospitality and personal services in 2016.

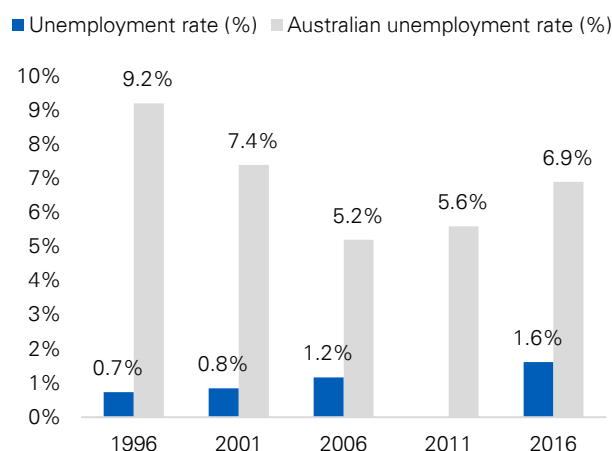
<sup>1</sup> Noting that, because of data limitations, the GTP is an estimate only. Improved access to data and additional data collection has been recommended to assist in refining this estimate going forward

<sup>2</sup> Tourist exports relate to the expenditure in the Norfolk Island economy by other Australian and international tourists.

Unemployment does not appear to be a major concern in Norfolk Island, as the unemployment rate (calculated from Census data) was below 2 per cent in each Census year (see Figure 3). This is comparably better than the mainland, at 6.9 per cent at the time of the 2016 Census.

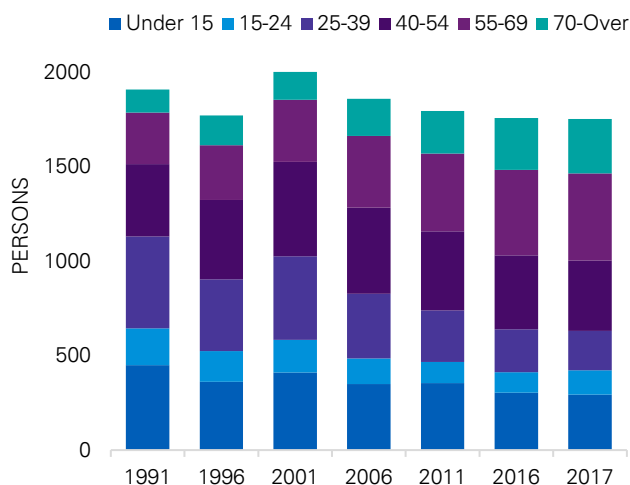
This is also supported by the very low numbers of people collecting unemployment benefits in Norfolk Island, relative to Australia.

**Figure 3: Unemployment rate on Norfolk Island (Census years)**



The data from the 2011 Census was insufficient to calculate an unemployment rate  
 Source: Norfolk Island Census, Australian Census

**Figure 4: Population of Norfolk Island by age (Persons)**



Source: Census; ABS

One of the key constraints facing Norfolk Island is its small size and remote location, meaning economies of scale are rare, if not impossible, to find. The ordinarily resident population on the island has experienced a slow decline over the past two decades to the 2018 level of 1,756 people. This also has a demographic element, with significant growth in the older population on Norfolk Island (55-69 and 70+), and as residents in the younger age ranges seek other opportunities (study or employment) away from the island.



# 1. Background

This report has been commissioned by the Department of Infrastructure, Transport, Cities and Regional Development (the Department) to establish an economic baseline for Norfolk Island. It is envisaged that this baseline may then be used as an ongoing tool to assist in monitoring economic performance and trends, and to help guide policy and decision-making. This baseline has been developed through data collection and review of previous work on the Norfolk Island economy, performed by both KPMG and other organisations.

Norfolk Island is an external territory of Australia, which maintained a model of self-government from 1979 until reforms were enacted in 2016. An outcome of these reforms is that residents of Norfolk Island are now eligible for Federal Government services such as Medicare and welfare payments through the Departments of Human Services and Social Services, respectively. The full impact of this change is still flowing through the economy. This work does not attempt to assess the impact of the reforms on the Norfolk Island economy.

Another key change, which will benefit the monitoring of the Island's economy going forward, is in terms of data collection. Norfolk Island is now part of the Australian Census (since 2016), and this has provided a rich source of population data.

However, the nature of Norfolk Island also presents some challenges to this data exercise. As the Island is very small and remote, the sample size for data is limited and presents issues with regard to confidentiality as well. These challenges mean that the results presented are at a relatively high level, and are subject to caveats surrounding data. Recommendations around future data monitoring have been provided at the end of this report.

Across the board, the development of a Norfolk Island economic baseline has highlighted the role played by tourism and the impact that a fall in visitor numbers since the Global Financial Crisis has had on the Island's economy. The baseline also provides some insights into important variables for the impact of tourism, such as the length of stay for visitors and the amount which they spend during their stay.

## 2. Data collection

To establish the economic baseline, the collection of several data sets were required on the following areas of the Norfolk Island community:

- Population;
- Business and industry;
- Employment and households; and the
- Macro-economy.

Using data from each part of the local economy, estimates of the Island's Gross Territory Product (GTP) were reported from the expenditure side. In the absence of reliable data on investment, estimates of GTP were based on private final demand, government expenditure and trade (including tourism exports).

While Appendix 1 provides a summary of the data utilised or calculated in the study, the following sections speak more closely to the rationale behind the inclusion of data. In light of limitations in the available data on Norfolk Island, the section also makes reference to potential data alternatives where a series appears to have been discontinued.

*All references for data listed here are reported in Appendix 1.*

### 2.1. Population data

The characteristics of the population in an economy can differ in a number of ways, which can materially impact economic trends. In the case of Norfolk Island, the population differs from the mainland, and other developed nations, with respect to size (total persons), age and education profile.

To assess these factors, data on the Norfolk Island population was gathered from both the Norfolk Island Administration Census, and most recently, the Australian Census and the Australian Bureau of Statistics (ABS). From these sources, the following population data were extracted:

- Ordinarily resident population (male, female, age groups);
- Estimated resident population (ERP);
- Persons by field of qualification; and
- Persons by highest level of education attained.

Total ordinarily resident population data was collected from 1991 to 2018. Data up to 2011 was sourced from the Norfolk Island Administration Census every 5 years, while data from 2016 to 2018 was taken from the annual ERP statistics reported by the ABS. Population by age was provided by all sources in consistent age categories. For simplicity, the study re-grouped the population by age into the following six categories: Under 15 years; 15-24; 25-39; 40-54; 55-69; and 70-over (see Appendix 2).

It is important to acknowledge the break in the series, brought about by changes in the governance model, which has invited questions related to the comparison of Norfolk Island Census data up to 2011 with that of the ABS ERP data from 2016 onward. While there may be some differences in collection methods between a census and the ERP, a crosscheck can be made with the 2016 ABS (not Norfolk Island) census and the ERP. This comparison found that the difference between both sources of resident population data for 2016 was marginal (Census – 1748 vs. ERP – 1757). Thus, it is likely that comparisons between the earlier Norfolk census years and the later ERP data will provide a reasonable understanding of actual trends. It is suggested that the ERP statistics are used

for future monitoring, given the ERP data is a reliable and more frequent source of information going forward (updated annually).

The ABS Census was also a useful source of information on the level of education and the field of qualifications held by the local community. Given substantial differences in the categories used across each Norfolk Island Census (prior to 2016), the study has focused on the most recent data available (ABS 2016).

On the basis of education level, the data identified persons by those with:

- Postgraduate Degree;
- Bachelor Degree;
- Graduate Diploma and/or Graduate Certificate;
- Advanced Diploma and Diploma level;
- Certificate III and IV; and
- Other (Certificate II and below).

For field of study, persons were grouped by the following areas:

- Natural and physical sciences;
- Engineering and related technologies;
- Agriculture, environmental and related studies;
- Education;
- Society and culture;
- Food, hospitality and personal services;
- Information technology;
- Architecture and building;
- Health;
- Management and commerce;
- Creative arts; and
- Mixed field programs.

## 2.2. Tourism data

Business activity on the Island is largely driven by tourism and related industries. To encapsulate this component of the economy, the following data was attained and/or derived:

- Tourist visits;
- Tourist length of stay;
- Tourist daily spend; and
- Tourist expenditure.

Information on inbound visitors was extracted from the Norfolk Island Regional Council's website and the Australian Border Force (post 2016 – provided to the Department). This data was comprehensive, ranging from FY1989 to FY2019 on a monthly basis. Monthly data on tourist length of stay was also found from FY2000 to FY2009; and FY2014 to FY2016. Using both visitation volume and length of stay, the study computed annual tourist bed nights on the Island (annual number of visits multiplied by average length of stay). For years with incomplete data (e.g. FY2010 to FY2013), a smoothed average was derived from actual values in the dataset (see Appendix 1).

A particular point of difficulty in the data collection related to the average daily tourist spend – a key component of overall tourist expenditure (tourist bed nights multiplied by average daily spend). Since no known data source provided this on a consistent basis,<sup>3</sup> the study used an average estimated daily spend based on previous work covering various years between FY2005 and FY2015.<sup>4</sup> The daily spend from previous work indicated relatively similar results across time (averaging between \$150-160 AUD per day per person), which indicates this figure is unlikely to have changed significantly over the past few years. However, there is likely to be some variation, particularly as more years pass, and this data should therefore be updated in the future.

