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THEME 3
Population and social conditions

Part 1 Enhancement of Country of Residence Survey

Chapter 1 Existing Country of Residence Survey

The Central Statistics Office carries out two sample surveys of passengers:

- the Country of Residence Survey; and
- the Passenger Card Inquiry.

The results of these surveys are used in conjuction with total passenger movement figures, which are supplied by the relevant transport companies, to provide the official estimates for overseas tourism and travel.

The *Country of Residence Survey (CRS)* is a year round personal interview sample survey of passengers (both inward and outward) at all major air and sea ports. Its purpose is to provide an estimated distribution of passengers by country of residence. This distribution is applied to the total passenger movement figures to provide overall estimates of the number of visits abroad by Irish residents and of visits to Ireland by non-residents. The sample size in the Country of Residence Survey was 409,000 passengers (199,000 inward and 210,000 outward) in 1996.

The *Passenger Card Inquiry (PCI)* is also a year round sample survey of incoming and departing passengers at major air and sea ports. Information is collected on the reason for journey, area of residence, length of stay, expenditure and fare costs. The results are combined with the overall visitor estimates from the Country of Residence Survey to provide the overseas tourism and travel estimates for Balance of Payments purposes.

In the CRS a sample of sailings and flights is selected and a systematic sample of passengers on each is surveyed. The selection of sailings and flights is done in such a way as to ensure proper representation of day time and night time traffic and week-end and week day movements. Part 2 of this report deals in a more comprehensive way with the sampling aspects of the CRS.

The country of residence is taken as the response to the question:

What is your country of residence?

While the primary purpose of the CRS is to provide the country of residence profile with which to weight the results of the continuous PCI, the CRS also provides estimates of gross migration flows in accordance with UN recommendations. The procedure followed is:

- For *arrivals*, where the passenger's country of residence is outside Ireland s/he is asked whether s/he intends living in Ireland for more than one year. Where the response is "Yes" the person is counted as an immigrant.

- For *departures*, where the passenger's country of residence is Ireland s/he is asked whether s/he intends living outside Ireland for more than one year. Where the response is "Yes" the person is counted as an emigrant.

The relevant forms used are given in Appendices 1 and 2. This procedure yields an estimate of long-term emigrants and immigrants. However, the methodology in use up to 1995 did not provide any breakdown of these estimates e.g. by age, sex or country of origin/destination.

The following table provides a comparison of the migration estimates derived from the CRS and the published migration figures for the period 1990 to 1995.

Table 1.1 Comparison of official migration estimates and those derived from CRS, 1990-1995 (000s)

Year to April	Immigrants CRS	Emigrants CRS	Immigrants Official	Emigrants Official
1990	7.6	30.6	33.3	56.3
1991	7.1	16.7	33.3	35.3
1992	7.4	18.8	40.7	33.4
1993	6.2	25.3	34.7	35.1
1994	5.2	9.8	30.1	34.8
1995	5.8	19.1	31.2	33.1

The CRS migration estimates differ in both magnitude and year to year variations from the officially published estimates and in the case of 1992 the derived net migration figures are different in sign from the published ones.

Chapter 2 Enhancement of CRS migration inquiry

Following the first meeting of the UK/Ireland migration group which took place on 19 October 1994 between representatives of both the OPCS (UK)[1] and CSO (IRL) it was agreed to modify the CRS to provide gross migration flow data classified by age, sex and origin/destination. The primary objective of enhancing the migration part of the CRS was to assess to what extent the specific focus on migration would be likely to lead to "better" migration estimates from that source while at the same time taking care not to jeopardise the validity of the underlying CRS itself.

The work which was carried out is summarised under the following headings:

- Assessment of statistical implications, questionnaire design and printing;
- Training of field staff in new survey procedures;
- On-going monitoring of revised questionnaire in the field;
- Specification of revised computer edits and output tables;
- Results.

2.1 Statistical implications

In November 1994 a new migration survey form was designed (see Appendices 3 and 4). The layout was based on the existing CRS form but also included provision for the following

- origin/destination of migrants; and
- age and sex breakdown following the classification used in the Labour Force Survey.

The wording of the question was amended as follows:

What has been your country of residence for the past year?

Where the response to the follow up question for arriving non-residents and departing residents indicated that the person was a migrant, a tick was placed in the appropriate age group box and the details summarised by sex for each country of origin/destination.

Clear instructions for the Enumerator staff were set out on the new migration form. These instructions were circulated to the Enumerator staff in December 1994 along with a covering letter specifying the purpose of the new approach. The capture of the migration data in the revised format commenced on 1 January 1995.

[1] The OPCS was incorporated into the Office for National Statistics (ONS) with effect from 1 April 1996.

2.2 Training

In January 1995 training sessions were conducted at the following air/seaports:

Dublin airport
Dublin (Northwall) seaport
Dublin (Dun Laoghaire) seaport
Shannon airport
Rosslare seaport
Cork airport
Cork seaport

Instruction was given in interviewing techniques in relation to the new migration survey questionnaire. The Enumerator staff were also given instruction manuals and completed sample survey forms as an aid to implementing the new survey procedures. These training visits to the ports were followed up with a telephone support service offered by Tourism section. This provided all Enumerator staff with the facility of contacting Tourism section free of charge on a daily basis.

2.3 Monitoring

Training visits continued on a regular basis throughout the period of the pilot study. Any difficulties encountered at a particular location were referred back to Tourism section. The problems raised and solutions put forward were then circulated to all Enumerators for information.

A second meeting was held between representatives of both the CSO and OPCS in Cork in June 1995. Preliminary survey findings were analysed. Arising from this it was agreed that for the remainder of the study an Enumerator should be put in place at Knock Airport[2].

The recruitment and selection procedure took place during July/August 1995. This resulted in an Enumerator being employed by Tourism section on a fixed contract basis until 9 October 1996.

An analysis of the survey returns suggests that relative to the number of passengers travelling through Knock airport there are a significant number of longterm migrants.

At the third meeting of the CSO/OPCS study group on 27 September 1995 the coverage of migrants travelling cross-channel by coach, who might not be included in the present survey, was considered.

This arose due to the fact that some bus companies offer cheap all inclusive fares for travel from different locations in Ireland to London. The buses drive

[2] Knock airport is located in County Mayo in the west of Ireland.

directly onto the ferries without the passengers disembarking at the terminals. However, the Enumerators are not in a position to gain access to the buses to interview the passengers and have to rely on the bus driver to provide the necessary details.

To assess the significance of migrants using this mode of travel Tourism section contacted all the relevant ferry/bus operators to find out how coach passengers boarded the ferry services at the various ports.

The ports of Cork, Dun Laoghaire and Rosslare require all coach passengers to board 'shipside' (i.e. as foot passengers). However, Irish Ferries have an arrangement with Bus Eireann (the national bus operator) at the Northwall (Dublin) port whereby their coach service called 'Superbus' is allowed to board the night sailing directly, with the passengers remaining on the coach.

When contacted the Regional Manager of Bus Eireann with responsibility for this service stated that the company regularly carry out their own internal analysis of passenger usage from ticket reconciliations on this service and that based on these findings there was no evidence to support the view that (long-term) migrants were using this service.

In addition Bus Eireann invited the Enumerator based at the Northwall to survey coach passengers on the night 'Superbus Service' from the point of departure (i.e. Busarus Station). While this is not a very cost effective method of surveying, two trial surveys were carried out. No migrants were recorded.

2.4 Processing of data

The layout of the data set was designed by Tourism Section in agreement with the office's central data processing section.

New programmes were developed as follows:

- screens to read in the relevant data;
- two new edit programs;
- one grossing program.

The migration forms were clerically checked against the corresponding CRS forms for the same flights. The migration data were entered on the dataset in monthly batches. The edits were carried out by the section supervisor at the same time. The edit programmes were further enhanced in July 1996 to provide for a cross-check between the migrant totals as recorded on existing CRS survey forms and the migrant totals for the corresponding migrant survey forms for the same flights.

