

# Summary Statistics for Rural Economic Development Zones

## Technical Research Note

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### Overview

This document provides a review of the contents of the accompanying Excel Spread Sheet 'REDZs 154 Data'. Where necessary it describes the analysis undertaken and provides a description of each variable. The structure of the document follows the structure of the spread sheet, i.e. it describes each worksheet in the spread sheet.

Whilst you are free to use these data as you want, I would be grateful if you could acknowledge their authorship by including the following reference:

Meredith, D. 2015. Summary statistics for Rural Economic Development Zones: Technical Research Note. Ashtown: Teagasc.

### Associated Resources

Associated with this data are a number of other resources including:

1. A document summarising the conceptual underpinning to REDZs, the methodology used and their classification. (REDZs 2015.ppt).
2. A map of the REDZs
3. A shapefile for use in geographic information systems.

## Description of 'REDZs 154 Data' Excel file

### Sheet 1: Total Population

This sheet contains the number of people living in each REDZ in 1991, 1996, 2002, 2006 and 2011

### Sheet 2: Population Density and Change

This sheet contains:

**Area:** The land area of each REDZ in Km<sup>2</sup>

**PopDensity91:** The population density of each REDZs for 1991

**PopDensity11:** The population density of each REDZs for 2011

**%PopChange91-11:** The percentage change in the population between 1991 and 2011

**% Population Change 2006 – 2011:** The Percentage change in the population between 1991 and 2011

#### Variance from the average population change (2006 - 2011)

The population of Ireland increased by 8.2% between 2006 and 2011. To understand the relative change in population we subtract the average (8.2%) from the actual population change for each area between 2006 and 2011. This gives an indication of the variance of the REDZ' population change relative to the national average.

Example: REDZ 1 recorded growth in population of 9,332 persons between 2006 and 2011. This represents an increase of 13.1% on the 2006 figure. The average population change (8.2%) is subtracted from 13.1% indicating that REDZ 1 outperformed the average by 4.9% .

### **Sheet 3: Rural Population (% Total pop)**

The percentage of the population in each REDZ living in rural areas. Rural, in this instance, are those EDs within a REDZ with a population density less than 100 persons per Kilometre squared.

**RPop1991:** The percentage of the population in each REDZ living in rural areas in 1991

**RPop1996:** The percentage of the population in each REDZ living in rural areas in 1991

**RPop2002:** The percentage of the population in each REDZ living in rural areas in 1991

**RPop2006:** The percentage of the population in each REDZ living in rural areas in 1991

**RPop2011:** The percentage of the population in each REDZ living in rural areas in 1991

**REDZ Classification:** Classification of each REDZ based on the percentage of the total population living outside of Electoral Divisions with a population greater than 100 persons per Km<sup>2</sup>.

- Where greater than 50% of a REDZ population lives outside of towns and cities the zone is classified as Predominantly Rural. These areas are assigned a value of '1' in the 'REDZ Classification' column.
- Where between 20 and 50% of a REDZ population lives outside of towns and cities the zone is classified as Intermediate Rural. These areas are assigned a value of '2' in the 'REDZ Classification' column.
- Where less than 20% of a REDZ population lives outside of towns and cities the zone is classified as Predominantly Urban. These areas are assigned a value of '3' in the 'REDZ Classification' column.

#### Sheet 4: Change-Selected Pop Cohorts (Sheet 4)

This sheet summarises changes in the structure of selected population cohorts that have been particularly impacted on by the economic recession, i.e. those between 20 and 34 years of age in 2011. The analysis captures changes in the size of the population over time, i.e. it compares the population in 2011 to the equivalent population at a previous time period.

The population is divided between the Male and Female components.

It is further divided into three groups, those born between 1986 and 1991, i.e. they were between 0 and 4 years of age in 1991; those born between 1981 and 1986 and those born between 1976 and 1981. These groups were, at the time of the 2011 census of population, 20-24 years of age, 25-29 years of age and 30-34 years of age.

The assumption underpinning this analysis is that if this population was unaffected by deaths, immigration or emigration it would remain the same size over time. Any changes in population are therefore attributed to either migration from the area, resulting in population decline, or immigration, resulting in population increase.