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<sup>3</sup> While Tourism Research Australia (TRA) have tourist related data on Norfolk Island, they are not permitted to provide any data explicitly related to Norfolk Island due to confidentiality reasons.

<sup>4</sup> These included: ACIL Tasman (2012); Econtech (2008); ISA (2008); Prideux B (2008); NIGTB (2015); and CIE (2015)

One option to overcome these data limitations, could be to extend the existing Norfolk Island visitor exit surveys (which contain data on tourist length of stay and average spend). This survey can serve as a way to understand the demographic of visitors and the key components of their stay on a regular basis. Access to this data would then allow for the consistent estimation of the Island's annual tourist activity.

While there are businesses outside of the tourism sector which operate in Norfolk Island, obtaining data from these businesses is difficult, in particular with regard to privacy concerns which arise due to the small number of businesses. For this reason, other businesses activity is not in detail in the analysis beyond identifying the spread of employment across industries.

## 2.3. Employment and household data

An integral part of any economy is its workforce. The income generated from employment facilitates household spending and welfare. To assess the employment profile and private sector spending on Norfolk Island, data was collected and/or calculated on:

- Weekly income per person;
- Weekly expenditure per person;
- Private final demand;
- Employment by industry;
- Voluntary work; and
- Unemployment.

### Income and expenditure

The 2014 Household Income and Expenditure Survey (HIES), conducted by the Australian Government and the Norfolk Island Administration, provided the most recent insight into household expenditure in Norfolk Island. This data highlighted the range of income and expenditure sources from 729 households<sup>5</sup> in July 2014.

To find the private final demand for 2014, per person expenditure was extrapolated by the estimated ordinary resident population for that year – as documented in Appendix 1. It was estimated that the level of spending has remained relatively stable in real terms since 2014. Thus, to estimate the value of spending (in current dollars) in 2015 and 2016, the 2014 expenditure value has been inflated in accordance with a moderate estimation of growth in the Retail Price Index (RPI).<sup>6</sup>

While time constraints have meant new survey data could not be collected for this analysis, ideally a new HIES would be undertaken to provide an up-to-date picture of both income and expenditure on the Island. Undertaking a survey now would be timely, as a number of changes to the economy have been introduced since 2016, which will have had an impact on income and expenditure. For example, taxation and superannuation reforms were applied on Norfolk Island from 1 July 2016, while the Australian minimum wage was fully implemented on 1 July 2018.

If an initial HIES provided current expenditure and income data, future estimations of private final demand on Norfolk Island could be based on an estimated rate of consumption to income (based on the new HIES). That is, future estimations could utilise income data reported annually by the Australian Taxation Office (ATO).<sup>7</sup> While again subject to caveats around data and estimation, total

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<sup>5</sup> A total of 920 surveys were delivered, to which only 729 were suitable for the analysis.

<sup>6</sup> The latest estimates of RPI was developed by ACIL Tasman (2012). The change in the RPI since 2011 has been estimated as the average change over the preceding 5 years (see Appendix A).

<sup>7</sup> Most recent data available was 2016/17. Data for 2017/18 has yet to be released.

per person income can be extrapolated to the population level (using the ERP) and multiplied by an estimated rate of consumption to income.<sup>8</sup>

## Employment

In terms of employment, the Norfolk Island Census' (to 2011) and the ABS (2016) Census provided data on workers by industry, type (e.g. voluntary), as well as the population's labour force eligibility. Due to inconsistencies across each Census, particularly in 2011, data mapping was required to create a time series of the Island's employment profile – as reported in Appendix 2. This allowed for the assessment of industry employment from 1991 to 2016; labour force participation from 1996 to 2016 and the rate of unemployment from 1996 to 2016 (excluding 2011).<sup>9</sup> While care should be taken with these historical comparisons, ABS Census data on employment (post 2016 reforms) are likely to be a consistent source of information in the future (each Census release).

## 2.4. Macroeconomic data

Macroeconomic indicators reflect a range of insights related to the health of economies. Though not all are comparable, particularly across small and remotely located economies like Norfolk Island, these indicators are important internal measures for government (e.g. aiding in policy-making) and for the private sector (businesses and households). In this study, the following macroeconomic indicators were included and/or derived from the data available:

- Retail Price Index (RPI);
- Merchandise trade;
- Government surplus (deficit); and
- Gross Territory Product (GTP) (excluding investment).

Data on the Island's RPI was available from 1990 to 2011 from two sources – the NIRC and ACIL Tasman (2012). Beyond 2011, no information on the RPI could be attained. Where required, estimations of the RPI were derived from historical data (see Appendix 1).

The study's data on the Island's merchandise trade<sup>10</sup> was robust – spanning from 1996 to 2017 on a calendar year basis. This data was reported by the Observatory of Economic Complexity (OEC), based on the UN COMTRADE database – and will be a consistent source of data each year going forward. Total imports and exports for each year were converted from US Dollars to Australian Dollars using OECD PPP data (see Appendix 1).

Government surplus (or deficit) data at the Administration level was collected for FY1996 to FY2016 from the financial statements provided by the Norfolk Island Administration. Government expenditure on goods and services, including depreciation as well as grants<sup>11</sup> and subsidies were also extracted from these financial statements. This provided the estimation of government expenditure for inclusion in the GTP expenditure calculation.

Finally, the study estimated GTP (excluding investment) as the sum of private final demand, government expenditure and the value of net exports (including tourist exports). As reported in Appendix 1, trade data was converted from a calendar year to a financial year basis for consistency with other components of the GTP estimation.

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<sup>8</sup> This could also take into consideration subsistence and other spending in estimating a change in expenditure flowing from a change in income.

<sup>9</sup> In the 2011 Census, there was insufficient data to determine the total labour force as it did not separately identify persons looking for work who are currently unemployed.

<sup>10</sup> See, for example, [https://atlas.media.mit.edu/en/visualize/tree\\_map/hs92/import/nfk/all/show/2017/](https://atlas.media.mit.edu/en/visualize/tree_map/hs92/import/nfk/all/show/2017/)

<sup>11</sup> To avoid double counting in the GTP estimation, the value of grants were subtracted from government expenditure. For years which the split between grants and subsidies was provided, an estimated ratio of grants to subsidies was derived. For years which reported total grants and subsidies, this ratio was used to estimate the value of grants in isolation – which was generally around 50 per cent.

# 3. Structure of Norfolk Island economy

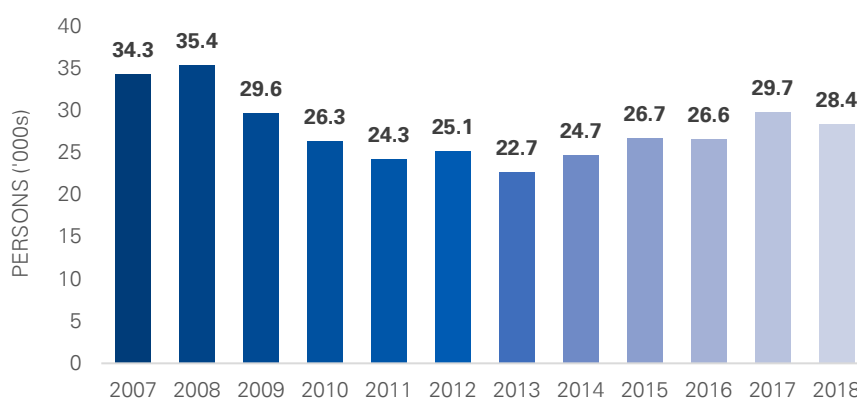
The Norfolk Island economy faces a distinct range of challenges as a result of its remoteness and small land area. This section of the report will take a brief look at the structure of the economy, and the key components within it.

## 3.1. Tourism

Representing approximately 40 per cent of the activity in the Norfolk Island economy, tourism is the key industry for the island, with over 25,000 visitors coming to the island each year. The busiest months for tourism are in autumn and spring, with March and April seeing the highest number of visitor arrivals.

Tourism activity is considered to be an export under national accounting frameworks, with the spending by tourists (on accommodation, transport, food and drinks and other activities) arising from a demand outside the Norfolk Island economy. For this reason, throughout the report, tourism exports and tourism activity will be used interchangeably.

**Figure 5: Total visitor arrivals by calendar year**



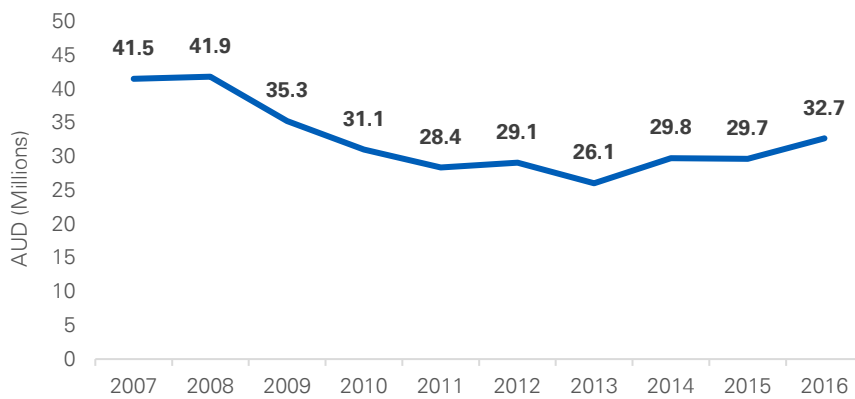
Source: Norfolk Island Regional Council, ABF

Estimates of tourism exports for 2014<sup>12</sup> suggest that the visitors of Norfolk Island stay on average around 7 days on the island, and spend a little more than \$150 per day, which makes up a significant component of the Norfolk economy. More recent estimates of tourist expenditure illustrate a recovery from the Island’s low in 2013 at just over \$26 million, to approximately \$33 million in 2016.<sup>13</sup> A closer look at the components of the Island’s tourist exports indicate that a large proportion of improvements in tourist related spending was explained by growth in visitor volumes.