2.5 Results

The results derived from the enhanced CRS are set out in summary fashion in Table 2.1 and in greater detail in Tables 2.2 - 2.9. Data for the two years 1996 and 1997 are provided. The period covered is the year ending February of the relevant year for the CRS inquiry while for both years a breakdown by origin/destination and by sex and age group is also given.

Table 2.1 Comparison of official migration estimates and those derived from CRS, 1996 and 1997 (000s)

Year to April	Immigrants CRS	Emigrants CRS	Immigrants Official	Emigrants Official
1996	9.3	16.5	39.2	31.2
1997	9.4	7.1	44.0	29.0

At the overall level the results continue the pattern noted in Table 1.1 ie a difference in magnitude and year to year variation from the published migration estimates. However, this may be attributable to different coverage of both series ie long term migrants in the case of the CRS compared with a mixture of short term and long term migrants in the officially published series. This is covered in greater detail in Part 4 of the study.

Not alone did the difference in magnitude between the CRS and officially published series persist during the enhancement of the CRS but in the case of 1996 the derived net migration figures for both series differed in sign.

Looking at the more detailed tables, immigrants from the UK and rest of the EU appear to be understated in the CRS by comparison with the officially published series while the flows from the USA and the rest of the world are correspondingly overstated. In general the same trend holds for males and females separately. For emigrants the country of destination analysis for both the officially published series and the CRS give similar results expressed in percentage terms in 1997. However, in 1996 the CRS estimate of outflows to the UK was significantly less than the published one in percentage terms and vice versa for the three other destinations shown.

There is a reasonably close match between the CRS and the officially published series for both immigrants and emigrants in terms of the analysis by age group. The major discrepancies occur in the 25-44 year age group for immigrants and the 15-24 year age group for emigrants.

	TABLE 2.2 IMMIGRANTS BY COUNTRY OF ORIGIN, 1996											
	Males				Females				Total			
	Published		CRS		Published		CRS		Published		CRS	
	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent
UK	8,400	*44.7*	852	*20.1*	9,200	*45.1*	1,284	*25.5*	17,600	*44.9*	2,136	*23.0*
Other EU	3,200	*17.0*	752	*17.7*	3,900	*19.1*	862	*17.1*	7,200	*18.4*	1,614	*17.4*
USA	2,800	*14.9*	1,134	*26.7*	3,600	*17.6*	1,163	*23.1*	6,400	*16.3*	2,297	*24.7*
Other	4,300	*22.9*	1,504	*35.5*	3,700	*18.1*	1,734	*34.4*	8,000	*20.4*	3,238	*34.9*
Total	18,800	*100.0*	4,242	*100.0*	20,400	*100.0*	5,043	*100.0*	39,200	*100.0*	9,285	*100.0*
	TABLE 2.3 EMIGRANTS BY COUNTRY OF DESTINATION, 1996											
	Males				Females				Total			
	Published		CRS		Published		CRS		Published		CRS	
	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent
UK	6,700	*43.8*	1,116	*14.5*	7,400	*46.5*	2,556	*29.0*	14,100	*45.2*	3,672	*22.2*
Other EU	2,200	*14.4*	1,845	*24.0*	2,800	*17.6*	1,934	*21.9*	5,100	*16.3*	3,779	*22.9*
USA	2,700	*17.6*	1,956	*25.4*	2,500	*15.7*	1,574	*17.9*	5,200	*16.7*	3,530	*21.4*
Other	3,600	*23.5*	2,784	*36.2*	3,200	*20.1*	2,747	*31.2*	6,800	*21.8*	5,531	*33.5*
Total	15,300	*100.0*	7,701	*100.0*	15,900	*100.0*	8,811	*100.0*	31,200	*100.0*	16,512	*100.0*

TABLE 2.4 IMMIGRANTS BY AGE GROUP, 1996

	Males				Females				Total			
	Published		CRS		Published		CRS		Published		CRS	
	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent
0-14	3,100	*16.5*	387	*9.1*	3,600	*17.6*	393	*7.8*	6,600	*16.8*	780	*8.4*
15-24	4,200	*22.3*	797	*18.8*	6,700	*32.8*	1,945	*38.6*	10,900	*27.8*	2,742	*29.5*
25-44	8,700	*46.3*	2,802	*66.1*	8,100	*39.7*	2,168	*43.0*	16,900	*43.1*	4,970	*53.5*
45-64	2,200	*11.7*	186	*4.4*	1,300	*6.4*	421	*8.3*	3,600	*9.2*	607	*6.5*
65+	600	*3.2*	68	*1.6*	600	*2.9*	140	*2.8*	1,200	*3.1*	208	*2.2*
Total	18,800	*100.0*	4,242	*100.0*	20,400	*100.0*	5,043	*100.0*	39,200	*100.0*	9,285	*100.0*

TABLE 2.5 EMIGRANTS BY AGE GROUP, 1996

	Males				Females				Total			
	Published		CRS		Published		CRS		Published		CRS	
	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent	Actual	Percent
0-14	400	*2.6*	569	*7.4*	600	*3.8*	202	*2.3*	900	*2.9*	771	*4.7*
15-24	9,800	*64.1*	3,750	*48.7*	11,700	*73.6*	6,209	*70.5*	21,400	*68.6*	9,959	*60.3*
25-44	5,100	*33.3*	3,265	*42.4*	3,000	*18.9*	2,478	*28.1*	8,100	*26.0*	5,743	*34.8*
45-64	0	*0.0*	231	*3.0*	700	*4.4*	143	*1.6*	700	*2.2*	374	*2.3*
65+	0	*0.0*	15	*0.2*	0	*0.0*	0	*0.0*	0	*0.0*	15	*0.1*
Total	15,300	*100.0*	7,701	*100.0*	15,900	*100.0*	8,811	*100.0*	31,200	*100.0*	16,512	*100.0*

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	TABLE 2.6 IMMIGRANTS BY COUNTRY OF ORIGIN, 1997											
	Males				**Females**				**Total**			
	Published		**CRS**		**Published**		**CRS**		**Published**		**CRS**	
	Actual	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**
UK	10,200	*47.2*	1,742	*38.9*	9,800	*43.8*	1,564	*32.1*	20,000	*45.5*	3,306	*35.4*
Other EU	3,900	*18.1*	435	*9.7*	4,200	*18.8*	870	*17.8*	8,100	*18.4*	1,305	*14.0*
USA	2,700	*12.5*	966	*21.6*	3,900	*17.4*	814	*16.7*	6,600	*15.0*	1,780	*19.0*
Other	4,800	*22.2*	1,332	*29.8*	4,500	*20.1*	1,629	*33.4*	9,300	*21.1*	2,961	*31.7*
Total	21,600	*100.0*	4,475	*100.0*	22,400	*100.0*	4,877	*100.0*	44,000	*100.0*	9,352	*100.0*
	TABLE 2.7 EMIGRANTS BY COUNTRY OF DESTINATION, 1997											
	Males				**Females**				**Total**			
	Published		**CRS**		**Published**		**CRS**		**Published**		**CRS**	
	Actual	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**
UK	6,400	*43.5*	1,762	*46.7*	6,400	*44.8*	1,452	*43.5*	12,900	*44.5*	3,214	*45.2*
Other EU	1,900	*12.9*	477	*12.6*	2,200	*15.4*	469	*14.0*	4,100	*14.1*	946	*13.3*
USA	2,500	*17.0*	686	*18.2*	1,600	*11.2*	291	*8.7*	4,100	*14.1*	977	*13.7*
Other	3,800	*25.9*	849	*22.5*	4,100	*28.7*	1,127	*33.8*	7,900	*27.2*	1,976	*27.8*
Total	14,700	*100.0*	3,774	*100.0*	14,300	*100.0*	3,339	*100.0*	29,000	*100.0*	7,113	*100.0*