As data on deaths are not available at the level of the Electoral Division, it is not possible to account for their impact on the population size. As a consequence, all population decreases are attributed to migration from the area. Whilst this is unsatisfactory, the absence of data for the selected population groups precludes an evaluation of mortality on population change. This results in a further assumption that deaths affecting these population groups are randomly distributed over space and hence the mortality rate is the same for all areas. This assumption may not be robust as higher levels of, particularly, youth mortality may be associated with deprivation and some areas will record higher levels of deprivation than others.

The three sub-groups in the population were selected to capture the effect of life course events, e.g. completion of secondary and tertiary education, entrance into the labour force and the impacts of household formation. Research by Meredith and Gilmartin (2014) highlights that as younger people complete second level education they move to urban areas. As they enter their late 20s and early 30s they move from urban to rural areas. The results reported in the spread sheet capture the impacts of these processes for each of the REDZs. These developments are gendered, i.e. women move to urban areas at an earlier age than their male counterparts but, in general, more men than women leave rural areas.

**ChM04-2024:** Change in the number of males between 20 and 24 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 0 and 4 years of age.

**ChM59-2529:** Change in the number of males between 25 and 29 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 5 and 9 years of age.

**ChM1014-3034:** Change in the number of males between 30 and 34 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 10 and 14 years of age.

**ChF04-2024:** Change in the number of females between 20 and 24 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 0 and 4 years of age.

**ChF59-2529:** Change in the number of females between 25 and 29 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 5 and 9 years of age.

**ChF1014-3034:** Change in the number of females between 30 and 34 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 10 and 14 years of age.

**Ch04-2024:** Change in the number of persons between 20 and 24 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 0 and 4 years of age.

**Ch59-2529:** Change in the number of persons between 25 and 29 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 5 and 9 years of age.

**Ch1014-3034:** Change in the number of persons between 30 and 34 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 10 and 14 years of age.

**PChM04-2024:** Percentage change in the number of males between 20 and 24 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 0 and 4 years of age.

**PChM59-2529:** Percentage change in the number of males between 25 and 29 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 5 and 9 years of age.

**PChM1014-3034:** Percentage change in the number of males between 30 and 34 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 10 and 14 years of age.

- PChF04-2024:** Percentage change in the number of females between 20 and 24 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 0 and 4 years of age.
- PChF59-2529:** Percentage change in the number of females between 25 and 29 years of age at the time of the 2011 Census of Population compared to 1991 when they were between 5 and 9 years of age.
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### Sheet 5: Labour Force Participation Rates

The labour force participation rate is the number of persons classified as 'At-work', unemployed or seeking their first job divided by the total number of persons over 15 years of age and multiplied by 100.

|                 |   |
|-----------------|---|
| <b>MLFPR_91</b> | Male Labour Force Participation Rate 1991   |
| <b>FLFPR_91</b> | Female Labour Force Participation Rate 1991 |
| <b>MLFPR_96</b> | Male Labour Force Participation Rate 1996   |
| <b>FLFPR_96</b> | Female Labour Force Participation Rate 1996 |
| <b>MLFPR_02</b> | Male Labour Force Participation Rate 2002   |
| <b>FLFPR_02</b> | Female Labour Force Participation Rate 2002 |
| <b>MLFPR_06</b> | Male Labour Force Participation Rate 2006   |
| <b>FLFPR_06</b> | Female Labour Force Participation Rate 2006 |
| <b>MLFPR_11</b> | Male Labour Force Participation Rate 2011   |
| <b>FLFPR_11</b> | Female Labour Force Participation Rate 2011 |

**ChMLFPR9111:** The change in the Male Labour force participation rate (1991 – 2011)

**ChFLFPR9111:** The change in the Female Labour force participation rate (1991 – 2011)

### Sheet 6: Unemployment Rate

The unemployment rate is calculated by adding the number of people who are unemployed to the number seeking their first job and dividing by the number of persons in the labour force multiplied by 100.

|              |                        |
|--------------|------------------------|
| <b>UR-91</b> | Unemployment Rate 1991 |
| <b>UR-06</b> | Unemployment Rate 2006 |
| <b>UR-11</b> | Unemployment Rate 2011 |