<sup>12</sup> Centre for International Economics (2014), Economic Impact of Norfolk Island reform scenarios, Report prepared for the Department of Infrastructure and Regional Development, November 2014.

<sup>13</sup> Noting that, as discussed in section 2.2, to overcome current data limitations around tourist expenditure, the existing visitor exit surveys could be extended to collect regular data on tourism spend.

**Figure 6: Tourist exports by financial year**



Source: KPMG analysis<sup>14</sup>

For this level of tourism to be possible, the links between Norfolk Island and the major tourist source markets are obviously key. Over the past decade or so, a number of different airlines have entered and exited the market of offering flights to Norfolk Island, including two “domestic” Norfolk airlines – Norfolk Air from 2005 to 2012, and Norfolk Island Airlines for less than a year from 2017. Air New Zealand has been the mainstay from 2012, operating flights from both Australia and New Zealand (although the New Zealand service has since stopped). A development of interest is the weekly service from Auckland operated by Chatham Airlines, commencing in September 2019.

**Table 1: Airline services to Norfolk Island**

Airline	Commencement	Cessation
Norfolk Air	July 2005	February 2012
Air New Zealand	March 2012 (mainland Australia)	April 2017 (NZ service)
Norfolk Island Airlines	June 2017	January 2018 (NZ service) March 2018
Chatham Airlines	September 2019 (planned)	

Source: KPMG analysis

## 3.2. Domestic demand

### Private demand

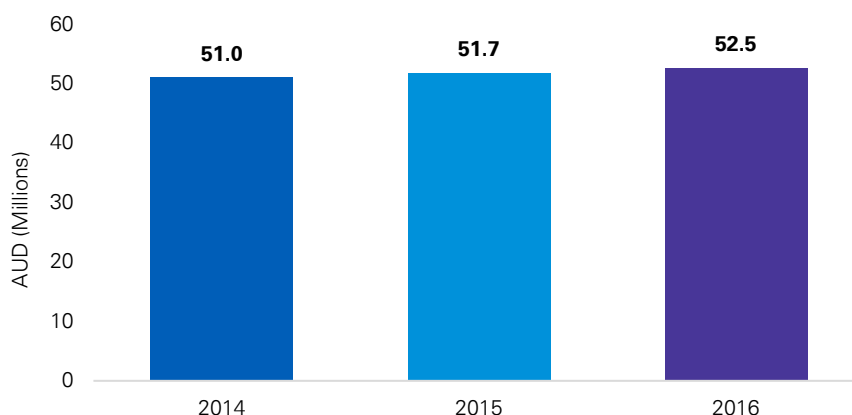
The 2014 Norfolk Island Household Income and Expenditure Survey<sup>15</sup> suggests that the level of household expenditure in Norfolk Island is conservatively estimated at \$553 per week, per person. This varies between \$430 per person for households in the lowest income quintile and \$855 per person for households in the highest income quintile, and represents an annual amount of consumption per person of approximately \$28,750. Household demand is likely the most stable component of the Norfolk Island economy, as there is little reason to expect this to change substantially from year to year (aside from broad-based price changes, such as those captured by the Retail Price Index (RPI)).

<sup>14</sup> These estimates are based on tourism spend, which is a series created from a small number of observations merged together, and also impacted by the assumptions around Retail Price Index for years it has not been calculated.

<sup>15</sup> <http://www.norfolkisland.gov.nf/sites/default/files/public/documents/ANIRports/Surveys/Household%20Survey%20Final.pdf>

Using this survey as a benchmark for household expenditure, private final demand for Norfolk Island was estimated at \$52.5 million in 2016, assuming changes in consumption were consistent with inflation estimates.

**Figure 7: Private final demand by financial year**



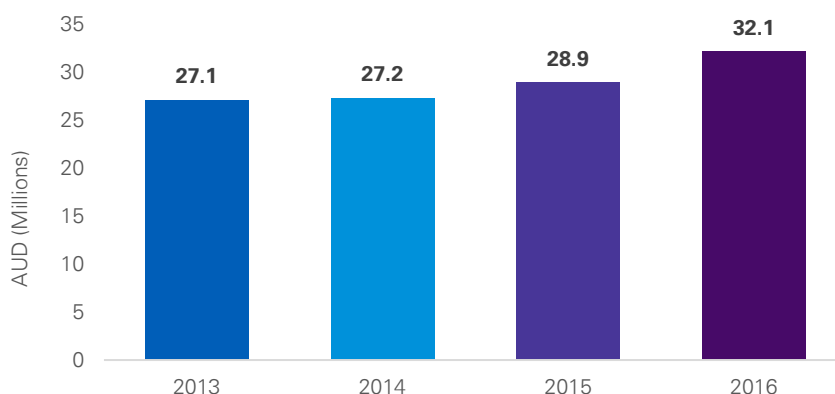
Source: KPMG analysis

### Government expenditure

Given the nature of Norfolk Island’s status as an external territory, the tiers of government which operate on the island are the Norfolk Island Regional Council (NIRC) and the Australian Government (whilst this has become more explicit following the 2016 reforms, there has long been funding provided by the Australian Government for priorities such as the Kingston and Arthur’s Vale Historic Area (KAVHA)).

The relevant component of government expenditure in estimating the economic baseline from an expenditure perspective is government expenditure (from all levels of government) which goes to suppliers (rather than any employee salaries and wages and other transfers, which will already be captured in household consumption). In FY2016, this amounted to approximately \$25 million spent by all levels of government on suppliers, and another \$7 million allocated to depreciation amortisation.

**Figure 8: Government expenditure on goods and services (including depreciation, less grants)**



Source: Norfolk Island Regional Council, KPMG Analysis

## Investment

In contrast to the relative stability of consumption in the economy, the level of private investment is often far more volatile, as it is generally a larger and less regular outlay. It is for this reason, combined with a lack of reliable data, that this study has not estimated a value for investment. Some inferences can be drawn from changes in private investment through changes in the number of development applications, however the link is not strong enough to be used to calculate an accurate estimate.

Government funding is also key for the much 'lumpier' component of investment. Given the small size of the Norfolk Island economy, there is limited capacity to fund large infrastructure improvements, so government has been responsible for large projects, such as the almost \$40 million airport runway resurfacing<sup>16</sup> and previous work on ports. Typically this level of funding is attached to particular projects, and therefore varies considerably from year to year.

In a small economy like Norfolk Island, there is no simple way around the 'lumpiness' directly, but if the data is collected from businesses and households around investment spending and the relationship it has with development approvals and other measures already collected, some estimates could be potentially developed.

## 3.3. Trade

While tourism is a significant contributor to trade in Norfolk Island, dominating the Island's exports, the report examines the overall level of merchandise trade (that is, trade in goods rather than services). The trade in goods for Norfolk Island is constrained by a number of factors, such as the regularity of shipping, weather constraints on unloading and the cost of freight.

As is expected of a small, remote island, Norfolk Island imports considerably more goods than it exports – with \$60 million worth of imports and less than \$3 million of exports in 2017.<sup>17</sup>

- The largest components of these exports include some items which could be considered "re-exports" (that is, the export of goods previously imported) such as specialised machinery (14%, particularly related to machinery for the processing of animal products and vegetable fats) and cans (12%).
- Excluding these "re-exports", key Norfolk Island products that are exported include seeds (14%), wood for fuel (11%) and tanned hides (7%).
- In recent years (2016 and 2017, which is the latest available data), there has been a sharp increase in the total value of imports. In 2017, imports were dominated by refined petroleum (56%), while in 2016, key imports were a one-off purchase of aircraft<sup>18</sup> (21%), and footwear and textiles (28%).

In addition to the constraints on exporting goods resulting from the remoteness, small size and small population of Norfolk Island, the logistics of shipping cargo can present a challenge. Depending on the prevailing weather conditions, the cargo is unloaded in either Cascade or Kingston, and transported from the ship to the dock via the use of barges, as there is no suitable harbour for unloading directly from ships.