	TABLE 2.8 IMMIGRANTS BY AGE GROUP, 1997											
	Males				**Females**				**Total**			
	Published		**CRS**		**Published**		**CRS**		**Published**		**CRS**	
	Actual	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**
0-14	2,900	*13.4*	945	*21.1*	3,500	*15.6*	495	*10.1*	6,400	*14.5*	1,440	*15.4*
15-24	5,900	*27.3*	809	*18.1*	7,800	*34.8*	963	*19.7*	13,800	*31.4*	1,772	*18.9*
25-44	9,600	*44.4*	2,315	*51.7*	8,600	*38.4*	2,774	*56.9*	18,200	*41.4*	5,089	*54.4*
45-64	2,400	*11.1*	388	*8.7*	2,000	*8.9*	626	*12.8*	4,400	*10.0*	1,014	*10.8*
65+	800	*3.7*	17	*0.4*	500	*2.2*	17	*0.3*	1,300	*3.0*	34	*0.4*
Total	21,600	*100.0*	4,475	*100.0*	22,400	*100.0*	4,877	*100.0*	44,000	*100.0*	9,352	*100.0*
	TABLE 2.9 EMIGRANTS BY AGE GROUP, 1997											
	Males				**Females**				**Total**			
	Published		**CRS**		**Published**		**CRS**		**Published**		**CRS**	
	Actual	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**	**Actual**	**Percent**
0-14	400	*2.7*	85	*2.3*	300	*2.1*	202	*6.0*	700	*2.4*	287	*4.0*
15-24	8,200	*55.8*	1,919	*50.8*	9,600	*67.1*	1,839	*55.1*	17,900	*61.7*	3,758	*52.8*
25-44	5,500	*37.4*	1,460	*38.7*	4,100	*28.7*	1,134	*34.0*	9,600	*33.1*	2,594	*36.5*
45-64	500	*3.4*	297	*7.9*	300	*2.1*	123	*3.7*	900	*3.1*	420	*5.9*
65+	100	*0.7*	13	*0.3*	0	*0.0*	39	*1.2*	100	*0.3*	52	*0.7*
Total	14,700	*100.0*	3,774	*100.0*	14,300	*100.0*	3,339	*100.0*	29,000	*100.0*	7,113	*100.0*

Part 2 Sampling Efficiency of the Country of Residence Survey (CRS)

Chapter 3 Description of methodology

3.1 Statistical background

This section describes the methodology used for the computation of standard errors for the CRS estimate of the number of passengers arriving in/departing from Ireland. The different sources of sampling error in the CRS are assessed; these are due to sampling of sailings/flights on the one hand and to the sampling of passengers on the other.

Each stratum variance is computed as the sum of the variation from both of these sources. Then, since sampling in each stratum is independent of all other strata, the overall sample variance is the sum of the individual stratum variances. The *standard error* (that is, the square root of the sample variance) and *coefficient of variation* (that is, the scaled standard error) can then be easily calculated. Finally, optimal sample sizes are chosen in each stratum using *Neymann's Optimisation Formula*.

3.2 Basic survey methodology

The CRS is a two-stage survey. Stage 1 comprises a sample selection procedure of duty times (called duties) for each interviewer. Duties are randomly selected to cover all major air/sea ports throughout Ireland and to ensure correct representation of day, night, weekday and weekend flights or sailings. The interviewer based at an air/sea port will normally cover all flights/sailings arriving/departing during his/her duty. The samples of duties (usually covering the next quarter) are chosen from a list of flights/sailings at the air/sea ports maintained and constantly updated by the CSO.

Stage 2 of the sampling procedure is undertaken by the interviewer on a particular duty. The interviewer normally takes a systematic sample of 1 in every 5 passengers arriving/departing on a particular flight/sailing.

3.3 Stratification and variance computation methodology for CRS

Due to the volume of traffic at the air/sea ports, it is necessary to introduce additional stratification. This is based on the route of travel (e.g. origin/destination of flight, such as transatlantic), whether flights are scheduled or not, and the mode of sea travel (e.g. foot/car/coach). The structure of the survey resulting from the combination of air/sea ports and these additional stratifications, is a stratified sample having 42 individual sampling strata. The strata are set out in Appendix 5.

Monthly returns giving the total passenger numbers arriving and departing on all flights and sailings are provided by Aer Rianta (The Irish Airports Authority) and by the sea carriers (Stena, Irish Ferries, Brittany Ferries and Cork-Swansea Ferries) according to the 42 CRS strata. CRS results are similarly summarised into the 42 strata and grossing factors calculated. CRS estimates for the total number of persons arriving/departing from each country are then computed.

The proportion of passengers in each stratum sampled on the i^{th} sailing (or flight) from country j is denoted by p_{ij}, that is, n_{ij}/n_i. So the overall proportion of passengers from country j on all k sampled sailings in the month in question is $\sum^k_{i=1} n_{ij}/\sum^k_{i=1} n_i$. Multiplying this quantity by the total passengers N in that stratum gives

$$Y_j = N * \sum^k_{i=1} n_{ij}/\sum^k_{i=1} n_i \qquad (1)$$

This is the CRS estimate for the number of passengers from country j in the relevant month.

The main sources of variation in the CRS estimate for the number of persons arriving/departing from each country in each stratum are:

(a) variation due to the sampling of passengers on selected flights/sailings;

(b) variation due to the sampling of flights/sailings in a month.

The stratum variance is computed as the sum of the variance arising from (a) within sailings/flights and (b) between sailings/flights, above.

Finally, the actual *CRS Standard Error* and *Coefficient of Variation*, based on the $V(Y_j)$ can then be readily calculated.

In the CRS, the cost per unit sampled in each stratum is assumed to be the same. So having found the stratum sampling variances, the optimum sample size (of sailings/flights) in each stratum is calculated, using Neymann's formula. This chooses sample sizes in each stratum proportional to the total number of sailings/flights in that stratum multiplied by the corresponding between sailings/flights stratum variance. Optimum sample sizes calculated in this way are used to estimate the number of duties in each stratum in the same period in the following year.

Chapter 4 Expectation and variance of CRS estimate

4.1 Background

In this chapter we derive the expectation and variance of the CRS estimate for the total number of passengers Y_j in equation (1) given earlier. Firstly, we show that the expectation $E(Y_j)$ is unbiased. Then, the variance formula for the estimate is derived. The following notation is used throughout:

- k = number of sailings sampled in the period in a stratum
- K = total number of sailings in a period in a stratum
- n_i = number of passengers sampled on the i^{th} sailing
- n_{ij} = number of passengers sampled on i^{th} sailing from country j
- n_j = number of passengers sampled on all sailings from country j
- n = number of passengers sampled on all sailings
- f_2 = the sampling fraction within each sailing
- N_i = number of passengers on the i^{th} sailing
- N = number of passengers on all sailings
- G= N/n is the grossing factor.

4.2 CRS Estimate is Unbiased

From equation (1), we have

$$E(Y_j) = N\, E(\textstyle\sum^{k}_{i=1} n_{ij} / \sum^{k}_{i=1} n_i) \qquad (2)$$

This expectation depends upon two random quantities $\sum^{k}_{i=1} n_{ij}$ and $\sum^{k}_{i=1} n_i$

We, therefore, adopt a two-way approach to deriving the expectation, that is, we compute the expectation of the number of passengers n_{ij} conditional upon *i* being fixed; the resulting expectation $E_{/s}$ (for sailings) will depend only on *i*. Then, we compute the overall expectation of all quantities depending upon *i*. Thus,

$$E(Y_j) = N\, E_s\, ((1/\textstyle\sum^{k}_{i=1} n_i)\, E_{/s}\, (\sum^{k}_{i=1} n_{ij}))$$

$$= N\, E_s\, ((1/\textstyle\sum^{k}_{i=1} n_i) \sum^{k}_{i=1} p_{ij}\, n_i) \qquad (3)$$

since $p_{ij}=n_{ij}/n_i$ and taking $E_{/s}\, (\sum^{k}_{i=1} p_{ij}\, n_i)$ to be itself.

Writing k/K for the proportion of all sailings sampled and putting $n_i = N_i f_2$ the overall expectation across all sailings is,

$$E(Y_j) = \frac{N\,(k/K)\,\sum^{K}_{i=1} p_{ij}\, f_2\, N_i}{(k/K)\,\sum^{K}_{i=1} f_2\, N_i}$$

$$= \sum^{K}_{i=1} N_{ij} \qquad (4)$$

Thus, Yj is unbiased.

