Overview of Figures

We provide an overview of each Figure derived from the data. The Figures produced can be partitioned into four sections, which follow the Scottish paper: A. Current migration and population characteristics; B. Population Projections; C. People and Places; and D. Economic Growth. We look at each section individually below.

# A. Current migration and population characteristics

### Figure 1. Natural change and net migration, Northern Ireland, 2001-2016

**Source:** *Mid-Year Population Estimates, Components of Population change (October, 2017), NISRA*

Since the turn of the Century Northern Ireland's population has been dependent on positive net migration (in-migration minus out-migration) combined with a positive natural population change (births minus deaths). Policy should concentration on how best to maintain this.

### Figure 2. Population by non-UK nationality, June 2017

**Source:** *Annual Population Survey (June, 2017), ONS*

Currently, there are an estimated 97,000 EU citizens living in Northern Ireland, alongside an estimated 26,000 other international migrants. These 123,000 non-British nationals living in Northern Ireland represent 6.6% of Northern Ireland's population. The majority of migrants in Northern Ireland come to work, join family, or study.

### Figure 3. Northern Ireland residents born in Ireland and EU26, 2007-2016

**Source:** *Labour Force Survey (March, 2018), NISRA*

The NISRA has estimated that there were 1,455,000 people resident in NI aged 16 or over. Of these 841,000 (58%) were employed and working in NI.

Between October and December 2016 the NISRA found that 79,000 persons resident in NI were born in the EU26; with 71,000 aged 16 or over. Of these, 57,000 (80%) were employed and working in NI. Moreover, it was also found that 38,000 residents in NI were born in Ireland; with 37,000 aged 16 or over. Of these, 21,000 (57%) were employed and working in NI.

### Figure 4. Births in Northern Ireland to mothers born in GB, EU26 and Ireland, 1997-2016

**Source:** *Registrar General Annual Report: Births (2016), NISRA*

A number of phenomena are worth noting over the past 20 years. First, there has been a long-term decline in births in Northern Ireland to mothers born in Great Britain. This is a decline in both absolute and relative terms. Specifically, there were 1,052 (4%) births in Northern Ireland to mothers from GB in 2016, which is a fall from 1,756 (7%) births in 1997.

Second, there has been a small fall in births in Northern Ireland to mothers born in Ireland: 618 births to mothers from Ireland in 2016; down

from 723 births in 1997.

Finally, there has been a substantial rise in births in Northern Ireland to mothers born in EU26 countries. This is a significant increase in both absolute and relative terms. In 2016 there were 1,590 (7%) births to mothers from EU26 countries; up from 176 (1%) births in 1997. The biggest rise in EU26 mothers came soon after the 2004 EU expansion.

### Figure 5. Change in employment by country of birth, Northern Ireland, 2008-2017

**Source:** *Labour Force Survey (March, 2018), NISRA*

Due to the global financial crisis, employment fell by 40,000 between Q1 2008 and Q2 2009. By 2014 employment levels were at pre-crisis levels. By 2016 employment had risen by nearly 40,000. Since 2014 employment recovery driven by people born in EU26 now living in Northern Ireland.

# B. Population Projections

### Figure 6. Actual and projected natural change and net international and rest of UK migration, Northern Ireland

**Source:** *Northern Ireland Principal Population Projection Summary (October, 2017), ONS*

Inward migration brings benefits to Northern Irelands demography, economy and society. The demographic benefits of migration are made clear in projections from the ONS regarding Northern Ireland's future population growth. This Figure demonstrates these projected trends.

There are projected to be more deaths than births in every year going forward. Each year for the next 25 years all of Northern Ireland's population growth is projected to come from migration. UK Government policy and the impact of Brexit means that international migration to Northern Ireland is projected to decline, further inhibiting Northern Ireland's population growth.

### Figure 7. Estimated and projected age structure of the Northern Irish population, mid-2016 and mid-2041

**Source:** *Projected populations at mid-years by age last birthday in five year age groups, Northern Ireland (October, 2017), ONS*

The age profile of the population will also change, as Figure 7 shows. The proportion of the population of state pension age will increase by over 30% in the coming years as the Baby Boomer generation reaches retirement. People aged 75 and over are projected to be the fastest growing age group in Northern Ireland, increasing by 64% over the next 25 years.

### Figure 8. Projected population by age group, Northern Ireland, 2016-2041

**Source:** *Projected populations at mid-years by age last birthday in five year age groups, Northern Ireland (October, 2017), ONS*

Demographic and economic benefits of migration to Northern Ireland are directly linked through growth in the working age population and the impact on tax revenue. The size of the population aged 16 to 64, which makes up most of the working age population, is very important for the economy and public finances. These individuals are more likely to be working and will be generating the highest tax receipts, for example, in income tax.

Taking factors including the changing relationship between the UK and EU, demographic change and possible future policy changes into account, we judged that the 50% less future EU migration and low migration variants of the population projections were appropriate for Northern Irish circumstances in preparing forecasts. Figures 8 and 9 demonstrate how the variants affect the age structure of the population compared to the principal projections in Northern Ireland and the UK.

### Figure 9. Projected population by age group, UK, 2016-2041

**Source:** *Projected populations at mid-years by age last birthday in five year age groups, UK (October, 2017), ONS*

Figures 8 and 9 highlight the great significance of migration to Northern Ireland's population growth relative to the rest of the UK, and the greater exposure Northern Ireland faces to reduced inward migration as a consequence of UK policy changes. This outcome would severely impact Northern Ireland's economic prospects.

# C. People and Places

### Figure 10. Sub-national projected percentage change in total population, 2016-2041

**Source:** *2016-based population projections for areas within NI (April, 2018), NISRA*

A projected reduction in migration due to Brexit will impact different areas of Northern Ireland in different ways.

### Figure 11. Projected population change, Northern Ireland, 2016-2041

**Source:** *2016-based population projections for areas within NI (April, 2018), NISRA*

# D. Economic Growth

### Figure 12. Historical and projected population, Northern Ireland, 1901-2116

**Source:** *Components of change (mid-year to mid-year), total fertility rate and expectation of life at birth based on the mortality rates for the year (October, 2017), ONS*

The Brexit driven reduction in migration is simulated through the economic model and the size of the shocks are estimated by calculating the percentage change in working age population between the two projections. We use the low migration variant as the main driver for simulating the impact of Brexit. This data is fed into the DSGE simulation of a labour shock.

### Figure 13. Northern Irish net overseas migration, historical and projections, 2001-2041

**Source:** *Components of change (mid-year to mid-year), total fertility rate and expectation of life at birth based on the mortality rates for the year (October, 2017), ONS*

### Figure 14. DSGE model simulating the impact of a negative labour shock

Resulting plot showing the trajectories of capital (K), income (Y), consumption (C) and investment (I) due to a collapse of labour (L).

### Figure 15. Projected change in real GDP, Northern Ireland and rest of UK, 2016-2041

The projected cumulative collapse of real GDP over the simulated 25 year period.