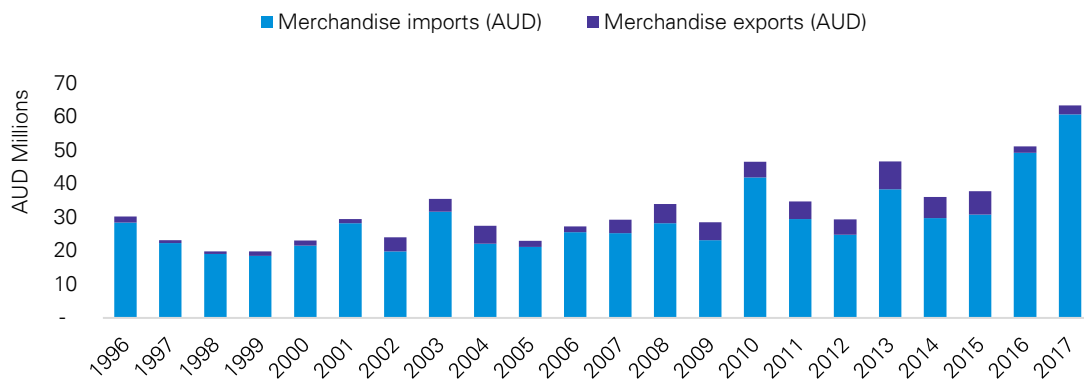
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<sup>16</sup> Portfolio Budget Statement, DIRDC, 2019-20

<sup>17</sup> Observatory of Economic Complexity (2017)

<sup>18</sup> Classified as a fixed-wing aircraft with an unladen weight of between 2,000 – 15,000kg

**Figure 9: Merchandised imports and exports by calendar year**



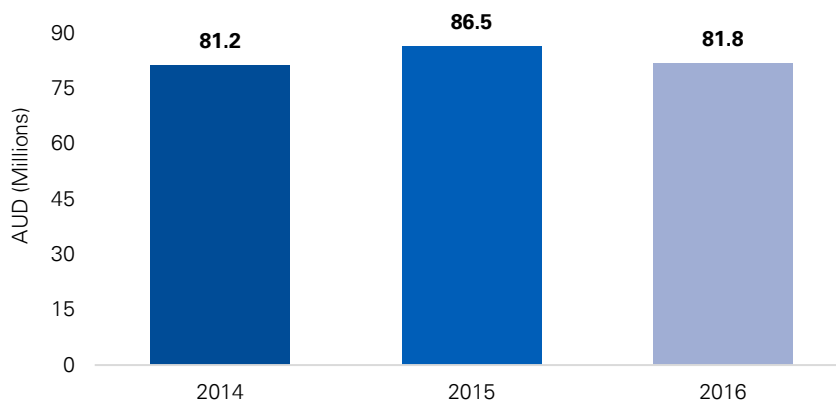
Source: OEC, KPMG Analysis

### 3.4. Gross Territory Product

The tourist and merchandise exports and imports (discussed in sub-sections 3.1 and 3.3) combined with domestic demand (discussed in sub-section 3.2 ) provide an indication of the Norfolk Island’s Gross Territory Product (GTP), excluding investment from the expenditure side. This measure illustrates the current baseline of economic activity on the Island. Importantly, this can also be compared alongside other measures, such as population and employment, to assist in identifying economic performance and trends going forward.

Norfolk Island’s GTP (excluding investment) was estimated to have been just under \$82 million in FY2016 (the most recent year for which there is robust data available). Figure 10 shows that this was down slightly from the FY2015 GTP estimate, and higher than the FY2014 estimate. It is not unusual for the economy to experience small year-to-year fluctuations. The increase from FY2014 to FY2015 was estimated to be largely a result of a slight strengthening in net exports. In contrast, the small contraction estimated in FY2016 appeared to be due to a combination of a strong jump in imports (which has a negative impact on GTP) offset, to some extent, by a slight improvement in both tourist exports and government expenditure.

**Figure 10: Gross Territory Product (GTP) (excluding investment) for Norfolk Island (current prices, latest available years)**



Source: KPMG analysis

## 4. Employment and industry

While there is an Australian monthly labour force survey, data is only available at the Statistical Area 4 (SA4) level, which does not allow for the separate identification of Norfolk Island. However, some conclusions can be drawn from the Census conducted every five years.

This information suggests that the vast majority of working-age people in Norfolk Island are employed – whether voluntary, full-time, part-time or casual, in addition to those working for themselves. Anecdotally, there is also evidence that many people in Norfolk Island work more than one job, which can influence the conclusions that are drawn from the employment data as well (see box on the right<sup>19</sup>).

From the Census data, the unemployment rate was approximately 2 per cent in 2016<sup>20</sup>, with earlier data suggesting even lower unemployment rates. While these statistics do not call out underemployment,<sup>21</sup> the Island appears to be operating at a high rate of employment, with significantly lower unemployment rates compared to the mainland (at 6.9 per cent according to the Census data) and to similarly sized economies (Christmas Island – at 1.9 per cent) at the time of the 2016 Census.

With regard to participation rates, the data suggests workforce participation (those over 15 years of age who are employed or actively looking for work as a proportion of the total) in Norfolk Island has declined across the last decade, with the 2016 Census indicating 68 per cent participation, compared to 79 per cent in 2006.

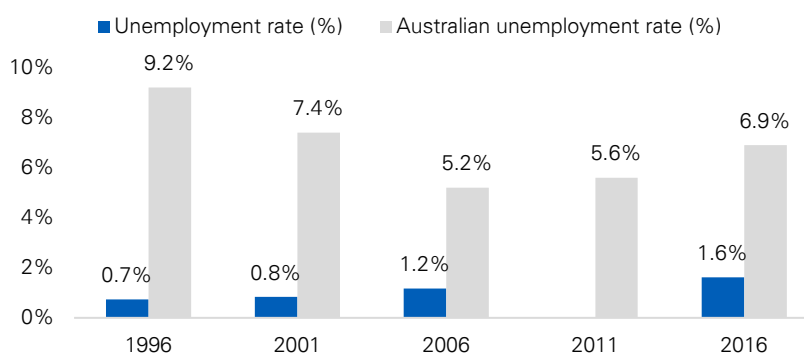
### Characteristics of employment in Norfolk Island

The labour force in Norfolk Island has a different perspective on employment than other populations – particularly compared to the mainland. In Norfolk Island, part-time employment is the most common form of employment. Anecdotally, it is not uncommon to see the majority of the labour force working in up to three jobs at a time.

This fact is largely out of necessity, to deliver on the needs of the community. While a variety of demands are met with relative ease in largely populated regions of the world, Norfolk Islanders must provide a range of essential services with relatively less hands – a challenging task.

It is therefore unsurprising to see that a large share of the community also participates in voluntary work. In 2011, 626 persons were involved in voluntary work; and 499 in 2016 – equating to approximately 30 to 35 per cent of the population according to Census data. This sense of work ethic and collaboration appears to be bound within the fabric at all levels in the community.

**Figure 11: Unemployment rate by year**



The data from the 2011 Census was insufficient to calculate an unemployment rate

Source: Norfolk Island Census, Australian Census

<sup>19</sup> Norfolk Online News (2016)

<sup>20</sup> After taking into account changes for data with values below 20

<sup>21</sup> Those who are not fully employed, i.e. part-time workers who want more hours, and full-time workers who are usually employed full-time but were forced for economic reasons to work part-time in the week they were surveyed.

## 4.1. Welfare recipients

Another source of information which may help to shed light on unemployment or lower incomes is the number of welfare recipients in Norfolk Island. From data made available by the Australian Department of Social Services (DSS), the following breakdown is shown for recipients in the December quarter of 2016, 2017 and 2018.

**Table 2: Recipients by selected payment type in the December quarter by year**

Payment type <sup>22</sup>	2016 Recipients	2017 Recipients	2018 Recipients
Age Pension	234	224	228
Carer Allowance	23	22	22
Disability Support Pension	8	12	14
Newstart Allowance	17	18	20
Youth Allowance	<5	<5	<5
Parenting Payment	<15	<15	<20
Family Tax Benefit A	122	120	104
Family Tax Benefit B	76	69	73
Commonwealth Rent Assistance	-	58	58

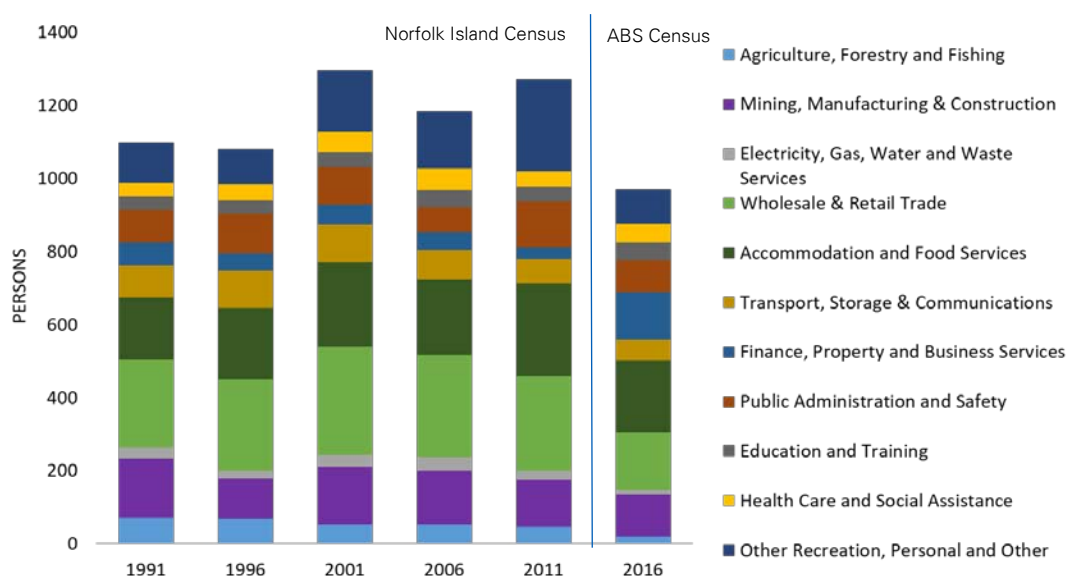
Source: Department of Social Services

The Age Pension aside, these numbers too do not suggest that unemployment, or the lack of income associated with unemployment is a key concern in Norfolk Island. However, as these payments have only recently become available to residents of Norfolk Island (as part of the 2016 reforms), there may be some reticence to collecting any unemployment benefits, which may understate the issue.