4.3 Variance of CRS Estimate

The variance for the CRS estimate is computed in a similar way to the expectation via a two-way approach, that is, we compute the variance conditional upon *i* being fixed and obtain its expectation. Then, we compute the variance of the expectation of quantities depending upon *i* alone. Thus,

$$V(Y_j) = N^2 V(\sum^{k}_{i=1} n_{ij} / \sum^{k}_{i=1} n_i) \qquad (5)$$

and adopting the two-way approach, we get (dropping N^2 for convenience),

$$V(Y_j) = V_s\{E_{/s}(\sum^{k}_{i=1} n_{ij} / \sum^{k}_{i=1} n_i)\} + E_s\{V_{/s}(\sum^{k}_{i=1} n_{ij} / \sum^{k}_{i=1} n_i)\} \qquad (6)$$

These are the *between* and *within* sailings components of the variance respectively. The between sailings component can be further evaluated by noting that

$$E_{/s}(\sum^{k}_{i=1} n_{ij} / \sum^{k}_{i=1} n_i) = \sum^{k}_{i=1} p_{ij}\, n_i / \sum^{k}_{i=1} n_i$$

So,

$$V(\sum^{k}_{i=1} p_{ij}\, n_i / \sum^{k}_{i=1} n_i) = 1/E_s(\sum^{k}_{i=1} n_i)^2 \{ V_s(\sum^{k}_{i=1} p_{ij}\, n_i)$$

$$- 2P_j Cov(\sum^{k}_{i=1} p_{ij} n_i, \sum^{k}_{i=1} n_i) + P_j^2 V_s(\sum^{k}_{i=1} n_i)\}, \text{ where } P_j = Y_j/N \qquad (7)$$

The above equation is derived by considering the leading order expansion of the quotient random variable $\sum^{k}_{i=1} p_{ij} n_i / \sum^{k}_{i=1} n_i$.

Each term in the last equation can be estimated as follows:

- $V_s(\sum^{k}_{i=1} p_{ij}\, n_i)$ is estimated across all sailings as $(1-k/K)(k/(k-1))\sum^{k}_{i=1}(n_{ij}-n_j)^2$ where k/K is the proportion of sailings in the relevant period;
- $1/E_n(\sum^{k}_{i=1} n_i)^2$ is estimated by $1/(\sum^{k}_{i=1} n_i)^2$;

- $\mathrm{Cov}(\sum^{k}_{i=1} p_{ij}\, n_i, \sum^{k}_{i=1} n_i)$ is estimated across all sailings as $(1-k/K)(k/(k-1))\sum^{k}_{i=1} (n_{ij}-n_j)(n_i-n)$;

- $V_s(\sum^{k}_{i=1} n_i)$ is estimated by $(1-k/K)(k/(k-1))\ \sum^{k}_{i=1} (n_i-n)^2$.

When these quantities are substituted into the between sailings component of the variance given in equation (7) and using n_j/n in place of P_j, we get

$$V(\sum^{k}_{i=1} p_{ij}\, n_i/\sum^{k}_{i=1} n_i)=(1/n^2)(1-k/K)(k/(k-1))\ \sum^{k}_{i=1} (n_{ij} - n_i n_j/n)^2 \qquad (8)$$

The within sailings component of the variance is easier to evaluate since $\sum^{k}_{i=1} n_i$ does not vary within a sailing. We find

$$E_s\{V_{/s}(\sum^{k}_{i=1} n_{ij}/\sum^{k}_{i=1} n_i)\}=(1/n^2)(1-f_2)\ \sum^{k}_{i=1} n_{ij}(1-n_{ij}/n_i) \qquad (9)$$

Finally, assuming that the average number of passengers on each sailing is fairly constant, we can approximate k/K by $1/f_2G$, where G is the overall grossing factor. Using this and re-introducing the factor N^2, we get the following formula for the variance:

$$V(Y_j)=N^2/n^2\{(1- 1/f_2G)(k/(k-1))\ \sum^{k}_{i=1} (n_{ij}-n_i n_j/n)^2 + (1-f_2)\ \sum^{k}_{i=1} n_{ij}\ (1-n_{ij}/n_i)\} \qquad (10)$$

The standard error formula is the square root of the above variance.

4.4 Standard Errors

Using the above formulae the standard errors (expressed in percentage terms) of the migration estimates for 1996 and 1997 are as follows:

Table 4.1 Standard errors (percent)

Year	Inward		Outward	
	GB	Total	GB	Total
1996	40.0	70.0	50.0	70.0
1997	60.0	50.0	40.0	40.0

Part 3 An analysis of migration between the United Kingdom and Ireland in the period 1981 to 1991[3]

Chapter 5 - Sources of data on migration stocks and flows in Great Britain

5.1 Stocks from the Census of Population

The Census of Population has included a question on country of birth in each Census since 1801 (the first). The 1981 and 1991 Censuses asked:

Country of birth	England
(Please tick the appropriate box)	Scotland
	Wales
	Northern Ireland
	Irish Republic
	Elsewhere
If elsewhere please write in the present name of the country.	_____

The written-in answers to the "Elsewhere" box were allocated a country code from a list of about 100. Responses 'Ireland', were included with Irish Republic, except in tables where "Ireland - part not stated" was shown as a separate category.

Questions on nationality/citizenship have not been included in a British Census since 1971. The current source of information on the population cross-classified by nationality is the Labour Force Survey.

Stock figures from a census on the resident population born outside an area represent a summary picture of historical net migration. Very little can be gleaned from such an analysis on the tempo and magnitude of flows. Thus, for example, a change in the number of persons born in Ireland between two Censuses will be unaffected by persons who have immigrated into Great Britain and emigrated from Great Britain during the period; neither will the change

[3] Part 3 of the present study focuses specifically on Great Britain rather than the United Kingdom as a whole given that most of the migration flows are between the Republic of Ireland and Great Britain. The term Ireland is used to refer to the Republic of Ireland throughout this part of the report.

describe whether there have been big or small annual gross inflows and gross outflows during this period. Stock figures would also be affected by the inflow of Irish born persons who were previously resident in countries other than Great Britain or Ireland. Further, it is difficult to distinguish emigrants from deaths of Irish-born people.

An example of the picture shown by Censuses is given in Tables 5.1 and 5.2 which cross-classify the population by age and sex for 1981 and 1991 respectively. It can be seen that while there was little overall change in the totals of persons born in the Irish Republic (a small drop between 1981 and 1991), there was a significant change in the age structure. In particular, the 1991 population was 'more aged' with a decrease in the population in the main working age group of 30-44 years. This picture highlights the more recent decline in immigration/increase in emigration of 'younger people' with little emigration of those who settled in Great Britain around 20-50 years ago.

Table 5.1 Persons resident in Great Britain and born in Ireland (including Ireland, part not stated), 1981

Age	Males		Females		Persons	
	000	%	000	%	000	%
0-4	1.0	0.3	0.9	0.3	1.8	0.3
5-15	4.4	1.6	4.3	1.3	8.8	1.4
16-19	3.0	1.1	3.3	1.0	6.4	1.0
20-24	9.1	3.2	11.5	3.6	20.6	3.4
25-29	16.6	5.8	19.6	6.1	36.2	6.0
30-34	24.5	8.6	27.7	8.6	52.2	8.6
35-39	29.2	10.2	32.3	10.0	61.5	10.1
40-44	31.4	11.0	33.6	10.4	65.0	10.7
45-49	32.6	11.4	34.4	10.7	66.9	11.0
50-54	32.0	11.2	34.7	10.8	66.6	11.0
55-59	30.9	10.8	31.8	9.9	62.7	10.3
60-64	26.7	9.4	29.4	9.1	56.1	9.2
65+	43.8	15.4	58.9	18.3	102.7	16.9
Total	**285.2**		**322.4**		**607.5**	

Table 5.2 Persons resident in Great Britain and born in Ireland (including Ireland, part not stated), 1991