## Sheet 7: Economic Dependency Ratio

The EDR provides a summary measure that indicates the degree to which the economically active population (employed) is supporting those that are unemployed, unable to work, looking for their first job or retired. Of course, it does not capture how this population is supporting the economically active population, e.g. through provision of unpaid child or elder care. The measure of EDR used here is the OECD definition. The EDR is calculated using the following data:

$$\text{EDR} = (R + D + F + U) / E$$

where

R = retired from employment

D = unable to work due to permanent sickness or disability

F = looking for first regular job

U = unemployed, and

E = employed

|                     |                                       |
|---------------------|---------------------------------------|
| <b>Male91-EDR</b>   | Male Economic Dependency Ratio 1991   |
| <b>Female91-EDR</b> | Female Economic Dependency Ratio 1991 |
| <b>Male96-EDR</b>   | Male Economic Dependency Ratio 1996   |
| <b>Female96-EDR</b> | Female Economic Dependency Ratio 1996 |
| <b>Male02-EDR</b>   | Male Economic Dependency Ratio 2002   |
| <b>Female02-EDR</b> | Female Economic Dependency Ratio 2002 |
| <b>Male06-EDR</b>   | Male Economic Dependency Ratio 2006   |
| <b>Female06-EDR</b> | Female Economic Dependency Ratio 2006 |
| <b>Male11-EDR</b>   | Male Economic Dependency Ratio 2011   |
| <b>Female11-EDR</b> | Female Economic Dependency Ratio 2011 |

## Sheet 8: Education Location Quotients

This sheet contains Location Quotients showing the relative distribution of the population with low, medium or high levels of education. Those that ceased education or before completing the Junior / Inter cert are classified as having 'low' education qualifications; those with a leaving cert as classified as having medium level qualifications and those with a 3<sup>rd</sup> level degree.

The location quotient technique has long been applied within both economic geography and econometric research concerned with the distribution of economic activities (Green and Owen, 1989, Keeble et al., 1991, Feser and Bergman, 2000, Baldwin et al., 2008). It was developed as a



means of evaluating the distribution of economic activities over space or, as it is more commonly referred to, economic base analysis. Conventionally, location quotients are calculated to determine whether a regional economy has a greater share of selected industries compared to the national economy (Harrington and Warf, 1995, p. 73). It is used here to provide a crude evaluation of the stock of human capital within each REDZ. This technique starts from an assumption that each population with a given education qualification is evenly distributed over space. By measuring the relative concentration of those with low, medium or high education qualifications in each REDZ, compared to the total population in each of the groups, one can assess whether it is under or over represented.

The output from this analysis is subject to rules based assessment. When the percentage of people with a particular level of education is equal to the national percentage of people employed in that industry a value of 1 is derived. Where a region's value is < 1 this is interpreted as below average or 'under represented' in terms of the education qualification whilst > 1 represents above average or 'over representation' within the area compared to the national figure (O'Donoghue and Gleave, 2004, p. 421). Though crude and lacking statistical significance these measures are commonly employed in economic geography (Feser and Bergman, 2000, Suarez and Delgado, 2009). The popularity of the location quotient technique is associated with, according to Heanue (2008), its applicability at different geographic scales, the simplicity of the calculation and the use of a rules based approach to interpreting the results.

The issue of denoting 'concentrations' of populations with certain education qualifications within REDZs using location quotients is something of a movable feast. In this instance, higher concentrations can be considered areas where the Location Quotient is above 1.2, i.e. a REDZs that contain a share 20% greater than one would expect if the population were evenly distributed amongst all REDZs.

The analysis was undertaken for 2002 and 2011. This allows a comparison of changes over a ten year period.

**02MaleLowLQ:** The location quotient of males with 'low' education qualifications in 2002.

**02MaleMedLQ:** The location quotient of males with 'medium' education qualifications in 2002.

**02MaleHighLQ:** The location quotient of males with 'high' education qualifications in 2002.

**02FemaleLowLQ:** The location quotient of females with 'low' education qualifications in 2002.

**02FemaleMedLQ:** The location quotient of females with 'medium' education qualifications in 2002.

**02FemaleHighLQ:** The location quotient of females with 'high' education qualifications in 2002.

**11MaleLowLQ:** The location quotient of males with 'low' education qualifications in 2011.

**11MaleMedLQ:** The location quotient of males with 'medium' education qualifications in 2011.

**11MaleHighLQ:** The location quotient of males with 'high' education qualifications in 2011.

**11FemaleLowLQ:** The location quotient of females with 'low' education qualifications in 2011.

**11FemaleMedLQ:** The location quotient of females with 'medium' education qualifications in 2011.

**11FemMaleHighLQ:** The location quotient of females with 'high' education qualifications in 2011.