## 4.2. Employment by industry

At each Census, employment by industry is also reported, giving an insight into the industrial structure on the island. Care should be taken when interpreting this data over time, as there is a split in the series, with the Norfolk Island Census providing data up to 2011, replaced by the Australian Census data from 2016. There are also differences in data classifications across each of the Norfolk Island census years and the (2016) Australian census.

**Figure 12: Employed persons by industry**



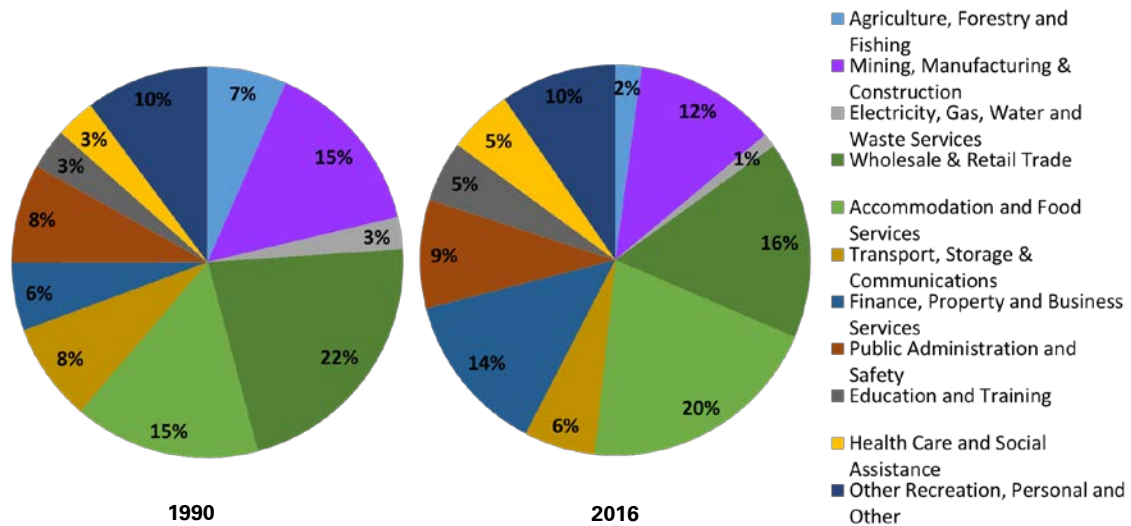
Source: Norfolk Island Census 1990 - 2011, ABS Census 2016, KPMG analysis  
Note: Other also includes "inadequately described" and "not stated".

<sup>22</sup> Department of Social Services, 2019

Despite potential data source/classification differences across the years, it is still clear that the Norfolk Island economy is dependent on tourism-related industries, specifically the wholesale and retail trade and the accommodation and food services sectors. These two sectors have consistently contributed to around 40 per cent of all industry employment over the past 25 years.

The increasing importance of services can also be seen, with growth in the proportion of total employment in finance, property & business services, education & training, and health care over the past 25 years. In contrast, the level of employment in the agriculture industry has been declining slowly over the same time period.

**Figure 13: Share of employed persons by industry in 1990 (left) and 2016 (right)**

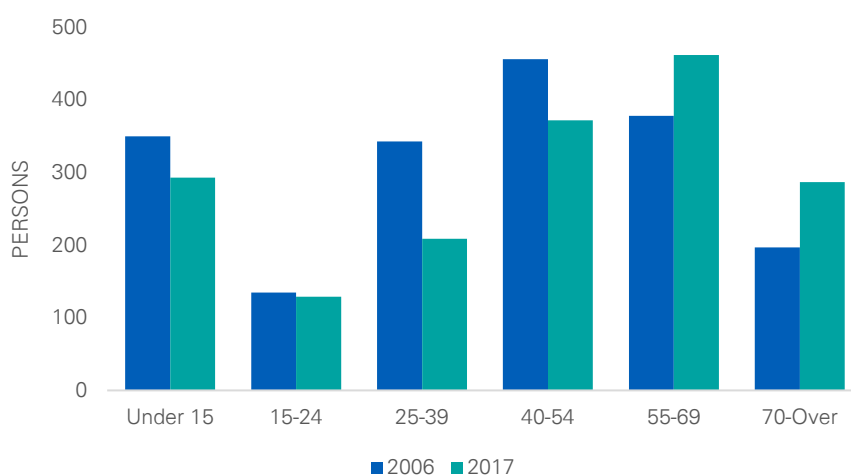


Source: 1990 Norfolk Island Census, 2016 ABS Census, KPMG analysis

## 5. Population and demographics

One of the key challenges facing Norfolk Island is that of its small and ageing population. The ageing of the Norfolk Island population can be clearly seen in Figure 14, where the largest working age demographic has moved from being the 40-54 year old bracket to the 55-69 year old bracket. The 70 and over age group has seen the largest increase, while there has been a 'hollowing out' in the younger age groups, with a large drop in population between the ages of 25 and 39, as well as a fall in the number of children under 15.

**Figure 14: Population by age group by year**



*Source: 2006 Norfolk Island Census, 2017 ABS ERP*

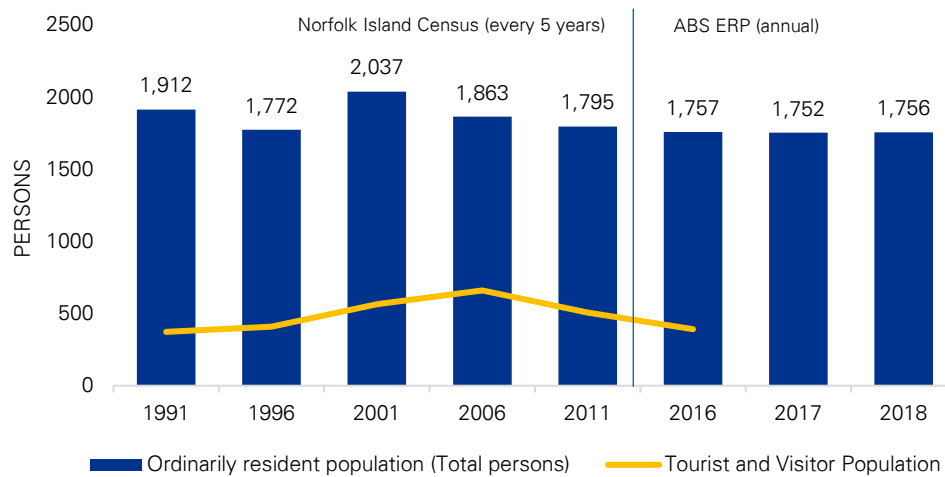
This demographic challenge may be similar to that faced by other regional and remote areas of mainland Australia, where upon reaching adulthood, many people leave to pursue study or greater work opportunities. However, it should be noted that, of the younger population remaining on the Island, there is a comparatively high level of engagement. Around 83 per cent of the youth population (15-24 year olds) on the Island are engaged in either full-time work, full-time study, or undertaking a combination of work and study.<sup>23</sup> The average youth engagement across Australia in the same year (2016) was 77 per cent, with an average engagement of 67 per cent across remote regions and only 49 per cent across very remote regions.

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<sup>23</sup> ABS Census 2016

Looking at the population more broadly shows a steady decline in total persons on the Island since 2001 – including tourists and visitors present at the time of each Census. More recent and frequently collected data from the ABS indicates that the estimated resident population growth has been relatively flat, with no real change observed over the past three years.

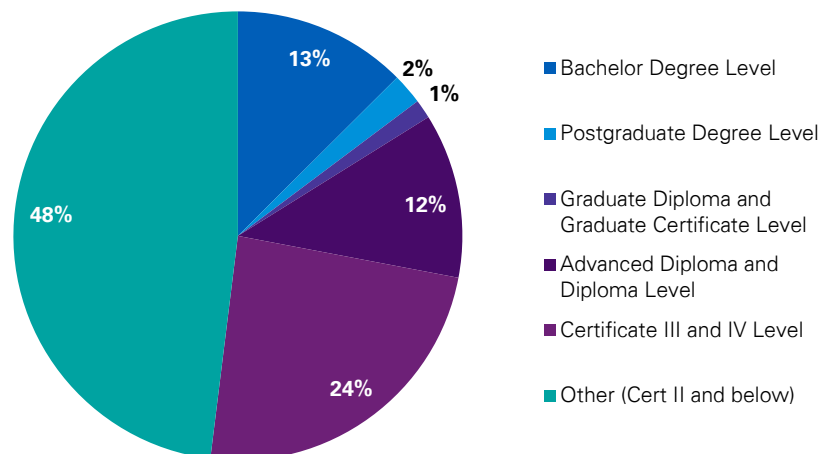
**Figure 15: Population by residency status**



Source: Norfolk Island Census, ABS ERP

In terms of the level of education, 52 per cent of Norfolk Island residents held a qualification at Certificate III and above. Among the highly educated persons, around 28 per cent held Bachelor or Postgraduate degrees or Advanced Diploma and Diploma level qualifications in 2016 (as depicted in Figure 16). While indicating that the majority of the Island community are considered ‘skilled’, it is important to consider how effective the labour market is in the allocation of resources, or whether the population is adequately trained for the jobs demanded by employers.