Age	Males		Females		Persons	
	000	%	000	%	000	%
0-4	1.8	0.7	1.6	0.5	3.4	0.6
5-9	3.9	1.4	3.7	1.2	7.6	1.3
10-14	3.6	1.3	3.6	1.1	7.1	1.2
15-19	3.8	1.4	4.3	1.4	8.2	1.4
20-24	12.2	4.4	16.6	5.2	28.8	4.9
25-29	18.1	6.6	18.6	5.8	36.7	6.2
30-34	15.3	5.6	16.4	5.2	31.7	5.4
35-39	18.2	6.6	20.7	6.5	38.8	6.6
40-44	24.4	8.9	27.4	8.6	51.8	8.7
45-49	28.7	10.5	31.3	9.8	60.0	10.1
50-54	30.0	10.9	31.7	10.0	61.7	10.4
55-59	29.8	10.9	31.7	10.0	61.6	10.4
60-64	27.0	9.8	30.8	9.7	57.8	9.7
65+	57.5	20.9	79.9	25.1	137.3	23.2
Total	**274.3**		**318.3**		**592.5**	

5.2 Flows from the Census of Population

The 1981 and 1991 Censuses of Great Britain included questions on usual residence one year ago. Earlier Censuses also included a question of usual residence one year ago. The form of the one year question was:

Usual address one year ago

If the person's usual address one year ago (on 21st April) was the same as his or her current usual address (given in answerto question 7), please tick 'Same'. If not, tick 'Different' and write in the usual address one year ago.

Same as question 7 1

Different 2

Child under one 3

If everyone on the form has moved from the same address, please write the address in full for the first person and indicate with arrows that this applies to the other people on the form.

If different, please write the person's address and postcode on the 21st April below in BLOCK CAPITALS.

For a child born since the 21st April 1990, tick the 'Child under one' box.

_____

_____

_____

_____

Postcode_____

A migrant within one year preceding the Census is a person with a different usual address one year ago to that at the time of the Census. The usual address at the Census provides the area of destination and the usual address one year ago the area of origin. Hence a person with a usual address in Great Britain at the time of the Census, but a usual address in the Irish Republic one year ago is an immigrant into Great Britain. There is no information on when the person entered Great Britain, or how long the person intends to remain, only that there is a reported change of usual residence. Thus there is an element of intention implicit in the answers of long-term migration, based on the international recommendations of change of usual residence of more than one year.

Moreover, certain categories of change of usual residence during the reference period are excluded from the statistics for the following reasons:

- children age under one at Census date (though they can be included as a member of a household which moves)
- persons who died before Census date
- migrants usually resident in Communal establishments but who were absent on census night (not enumerated at usual address)
- persons who emigrated overseas.

Further, in the case where a person moved more than once during the year before Census date, only the net result of the moves is recorded.

An example of the statistics available from the Census on migration is shown in Table 5.3 (no allowance has been made for under-reporting of migration, or under-coverage in the 1991 Census). The inflows follow the traditional pattern of young adults, males and females.

Table 5.3 One year inflows from Ireland (including Ireland Part not stated) to Great Britain, 1991

Age	Males	Females	Total
1-4	389	304	693
5-9	318	306	624
10-14	239	241	480
15-19	640	955	1595
20-24	2119	2818	4937
25-29	1281	1258	2539
30-34	566	530	1096
35-39	371	280	651
40-44	286	217	503
45-49	211	150	361
50-54	147	118	265
55-59	97	95	192
60-64	59	69	128
65-69	48	47	95
70+	47	126	173
Total	**6818**	**7514**	**14332**

5.3 Flows from the National Health Service Central Register

The National Health Service Central Register (NHSCR) is used to identify patients who move from one Family Health Service Authority (FHSA) to another within England and Wales and patients who register with an FHSA after living in Scotland, Northern Ireland or abroad. The people registering after residence abroad could be individuals who have previously resided in the country or who have taken up residence in England and Wales for the first time. Individuals who were born in Ireland and are registering with an FHSA for the first time can be identified using the Central Register.

The NHSCR will also identify Irish born people who leave England and Wales but only if these individuals inform their FHSAs of their intention to leave or if a notification of embarkation is sent to the Central Register by a government agency or by an agency dealing with the payment of pensions. Data on embarkations between England and Wales and Ireland obtained from NHSCR are not sufficiently complete to provide reliable estimates of out-migration from England and Wales and will not be discussed further.

Estimates of in-migration from Ireland produced from the NHSCR data are deficient in a number of respects. These include:

a) The impact of any delay between entering England and Wales and registering with an FHSA. Families with children and single women tend to register fairly quickly after arriving but fit and healthy single men often only register when they become ill. Some migrants who stay in England and Wales for a short period, say 2 years, might never register.

b) Irish-born people who have left England and Wales but return after a period in Ireland will not be identified unless their National Health Service (NHS) number cannot be traced and they are issued with a new one.

c) Some of those registering with an FHSA will stay in England and Wales for less than a year; the UN definition of a migrant is a person staying in the country for more than a year.

Table A1 of the Appendix Tables contains estimates of the age and sex distribution of migration from Ireland to England and Wales for the period 1980 to 1991 for males and females respectively. Figures for 1980 to 1983 are estimates produced from 10 per cent samples of registration at the NHSCR. Those for 1984 to 1991 are obtained from 100 per cent counts.

5.4 Flows from the Labour Force Survey

The first UK Labour Force Survey (LFS) was carried out in 1973. From 1973 to 1983 the LFS was carried out biennially and from 1984 onwards it became an annual survey. For

the period 1984 to 1991 the survey consisted of two elements: a quarterly survey of 15,000 private households in Great Britain (GB) conducted throughout the year; plus a 'boost' survey carried out in the March to May spring quarter of over 44,000 private households in GB and 4,000 households in Northern Ireland. Thus the spring quarter's survey was based on over 60,000 households.

A number of changes in the survey were introduced in 1992, the most important being the introduction of an element of overlap between quarters in GB. Each quarter's sample is made up of five 'waves', each consisting of about 12,000 households. Every sampled address in a wave is interviewed in five successive quarters so that about 60,000 households are included in each quarter. A new wave is added and one dropped each quarter. The sample became an 'unclustered' sample of addresses selected from a comprehensive Address File of private households. In addition, students living away from home in halls of residence or in National Health Service accommodation such as nurses' homes were included in the sample for the first time. This greatly improved the coverage of young people in the survey.

The LFS includes the following question:

Where was _____ living one year ago?

IF IN UK: Town_____

County _____

IF OUTSIDE UK: Country _____

Using the responses to this question it is possible to identify people living in GB and Northern Ireland who lived in the Irish Republic one year before. Estimates of in-migration from the Irish Republic can therefore be produced from the LFS. However, there are a number of deficiencies. These include:

a) Migrants are more likely to be among non-respondents than non-migrants.

b) Single migrants are likely to be among non-respondents more frequently than married migrants.

c) None of the respondents who lived in the Republic one year ago will have been in the UK for a year. Some of these will stay in the UK for less than a year; the UN definition of a long-term migrant is a person staying in the country for more than a year.

Table 5.4 below shows the estimated number of migrants from Ireland classified by sex from the LFS in 1991.

Table 5.4 One year inflow from Ireland classified by sex, UK LFS 1991

Males	Females	Persons
3321	4160	7481

The deficiencies mentioned above coupled with the relatively small sample size of the UK LFS imply that this source is not entirely suitable for use in measuring migration flows.

5.5 Demographic Accounting

For the period 1981 to 1991 it is possible to calculate an estimate of net migration into Great Britain (GB) using results from the 1981 and 1991 Censuses plus information from the deaths registration system. This calculation can be described in an arithmetical form as follows:

Equation A

Stock of Irish born persons in GB at the 1991 Census	-	Stock of Irish born persons in GB at the 1981 Census aged on to appropriate 1991 age in 1991.	-	Deaths in GB of Irish born persons in the period 1981-1991 aged on to appropriate age in 1991.

=

Net migration between Ireland and Great Britain[4]

Net migration for the same period can also be calculated from annual estimates of the migration flows from Ireland to GB and vice versa. This can also be described in arithmetical form as shown below:

Equation B

$\sum_{I=81/82}^{I=90/91}$	Migration from Ireland to GB in year I and aged on to appropriate age in 1991.	-	$\sum_{I=81/82}^{I=90/91}$	Migration from GB to Ireland in year I and aged on to appropriate age in 1991.

=

Net migration between Ireland and Great Britain

[4] Covers Irish born persons only.

Results from the method described by equation A would probably be considered more accurate than those described by equation B because the former is based on stock estimates and a reliable death registration system compared with the latter which is based on flows which are usually subject to larger errors. It is, therefore, possible to compare alternative estimates of flows with an 'acceptable standard'. [Clearly, this standard is not perfect but it is likely to be the best estimate available particularly if the undercounts in each census are about the same.]

Examples of using the standard for males and females separately are shown in Tables 5.5 and 5.6. In this case the annual estimates of migration flow from GB to Ireland have been obtained from the Irish Labour Force Survey (LFS) and the 1981, 1986 and 1991 Censuses carried out in Ireland. Data for 1982 (a year when no Irish LFS or Census was carried out) was interpolated from Irish Census data in 1981 and LFS data in 1983.

Currently, the Irish LFS and Censuses are the only sources of data that can be used to estimate the flow from GB to the Republic. These data include Irish-born, GB-born and foreign-born who were resident in GB in the previous year but a correction factor has been applied to produce an estimate of Irish-born only. Annual estimates of migration flows from Ireland to GB have been obtained from the NHSCR and include Irish-born only.

Table 5.5 Net Inward Migration of Irish-born males from Ireland to GB

Age[5]	Net migration from stocks 1981-1991	Net migration from flows 1981-1991	Differences
	(A)	(B)	(A)-(B)
0(1)-4	1801	1555	246
5-9	3920	4044	-124
10-14	2631	3455	-824
15-19	2212	3374	-1162
20-24	10168	8648	1520
25-29	14481	14678	-197
30-34	6423	9562	-3139
35-39	1940	4624	-2684
40-44	618	2647	-2029
45-49	677	1907	-1230
50-54	489	1088	-599
55-59	490	365	125
60-64	86	-104	190
65-69	-211	-433	222
70+	-1064	-690	-374
Total	**44661**	**54720**	**-10059**

[5] Migration of individuals aged under 1 cannot be obtained from Censuses or Labour Force Surveys.

Table 5.6 Net Inward Migration of Irish-born females from Ireland to GB

Age[6]	Net migration from stocks 1981-1991	Net migration from flows 1981-1991	Differences
	(A)	(B)	(A)-(B)
0(1)-4	1623	1533	90
5-9	3718	4048	-330
10-14	2699	3611	-912
15-19	2665	5409	-2744
20-24	14385	14214	171
25-29	14894	18415	-3521
30-34	4979	8052	-3073
35-39	1194	2603	-1409
40-44	-10	973	-983
45-49	-422	518	-940
50-54	-823	215	-1038
55-59	-901	-144	-757
60-64	-1099	-527	-572
65-69	-394	-701	307
70+	2077	-206	2283
Total	**44585**	**58013**	**-13428**

The total figures in Tables 5.5 and 5.6 show that overall net migration in the period calculated from Census stock counts is lower than overall migration calculated from data on flows obtained from the Irish LFS and NHSCR. This finding applies to both males and females. Although the age distributions produced by each method are similar the difference between the methods is not uniform for each age-group. Indeed, sometimes net migration calculated from flows is lower than that calculated from stocks. Some of these differences might be explained by the inevitably crude process used for ageing on individuals which was based on Census counts available in 5 year and occasionally 10 year or more age-groups. There are also a number of other factors that would contribute to the difference in net migration from stocks versus net migration from flows:

a) Multiple and late registration at NHSCR would both increase net migration from flows and cause greater variability across age groups. Younger migrants are likely to register with a general practitioner only when they become ill and to forget their National Health Service numbers when they move from one area to another. This is likely to happen if they return to Ireland for a period and then migrate to a new area in GB. When they register with a new general practitioner they will be allocated a new NHS number unless details of their previous medical history can be established.

b) Migrants from Ireland could move to other countries and not be counted in the GB Census. Data available from the International Passenger Survey for the period 1980 to 1990, inclusive, suggests the net effect of this is small; a net outflow of about 1,000 males and 2,500 females.

[6] Migration of individuals aged under 1 cannot be obtained from Censuses or Labour Force Surveys.

c) Data on migrants from the Irish LFS and NHSCR have been aged on but have not been adjusted to allow for deaths to the stock of net migrants from these sources that could have occurred between 1981 and 1991.

The flows of migrants between Ireland and GB includes people born in GB and elsewhere as well as the Irish-born mentioned above. Table 5.7 shows the net inward migration from Ireland to GB using the Irish LFS and NHSCR data with a correction factor to estimate migrants born in GB, the Irish Republic and elsewhere.

Table 5.7 Net Inward Migration[7] from Ireland to GB in the period 1981-1991

Age[8]	All Males	All Females
0(1)-4	1197	1175
5-9	4348	4280
10-14	3226	3353
15-19	3085	5669
20-24	9728	16143
25-29	18457	21772
30-34	12892	9769
35-39	6744	3353
40-44	4072	1342
45-49	3144	952
50-54	1746	465
55-59	607	-86
60-64	-108	-538
65-69	-496	-713
70+	-451	277
Total	**68191**	**67213**

The total figures in Table 5.7 are likely to be affected by multiple and late registration at NHSCR as mentioned above.

[7] Includes migrants born in all countries.

[8] Migration of individuals aged under 1 cannot be obtained from the Irish Labour Force Survey but can be obtained from NHSCR.

Chapter 6 - Sources of data on migration stocks and flows in Ireland

6.1 Background

Tables 5.1 and 5.2 earlier in the report provided stock figures for the number of Irish born persons usually resident in Great Britain in 1981 and 1991. Table 6.1 compares these numbers with the those for Irish residents enumerated in the corresponding Irish Censuses of Population[9].

Table 6.1 Irish born persons resident in Great Britain and Ireland, 1981 and 1991
000s

Year	Great Britain	Ireland	GB (GB+Irl) %
1981	607.5	3211	15.9
1991	592.5	3297	15.2

We can readily see from this table that in absolute terms approximately one sixth of the combined Irish born population in both areas resided in Great Britain, thus illustrating the importance of Great Britain as a destination for Irish migrants.

6.2 Stocks from the Census of Population

Censuses were held in Ireland in 1981, 1986 and 1991. The population enumerated in the census are persons present in Ireland on Census Night. i.e. the de-facto measure. Therefore, usual residents who are temporarily absent from Ireland at the time of the census are not enumerated, while visitors present in Ireland at census time are.

The number of usual residents of the Republic of Ireland who were enumerated in Great Britain in the 1991 census was just under 8,000. Britain is one of the most likely destinations for persons absent from Ireland at any particular time. The figure quoted represents just over 0.2 per cent of the Irish population leading one to the conclusion that the measurement error represented by Irish residents temporarily absent at census time is likely to be insignificant.

On the other hand the number of visitors in Ireland at census time was about 0.7 per cent. These persons have been excluded from any reckoning of migration. Overall, therefore, the de-facto measure is not likely to exert any undue influence on migration stocks and flows figures derived from the census.

No question on nationality has ever been asked on a Census of Population.

[9] Censuses were held on the same day in the United Kingdom and Ireland in 1981 and 1991

The following question on place of birth was asked in the 1981, 1986 and 1991 censuses:

PLACE OF BIRTH

If born in Ireland state the **County**.

If born elsewhere state the **Country**.

The responses to the question were coded on the basis of a list of counties and countries. Table 6.3 gives the main results for 1981, 1986 and 1991.