**Figure 16: Persons by highest level of education attained, 2016**



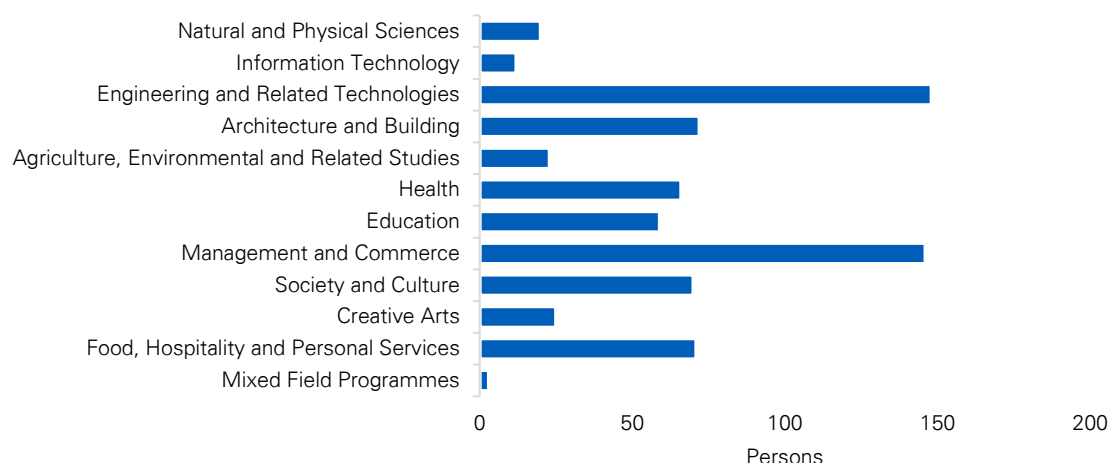
Note: Some numbers are small and are subject to perturbation. We advise caution in their use.

Source: 2016 ABS Census

Looking at the population by field of study provides a partial insight to this point. Given Norfolk Island’s reliance on the commerce of tourism and hospitality related services, it is unsurprising to see over 200 persons with qualifications in management, commerce, food, hospitality and personal services – equivalent to approximately 12 per cent of the total population in 2016.

Other primary fields of study include engineering and related technologies – with around 150 persons holding a related qualification in 2016.

**Figure 17: Persons by field of qualification, 2016**



**Note:** Some numbers are small and are subject to perturbation. We advise caution in their use.

Source: 2016 Census

From the 2016 Census data, an idea of the most commonly-held occupations can be formed, as shown in **Table 3**. This shows that the most common occupation on Norfolk Island is that of a general sales assistant, with retail managers the second-most common. Reflecting the role of tourism in the economy, occupations such as housekeepers, hotel managers and travel advisers also appear in the top 10.

**Table 3: Top 10 Occupations on Norfolk Island, 2016**

Occupation	2016 Persons
Sales Assistants (General)	70
Retail Managers	44
Housekeepers	30
Hotel and Motel Managers	23
Carpenters and Joiners	23
Tourism and Travel Advisers	22
Chefs	21
Motor Mechanics	18
Waiters	17
General Clerks	16

Source: 2016 Census

# 6. Data Recommendations

This section provides a summary of key findings, their associated limitations, and some potential ways which these may be avoided in future evaluations.

## 6.1. The Norfolk Island economy

A brief assessment of the Norfolk Island economy identified a number of key findings:

- **Tourism is a key source of income for Norfolk Island.** About 40 per cent of the Island's activity is related to tourism. Its near 30,000 visitors in FY2016 generated approximately \$33 million in tourist exports. For 25 years, 40 per cent of the Island's labour force worked in wholesale, retail trade, accommodation and food services. Similarly, 12 per cent of the population held a qualification related to management, commerce, food, hospitality and personal services in 2016.
- **Estimates of GTP show some signs of growth.** Excluding investment, GTP on Norfolk Island was estimated to be around \$82 million in FY2016 – slightly down from FY2015, and slightly above FY2014. These small fluctuations were likely due to increases in net exports from 2014 to 2015, while the fall from 2015 to 2016 was caused by a strengthening in imports, offset to some extent by greater tourist and government expenditure.
- **Population growth has slowed in recent years.** The overall population has seen a modest decline since 2011, to an estimated 1,756 in 2018. A hollowing out has largely occurred in those aged less than 55 years, but particularly in those aged between 25 and 39 years. Conversely, there has been significant growth in the older population, specifically those over 70 years but also in those 55 years and above.
- **Employment is strong compared to the mainland and other external territories.** While the Island's unemployment rate has increased slightly from 2006 compared to 2016 (1.17 to 1.6 per cent), comparisons to the mainland (6.9 per cent from 2016 Census), and the similarly sized Christmas Island (1.9 per cent in 2016), indicate that Norfolk's labour force is operating at near full employment levels. However, this does not factor in any potential underemployment in the Island.

## 6.2. Limitations

While this study provided a base estimation of the Norfolk Island economy, several challenges in the data restricted parts of the analysis, including:

- **Data comparison across series.** The inclusion of Norfolk Island into the Australian Census causes some concern over data comparisons prior to 2016. As a result, any trend analysis should be treated with caution. Further, differences in reporting across each Census meant that data mapping was necessary to assess changes to employment by industry across time. This issue should reduce going forward, as population estimates can now be accessed annually from the ABS ERP, and potentially more consistent detailed population data will be produced by the ABS Census in the future.
- **Lack of recent data on key indicators.** While the Island's inclusion within the Australian Census has led to greater data on population and income, data on other important components including employment, tourist spend, tourist stay, and macro indicators (i.e. the RPI) are more scarce in recent years. This severely limits the ability to provide robust estimates of the economy in the present day.
- **Estimation in the absence of robust data.** Similarly, the lack of consistent data (e.g. gaps in series, varying time horizons and changes in the reporting of data) resulted in the need to estimate some data at particular points in time. As a consequence, the results of the study must be assessed from a relatively high level - or where insights could be generated without complete sacrifice of data quality.

## 6.3. Recommendations

In an attempt to overcome the study's limitations going forward, a number of recommendations have been proposed:

- 1 **Restarting the Retail Price Index.** Consistent reporting of the Retail Price Index would provide both government and the community an enriched understanding of the monetary conditions on the Island. Without an operational RPI, it is difficult to understand how prices have changed across time and its impact on related components of the economy – particularly household spending.
- 2 **Continuation of the Household Income and Expenditure Survey (HIES).** Since there is no consistent and explicit survey of household related spending on the Island, estimations of private final demand are limited. The provision of this survey potentially every two years would provide sufficient information on any changes in income and/or consumption patterns. This would allow for greater accuracy in the calculation of private final demand, as well as in the Island's estimate of GTP. Given the recent change in the Norfolk Island's governance and economy, it is important to access a more recent snapshot of household activity (beyond the last 2014 HIES).
- 3 **Extending the collection of data to include business activity beyond tourism.** The household income and expenditure survey would also provide some useful insight into business activity on Norfolk Island, through the consumption patterns of residents, as well as the sources of income. An additional business survey could be implemented, to (say) coincide with the ABS Census or the HIES, to provide an understanding of the level of small business and private activity on the Island.
- 4 **Extend existing ABS survey data to better capture Norfolk Island data.** There are a number of rich data sources already produced by the ABS – such as the Household Expenditure Survey and Survey of Income and Housing, and the Labour Force Survey. At this stage, the sampling in these surveys tends to be based on a broader regional definition (e.g. SA4), meaning Norfolk Island cannot be reliably separated out of these surveys. It may be worth investigating whether particular ABS data sets could be extended to more robustly capture Norfolk Island data.
- 5 **Extend capabilities by sourcing data from other organisations.** Several data, including but not limited to tourist spend, length of stay, and weekly per person income may be available on a more frequent basis outside the public domain. Working with other organisations such as Tourism Research Australia, and the Norfolk Island Regional Council (visitor exit surveys) may allow the Department to acquire a richer source of data to understand the Norfolk Island community and its visitors.

If these steps assisted to mitigate some of the current data limitations, this could lead to better understanding and estimation of the Norfolk Island economy, and inspire greater transparency and trust between all stakeholders. This also highlights the important role for industry in Norfolk Island to assist in overcoming the current data limitations, through surveys and providing data insights.

# 7. Appendices

## Appendix 1 – Data dictionary

Data Category	#	Data Item	Description	Years	Source information	Series updates	Calculations	Source links
Population	1	Ordinarily resident population (Male, Female, Total, Estimate)	Total ordinarily resident persons on Norfolk Island. This includes the resident, GEPs, TEPs and 'other' population.	1991; 1996; 2001; 2006; 2011; 2016; 2017; 2018.	Census data: 1991; 1996; 2001; 2006; 2011. ABS Catalogue 3218.0 data on Estimated resident population (ERP): 2016; 2017; 2018. ERP for males and females was only attainable for 2016 and 2017 from the ABS. It is important to note this change in sources between 2011 and 2016 onward (Census vs ERP).	ABS ERP Data will be updated annually and should be used going forward.	N/A	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>  <a href="http://stat.data.abs.gov.au/Index.aspx?DataSetCode=ABS_ANNUAL_ERP_ASGS2016">http://stat.data.abs.gov.au/Index.aspx?DataSetCode=ABS_ANNUAL_ERP_ASGS2016</a>
	2	Total persons by residency status	Total persons (residents, General entry permits (GEPs), Temporary entry permits (TEPs), and other) on Norfolk Island. GEPs are designed for those wishing to stay indefinitely, or to settle on, Norfolk Island. TEPs are designed for short-term residence, and may be granted subject to conditions for up to one year, extendable to three years or more in special circumstances.	1991; 1996; 2001; 2006; 2011; 2016.	All Censuses contain this information. For the 2016 ABS Census however, only resident and tourist population was attained.	Data to be updated with every Census release.	N/A	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>
	3	Population by age (mapped)	Ordinarily resident persons by age category. Age categories were mapped to the following: under 15; 15-24; 25-39; 40-54; 55-69; 70-over.	1991; 1996; 2001; 2006; 2011; 2016; 2017; 2018.	Census data: 1991; 1996; 2001; 2006; 2011. ABS Catalogue 3218.0 data on Estimated resident population (ERP): 2016; 2017; 2018.	ABS ERP Data will be updated annually and should be used going forward.	Refer to mapping table below.	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>  <a href="http://stat.data.abs.gov.au/Index.aspx?DataSetCode=ABS_ANNUAL_ERP_ASGS2016">http://stat.data.abs.gov.au/Index.aspx?DataSetCode=ABS_ANNUAL_ERP_ASGS2016</a>
	4	Persons by field of qualification	Ordinarily resident persons by field of study (Non-school qualifications). Fields included: Natural and physical sciences; information technology; engineering and related technologies; architecture and building; agriculture and building; agriculture, environmental and related studies; health; education; management and commerce; society and culture; creative arts; food, hospitality and personal service; mixed field programs.	2016	From the 2016 ABS Census.	Data to be updated with every Census release.	N/A	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>
	5	Population by highest level of education obtained (non-school)	Ordinarily resident persons (15 years and older) by highest level of education. The level of education was grouped by: Postgraduate degree level; bachelor degree level; graduate diploma and graduate certificate level; Advanced diploma and	2016	From the 2016 ABS Census.	Data to be updated with every Census release.	N/A	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>