Table 6.3 Birthplaces of usually resident population in the 1981, 1986 and 1991 Censuses of Population

Birthplace	1981		1986		1991	
	000	%	000	%	000	%
Republic of Ireland	3205	93.5	3311	94.0	3289	93.9
Northern Ireland	39	1.1	36	1.0	35	1.0
Great Britain	142	4.1	138	3.9	133	3.8
Elsewhere	41	1.2	40	1.1	46	1.3
Total	**3427**	**100.0**	**3525**	**100.0**	**3502**	**100.0**

The importance of Great Britain from an Irish migration perspective is evident from this table.

6.3 Flows from the Census of Population

A question on usual residence at the time of the Census and one year previously was asked in the 1981, 1986 and 1991 censuses. The shortcomings inherent in this question have been pointed out in section 5.2 above. The formulation of the question on usual residence one year before the census was as follows:

USUAL RESIDENCE ONE YEAR AGO

If the person's usual residence one year ago was the same as that given in Q.8, write "**Same**".
If not write the usual address at that time.
For children under one year old, write "**Under** 1".

Given the importance of migration historically in Ireland a question on long term migration was introduced in the 1986 census. The question covered persons who lived outside Ireland (Republic) for more than one year. The formulation of the question was as follows:

PREVIOUS RESIDENCE IN ANOTHER COUNTRY

If the person lived outside Ireland (Republic) **for a period of one year or more** please indicate

The year of taking taking up residence in Ireland (Republic)	Country of last previous residence

The results from the 1991 census indicated that over 10 per cent of the usually resident population were abroad for a continuous period of one year or more. Over three quarters of these persons gave the United Kingdom as their country of last previous residence. Moreover, nearly 4 out of every 10 persons who lived abroad for more than one year took up residence in Ireland in the ten years before the census while a further 30 per cent returned in the preceding decade.

6.4 Stocks and Flows from the Labour Force Survey

Labour Force Surveys (LFS) have been held in Ireland in 1975, 1977, 1979, 1981, and annually since 1983. The 1981 survey was based on an advance sample from the 1981 Census of Population. The sample covers about 5 per cent of households (private and non-private) in Ireland. The population coverage is usual residents. The survey is governed by an EU Regulation.

The LFS is a rich source of data on migration stocks and flows. In all surveys since the first, questions have been asked on:

- **nationality**; and
- **country of residence one year before the survey** along with date and month of arrival in Ireland

Country of birth was first asked in the 1992 survey as was the **year of taking up residence** for people born outside Ireland.

In addition to the usual demographic and socio-economic variables associated with surveys of this type it is also possible to derive information on the economic status of persons one year before the survey. This is an important consideration for migration flows which are driven by labour market forces, as much of the Irish migration flows are.

A question on **emigration** was introduced in 1985. The wording was as follows:

> Did any person who usually lived in the household **EMIGRATE** since April 19xx?

This version of the question was also asked in 1986 and 1987. However, because of a perceived understatement of migration the question was softened in 1988 and remains the same up to the present. This version is:

> Is there anyone who usually lived in the household in April 19xx who is now **living abroad**.

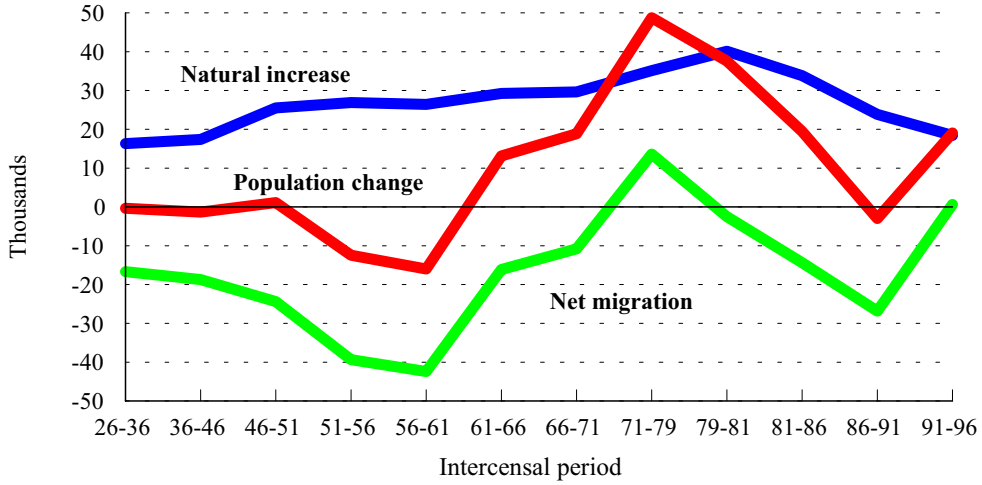
The following information is asked of the individuals involved: sex, age group, country of destination and month of departure.

Because the LFS is not able to capture whole households that have emigrated, the estimates of out-migration derived from the above source are an underestimate of the true level of out-migration. The 1986/1991 intercensal comparison estimated the level of understatement to be about 25 per cent.

6.5 Importance of Migration

The only definitive source of migration data in Ireland is the figure for net migration which is obtained by comparing successive population counts from Censuses of Population and making allowances for births and deaths in the intercensal period. The following graph illustrates the central importance of migration in determining the overall level of the Irish population. The time span covered is the various intercensal periods since 1926 - the year in which the first census was held in the independent Irish State.

Figure 6.1 Average annual components of population changes, 1926-1996



The graph illustrates how the volatility of Irish migration flows impacts on the rate of change in the Irish population. The only two intercensal periods to show net inward migration were 1971-1979 and 1991-1996, the latter albeit on a modest scale. The decision not to take a census in 1976, because of Government economy measures, unfortunately co-incided with a period in which major inward migration occurred. Most of this was in fact return migration from Britain of those who emigrated during the fifties when Ireland experienced a major economic depression. Many of the migrants who returned were accompanied by their children who were born outside Ireland. Britain was the primary source of this in-migration.

Because of the volatility of migration the decision to have five yearly censuses has since become the norm. Indeed the decision to cancel the 1976 census was overturned shortly thereafter when a census was taken in 1979[10].

6.6 Method of estimating migration in Ireland

The principal source of information for the estimation of annual gross migration flows is the Labour Force Survey (LFS). Net migration is first estimated using a range of migration indicators. These include the LFS, the continuous Country of Residence Survey of passengers which is conducted at seaports and airports and administrative sources such as the Register of Electors and the register of children for whom childrens' allowances are paid.

[10] Only six questions were asked ie name, age, sex, relationship to person on line 1 and marital status (2 questions).

The responses to the questions in the LFS on usual residence at the time of the survey and usual residence one year before the survey provide an estimate of one year inflows (in-migration) classified by age, sex and country of origin. The difference between the net migration and in-migration totals gives out-migration. The LFS also provides the basis for the breakdown of out-migration by age, sex and country of destination.

An independent check is made of the accuracy of the derived gross migration flows for intercensal periods by comparing successive population figures classified by age and sex and deducting the natural increase (ie births less deaths). The reconciliation carried out for the 1986-1991 period indicated that out-migration had been underestimated by about 25 per cent. This arose mainly because complete families (including one person households) which had emigrated had not been recorded in the LFS measure of outflows. However the reconciliation afforded by the census allowed this underestimation of outflows to be corrected for each of the intercensal years.

6.7 Comparison of Census and LFS results

Given the reliance placed on the LFS results for estimating migration, the one year inflows derived from that source for 1991 are compared with the corresponding census results in the following tables and charts. Firstly country of origin is explored in Table 6.4.