Data Category	#	Data Item	Description	Years	Source information	Series updates	Calculations	Source links
			diploma level; Certificate III and IV level; Other (Cert II and below - including those with all or part high school completion).					
	6	Total tourist visitation	Tourist inbound visitation on Norfolk Island (persons).	1988 to 2019 (monthly)	Most recent data (April - 2019) can be found on the NIRC website under "Scheduled Airline Incoming Passenger Statistics". They provide total Pax and total visitors data. Other years can also be found under "Tourism data". Data post 2016 is equivalent to the Australian Border Force data.	The Australian Border Force data should be the source used to update this information in the future. This data is provided to the Department by the ABF on a monthly basis.	N/A	<a href="http://www.norfolkisland.gov.nf/scheduled-airline-incoming-passenger-statistics">http://www.norfolkisland.gov.nf/scheduled-airline-incoming-passenger-statistics</a>  <a href="http://www.norfolkisland.gov.nf/historical-information/tourism-data">http://www.norfolkisland.gov.nf/historical-information/tourism-data</a>  -
	7	Reason for visitation	The proportion of visitors that travelled to Norfolk Island for holiday; to see friends / relatives; business / employment, or other reasons.	2018 (monthly)	This data is provided by the Australian Border Force - reported to the Department on a monthly basis.	This data can be updated monthly or as provided by ABF.	Sum the monthly data to an annual basis.	-
	8	Average tourist stay	The average length of stay for visitors on Norfolk Island (days).	1999/00 to 2008/09; 2013/14 to 2015/16	Data on stay can be found under "Tourism data" in the monthly visitor statistics. Years prior can be found in the yearly Inbound passenger data under "Visitor statistics". Some details were also taken from data of past KPMG studies.	Future data can be sourced when available on the NIRC website, or from the visitor exit survey data (if available). The Australian Border Force also report these stay ranges and could be used as a future source of information here - although there are no specific data on average length of stay.	Where data was not available (2009/10 to 2012/13), a smoothed average was calculated. This calculation found the difference between two real data points, and spread the difference across the years of missing data. So for the length of stay in 2009/10, the difference between 2008/09 and 2013/14 (real values), divided by the number of steps (number of missing values+1), plus the value prior (2008/09). This is dragged across until you reach the next real data point.	<a href="http://www.norfolkisland.gov.nf/historical-information/tourism-data">http://www.norfolkisland.gov.nf/historical-information/tourism-data</a>  <a href="http://www.norfolkisland.gov.nf/visitor-statistics">http://www.norfolkisland.gov.nf/visitor-statistics</a>
Business and Industry	9	Total tourist bednights	The total number of bednights of tourists on Norfolk Island.	2000 to 2016	N/A - Calculated value.	This data is updated in accordance with new data on length of stay and tourist visitation.	This value is a simple calculation of total inbound tourists for a given year, multiplied by the average length of stay for tourists in the same year.	-
	10	Average tourist spend (est)	The daily spend of tourists while on Norfolk Island (AUD).	2004/05; 2004/05; 2006; 2008; 2014/15; 2015	ACILTasman (2012); Econtech (2008); Lenzen (2008); Prideux, B (2000); NIGTB (2015); CIE (2014). These several sources provided a ballpark estimate of daily spend.	This is not a repeatable series. Alternative sources of spend data could be the visitor exit survey which provide the most common tourist spend and stay ranges. This could be used to validate spend estimation (e.g. has the average spend had any material changes? If so consider altering daily spend estimate). Recommendation to include collection of this data in visitor exit survey if possible.	Some sources reported total spend of tourist visits, while some reported daily spend. Where they only report average total spend, divide this value by the average stay (if available) to find the average tourist spend per day.	<a href="https://www.regional.gov.au/territories/publications/files/Norfolk_Island_EDR_2012.pdf">https://www.regional.gov.au/territories/publications/files/Norfolk_Island_EDR_2012.pdf</a> <a href="http://www.norfolkisland.gov.nf/external-reports">http://www.norfolkisland.gov.nf/external-reports</a> <a href="https://isa.org.usyd.edu.au/publications/NorfolkTBL.pdf">https://isa.org.usyd.edu.au/publications/NorfolkTBL.pdf</a>  <a href="https://images.bookeasy.com.au/website/images/norfolk/Norfolk%20Island%20Shopping%20Report%20Final19%20June09.pdf">https://images.bookeasy.com.au/website/images/norfolk/Norfolk%20Island%20Shopping%20Report%20Final19%20June09.pdf</a>  <a href="http://www.norfolkisland.gov.nf/sites/default/files/public/documents/NIA_Tourism/NIGTB%20General%20Manager%20FY%20report%202014-15.pdf">http://www.norfolkisland.gov.nf/sites/default/files/public/documents/NIA_Tourism/NIGTB%20General%20Manager%20FY%20report%202014-15.pdf</a>  <a href="https://www.regional.gov.au/territories/publications/files/Norfolk_Island_Economic_Analysis_CIE_Report_20141128.pdf">https://www.regional.gov.au/territories/publications/files/Norfolk_Island_Economic_Analysis_CIE_Report_20141128.pdf</a>
	11	Tourist exports (est)	The total spend of all tourists while on Norfolk Island (AUD)	2000 to 2016	N/A - Calculated value.	This data is updated in accordance with new data on total tourist bednights and average daily tourist spend.	This value is calculated as the product of total bednights and the average tourist daily spend.	-

Data Category	#	Data Item	Description	Years	Source information	Series updates	Calculations	Source links
Employment and Households	12	Weekly income per person	Income received from multiple sources per person (AUD).	2014; 2016-17	Household Income and Expenditure Survey (2014). Conducted by the Australian Government and NI Administration. 2016-17 data can be sourced from the Australian Taxation Office (ATO).	New data can be sourced from the ATO each year. Norfolk Island data from the ATO is under the NSW category as postcode 2899.	Total personal income can be calculated from the ATO data as the sum of: total income or loss; net income or loss from business; net rent; Australian government allowances and payments; annuities/super income, interest and dividends; Allowances, tips, director fees etc.; capital gains net capital gains; foreign source income; other income category; and tax withheld from salary and wages. This total can be divided by the ordinarily resident population (from the ERP) then divided by 52 to find weekly per person income.	<a href="https://data.gov.au/data/dataset/taxation-statistics-2016-17/resource/41d19b90-1984-46be-b82c-0a51efc3983d?view_id=4ab5c100-794b-4a06-b210-0b0125496b0e">https://data.gov.au/data/dataset/taxation-statistics-2016-17/resource/41d19b90-1984-46be-b82c-0a51efc3983d?view_id=4ab5c100-794b-4a06-b210-0b0125496b0e</a>
	13	Weekly expenditure per person	Weekly per person expenses (multiple sources) (AUD).	2014	Household Income and Expenditure Survey (2014). Conducted by the Australian Government and NI Administration.	It is unclear whether this survey will be continued. A feasible alternative may be to use the per person total income data from the ATO to estimate an expenditure value (e.g. Income * (1 - Consumption rate))	N/A	<a href="http://www.norfolkisland.gov.nf/sites/default/files/public/documents/ANIReports/Surveys/Household%20Survey%20Final.pdf">http://www.norfolkisland.gov.nf/sites/default/files/public/documents/ANIReports/Surveys/Household%20Survey%20Final.pdf</a>
	14	Annual expenditure per person (est)	Annual expenditure per person (AUD).	1990 to 2016	N/A - Calculated value.	This data will be updated in accordance with new expenditure per person data.	This data item is calculated as the product of person weekly expenditure and the number of weeks in the year (52). This was then inflated or deflated by the change in prices reflected in the RPI (e.g. expenditure * (1 + % change)).	-
	15	Private final demand (est)	Total annual household expenditure (AUD).	2014 to 2016	N/A - Calculated value.	Private final demand will be updated in accordance with new annual expenditure per person and the total population.	Multiply the annual per person expenditure value for a given year, by the total population in that year.	-
	16	Ordinarily resident population employment by industry (mapped)	Ordinarily resident employed persons by industry categories.	1991; 1996; 2001; 2006; 2011; 2016.	All Censuses - mapping used where appropriate (see calculations column).	Data and mapping to be updated with every Census release.	Refer to mapping table below.	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>
	17	Voluntary work (persons)	Persons participating in voluntary work.	2011; 2016.	2011 NI and 2016 ABS Census data. Years prior had no information on voluntary work.	Data to be updated with every Census release.	N/A	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>
	18	Young people earning and learning (%)	Earning or learning refers to persons who were employed full-time and/or studying full-time or studying part-time and employed part-time.	2016	ABS Census data	Data to be updated with every Census release.	N/A	<a href="http://www.abs.gov.au/census">http://www.abs.gov.au/census</a>
	19	Ordinarily resident population looking for work last week	Unemployed persons, looking for work last week on Norfolk Island.	1991; 1996; 2001; 2006; 2011; 2016.	All Censuses - mapping used where appropriate (see calculations column).	Data to be updated with every Census release.	Extract data of those people looking for work, and who are currently not employed across each Census.	<a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>
	20	Participation rate (%)	The ratio of persons in the labour force to persons eligible for work (15+ years old).	1991; 1996; 2001; 2006; 2011; 2016.	N/A - Calculated value.	Data to be updated with every Census release.	The value is the ratio of the total labour force (employed persons plus unemployed persons) to the population of those aged over 15 years old.	-
	21	Unemployment rate (%)	The ratio of persons not currently employed but looking for work to the total labour force.	1996; 2001; 2006; 2016	N/A - Calculated value.	Data to be updated with every Census release.	This value is the ratio of persons unemployed (but seeking work) to the total labour force (employed + unemployed but looking for work). For 2011, there was insufficient data to have a complete calculation of unemployment and was therefore omitted.	-

Data Category	#	Data Item	Description	Years	Source information	Series updates	Calculations	Source links
Macroeconomic Indicators	22	Retail price index	The increase in prices of goods on Norfolk Island.	1990 to 2009 (100 = 1990); 2005 to 2011 (100=2005)	NIRC website (Census 2006 and old KPMG data); ACIL Tasman (2012).	RPI series restart date is unclear. Recommendation to resume the production of this metric.	To calculate the rate of change of the RPI = (New index value - Old index value)/ Old index value.	<a href="http://www.norfolkisland.gov.nf/sites/default/files/public/documents/ANIRReports/Census/Census_2006.pdf">http://www.norfolkisland.gov.nf/sites/default/files/public/documents/ANIRReports/Census/Census_2006.pdf</a> <a href="https://www.regional.gov.au/territories/publications/files/Norfolk_Island_EDR_2012.pdf">https://www.regional.gov.au/territories/publications/files/Norfolk_Island_EDR_2012.pdf</a>
	23	Gross territory product (est) (excl investment)	Sum of estimated consumption, government expenditure, and net exports on Norfolk Island. This estimation does not include investment due to a lack of data quality.	2014 to 2016	N/A - Calculated value.	This data item will be updated where new data on private final demand, tourist exports, government expenditure and net goods exports becomes available (annually).	This GTP estimate is the sum of private final demand, tourist exports, government expenditure (incl depreciation, less grants) and the net exports of goods (see individual calculations below).	-
	24	Annual merchandise imports	Annual value (AUD) of goods imports for Norfolk Island. This excludes services.	1996 to 2017 (CY)	Observatory of Economic Complexity, converted to AUD using OECD PPP data. This data is derived from the UN COMTRADE database.	This data can be updated on an annual basis when new data becomes available. A potential risk arises if this data is not updated for Norfolk Island separately from Australia.	The total value of imports for Norfolk Island is denominated in USD. Convert this to AUD by multiplying the value by the AUD rate / USD rate as reported in the OECD PPP (Purchasing Power Parity) dataset. This takes into account varying prices between economies.	<a href="https://atlas.media.mit.edu/en/visualize/treemap/hs92/import/nfk/all/show/2017/">https://atlas.media.mit.edu/en/visualize/treemap/hs92/import/nfk/all/show/2017/</a> <a href="https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm">https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm</a>
	25	Annual merchandise exports	Annual value (AUD) of goods exports for Norfolk Island. This excludes services (which is the largest portion of NI exports, given the tourism sector).	1996 to 2017 (CY)	Observatory of Economic Complexity, converted to AUD using OECD PPP data. This trade data is derived from the UN COMTRADE database.	This data can be updated on an annual basis when new data becomes available. A potential risk arises if this data is not updated for Norfolk Island separately from Australia.	The total value of exports for Norfolk Island is denominated in USD. Convert this to AUD by multiplying the value by the AUD rate / USD rate as reported in the OECD PPP (Purchasing Power Parity) dataset. This takes into account varying prices between economies.	<a href="https://atlas.media.mit.edu/en/visualize/treemap/hs92/export/nfk/all/show/2017/">https://atlas.media.mit.edu/en/visualize/treemap/hs92/export/nfk/all/show/2017/</a> <a href="https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm">https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm</a>
	26	Net goods exports (FY) (est)	Estimated net goods exports on a financial year basis.	1996 to 2017 (FY)	N/A - Calculated value.	This data can be updated when new data from the OEC becomes available.	The net exports (exports - imports) in a calendar year can be converted to financial year estimate. As an example, for 2016/17, multiply the value of imports in 2016 by half, and 2017 by half, and add them together. After doing the same for exports, the net exports value (exports FY - imports FY) can be estimated for the FY.	-
	27	Government expenditure	Government expenditure including depreciation (excluding grants)	1995/96 to 2015/16	NIRC website under "Financial statements". Other financial data was found within the 2001 and 2006 Census.	This data can be updated on an annual basis when new data becomes available.	Government expenditure within the GTP calculation must include depreciation, and exclude the value of grants. Depreciation is included as a measure of the "consumption of fixed capital" - that is, the use of fixed assets over their lifetime. Grants are excluded to avoid a double-count when the recipient of the grant then uses the funds in some form of expenditure. In cases where the split between grants and subsidies was absent, 50% was assumed to be grants and was subtracted from the government expenditure value. This rate (50%) was broadly equivalent to prior years where data was available.	<a href="http://www.norfolkisland.gov.nf/financial-statements">http://www.norfolkisland.gov.nf/financial-statements</a> <a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>
	28	NIRC operating position	Government revenue less government expenditure (incl depreciation) as reported in financial statements.	1995/96 to 2015/16	NIRC website under "Financial statements". Other financial data was found within the 2001 and 2006 Census.	This data can be updated on an annual basis when new data becomes available.	This is calculated as government revenue minus government expenditure (incl depreciation). This is typically reported at the bottom of the income statement. Calculation may not be required.	<a href="http://www.norfolkisland.gov.nf/financial-statements">http://www.norfolkisland.gov.nf/financial-statements</a> <a href="http://www.norfolkisland.gov.nf/census">http://www.norfolkisland.gov.nf/census</a>

## Appendix 2 – Data mapping table

Data item (mapped)	#	Consolidated groupings	1991-2006 Census	2011 Census	2016 Census
Population by age categories	1	1. Under 15 years	0 - 4	0 - 4	0 - 4
			5 - 9	5 - 9	5 - 9
			10 - 14	10 - 14	10 - 14
		2. 15-24 years	15 - 19	15 - 19	15 - 19
			20 - 24	20 - 24	20 - 24
		3. 25-39 years	25 - 29	25 - 29	25 - 29
			30 - 34	30 - 34	30 - 34
			35 - 39	35 - 39	35 - 39
		4. 40-54 years	40 - 44	40 - 44	40 - 44
			45 - 49	45 - 49	45 - 49
			50 - 54	50 - 54	50 - 54
		5. 55-69 years	55 - 59	55 - 59	55 - 59
60 - 64	60 - 64		60 - 64		
65 - 69	65 - 69		65 - 69		
6. 70-Over years	70 - Over	70 - Over	70 - Over		
Population by industry employed	2	1. Agriculture, forestry and fishing	Agriculture, forestry and fishing	Agriculture, forestry, farming, fishing	Agriculture, forestry, fishing
		2. Mining, manufacturing and construction	Mining and quarrying	2006 and 2016 data have been used to split electricity from the Manufacturing, construction, electricity and mechanic* group	Mining
			Manufacturing Construction		Manufacturing Construction
		3. Electricity, gas and water	Electricity, gas and water	2006 and 2016 data have been used to split electricity from the Manufacturing, construction, electricity and mechanic* group	Electricity, gas, water and waste services
		4. Wholesale and retail trade	Wholesale and retail trade	Sales, wholesale and retail trade	Wholesale trade
					Retail trade
		5. Accommodation and food services	Restaurants, hotels, accommodation and clubs	Hotels, accommodation, pubs and restaurants	Accommodation and food services
		6. Transport, storage and communications	Transport and storage	Transport, storage, IT and communications	Transport, postal and warehousing
			Communication		Information media and telecommunications
		8. Finance, property, business and other services	Finance, property and business services	Financial, banking, accounting and insurance	Rental, hiring and real estate services Financial and insurance services Administrative and support services Professional, scientific and technical services
		7. Public Administration and Safety	Public administration and defence	Government and public administration	Public administration and safety
9. Education and Training	Education, museum and library services	Education	Education and training		
10. Health Care and Social Assistance	Community services health	Health and social work	Health care and social assistance		
11. Other Recreation, Personal and Other	Other community services	Community and Personal Services	Arts and Recreational Services		
	Other recreation, personal and other Industry not stated or inadequately defined	Industry not stated or inadequately defined	Other Services Inadequately described / Not stated		

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