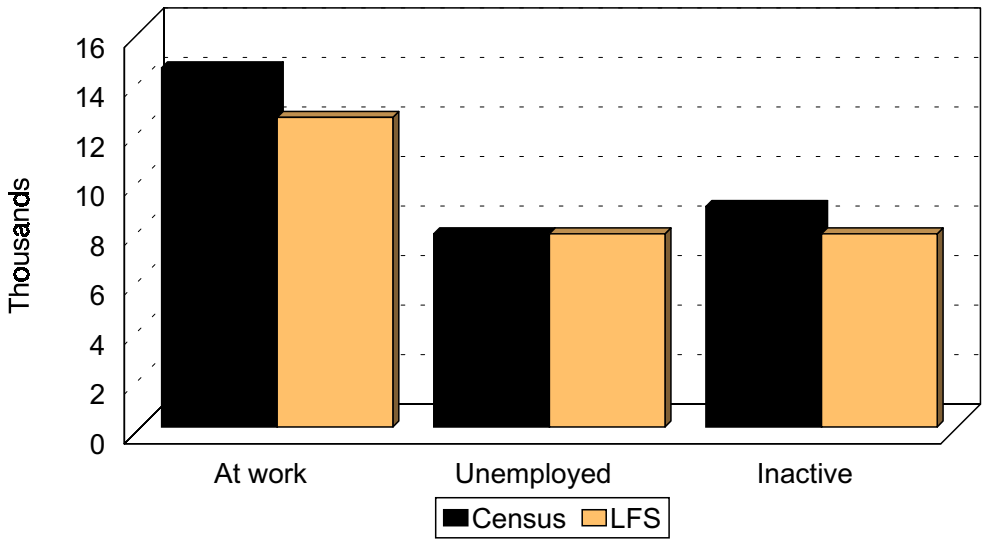
Table 6.4 Country of origin - Census and LFS 1991

Country of Origin	Census		LFS	
	000	%	000	%
Great Britain	20.5	55.0	17.7	53.1
Rest of EU	5.2	14.1	5.1	15.4
USA	4.5	12.0	4.3	13.0
Rest of World	7.1	18.9	6.2	18.5
Total	37.3		33.3	

While there is a discrepancy of some 4,000 (12 per cent) in the absolute levels from both sources this is mitigated somewhat by the degree of concordance in the percentage distribution of the country of origin of the one year in-migrants. The level of agreement in terms of the male/female composition of the inflows is also fairly reasonable with the Census showing 49.7 per cent females compared with 47.3 per cent for the LFS.

The population 15 years of age and over accounted for 83.7 per cent of the census one year inflows compared with 84.3 per cent for the LFS. Figure 6.2 gives a pictorial representation of the breakdown of this population by principal economic status ie at work, unemployed or inactive.

Figure 6.2 One year inflows by principal economic status, Census and LFS 1991



While the numbers of unemployed agreed well in both sources the LFS slightly understated the numbers of persons at work and inactive but not to any appreciable extent.

A similar level of agreement is evident when the results from both sources are analysed by marital status. Table 6.5 provides the details.

Table 6.5 Percentage distribution of one year inflows by marital status, Census and LFS 1991

Marital Status	Census	LFS
Single	64.8	64.2
Married	30.7	31.2
Widowed	1.2	1.6
Other	3.3	2.9

Finally, turning to the area of current residence of the one-year in-migrants the figures in Table 6.6 from both the Census and the LFS are broadly in agreement.

Table 6.6 One year inflows by area of current residence, Census and LFS 1991

Area of current residence	Census		LFS	
	000	%	000	%
East	16.7	44.6	16.1	48.2
South-West	5.1	13.7	5.1	15.3
South-East	3.3	8.9	2.6	7.8
North-East	1.5	4.1	1.0	3.0
Mid-West	3.1	8.4	3.1	9.2
Midlands	2.0	5.3	2.0	5.9
West	3.4	9.0	2.7	8.2
North-West/Donegal	2.2	6.0	0.8	2.5
Total	**37.3**	**100.0**	**33.3**	**100.0**

Overall, on the basis of the available evidence for 1991, the LFS appears to offer a fair reflection of the picture that would be likely to emerge from a full census. Using the LFS results for migration purposes therefore does not pose too great a risk of being seriously in error.

6.8 Demographic Accounting

Following the procedure elaborated in Equation A in section 5.5 it is possible to estimate the number of persons born in Great Britain who emigrated from Ireland to Great Britain in the period 1981 to 1991. The Censuses of Population of 1981, 1986 and 1991 provide stock figures on number of persons born in Great Britain who were resident in Ireland at the time of the relevant censuses. The responses to the question on long term migration (ie those who were outside the country for a period of more than one year) in the 1986 and 1991 censuses enabled an estimate of the number of British born in-migrants from Great Britain to be derived.

By applying the general age specific mortality rates to the stock of British people in Ireland an estimate of the number of deaths can be made. Ageing on the population each year after adjustment for in-migration and deaths and comparing with the results of the next census allows gross outflows to Great Britain of persons born in Britain to be estimated. Table 6.7 shows the calculations for the period 1981 to 1991.

Table 6.7 Demographic accounting of British born persons in Ireland, 1981-1991

Age group 1991	Populat-ion 1981	Inflows 81-86	Deaths 81-86	Outflows 81-86	Populat-ion 1986	Inflows 86-91	Deaths 86-91	Outflows 86-91	Populat-ion 1991
0-4	-	-	-	-	-	3381	-	-	4710
5-9	-	1920	-	-	2277	2827	7	191	4906
10-14	5736	3700	16	1243	8177	1834	7	811	9193
15-19	17213	3126	14	1817	18508	1293	27	2749	17025
20-24	29814	2535	43	3446	28860	2455	88	10434	20793
25-29	26177	1909	80	6195	21811	3005	69	5863	18884
30-34	15194	1741	48	2527	14360	2019	48	1872	14459
35-39	8092	1356	27	1272	8149	1313	36	964	8462
40-44	7789	1144	34	1382	7517	1075	46	795	7751
45-49	5858	703	36	919	5606	695	62	569	5670
50-54	5479	489	61	735	5172	614	97	398	5291
55-59	3425	295	64	447	3209	434	108	201	3334
60-64	3014	281	101	371	2823	467	165	180	2945
65-69	2955	286	173	317	2751	453	267	46	2891
70+	11042	571	2763	402	8448	505	2625	64	6264
Total	**141788**	**20056**	**3460**	**21073**	**137668**	**22370**	**3652**	**25137**	**132578**

Strictly speaking, the inflows of 0-4 year olds in the period 1986-1991 should agree with the stock of 0-4 year olds as measured in the 1991 census. However, this is not the case. There is an understatement of the order of 28 per cent in the in-migration for this age group as measured by the census question on long-term migration[11]. This understatement may also hold for other age groups. To the extent that inflows over the five year period may be understated then outflows will be understated by a corresponding amount because of the accounting identity:

$$O_{86/91} = P_{86} + I_{86/91} - D_{86/91} - P_{91}$$

A similar situation exists for the earlier period 1981-1986.

[11] For this reason the column totals at the end of Table 6.7 are not in balance. The amount of the discrepancy is the difference between the two figures for those aged 0-4 years.

Chapter 7 - Reconciliation of data sources

7.1 One year inflows to both jurisdictions

Table 7.1 summarises the data on one-year inflows from the Censuses and Labour Force Surveys of Ireland and Great Britain. The reference year is 1991.

Table 7.1 One year inflows based on 1991 Censuses and Labour Force Surveys

Origin/Destination	Census	Labour Force Survey
	000s	000s
Ireland to Great Britain	14.3	7.5
Great Britain to Ireland	20.5	17.7

As stated earlier the UK Labour Force Survey is not a reliable source of data on annual migratory flows. The sample size is the main factor which hinders its usefulness for this purpose. Non-response is also likely to be a factor especially in the younger age-groups which are most prone to migration. On the other hand the Irish Labour Force Survey compares well with the Census, not alone in terms of the magnitude of one year inflows, but also in terms of the structural composition of these flows as evidenced by the comparisons in section 6.7.

7.2 Outflows from Ireland of British born persons

About a quarter of the inflows into Great Britain in the five year period 1986-1991 were of British born persons. The source for this data is the UK Labour Force Surveys carried out for the years in question[12]. Using this proportion and applying it to the estimated Irish outflow data to Great Britain yields an estimate of approximately 44,000 British born persons emigrating to Great Britain during 1986 to 1991. Following the demographic accounting model in Table 6.7 an estimated 25,000 British born persons were reckoned to have emigrated to Britain in the intercensal period 1986/1991. The discrepancy between this figure and the 44,000 referred to in the previous paragraph calls for some comment.

In the first instance the outflow figure in Table 6.7 is estimated as a residual after allowance has been made for inflows and deaths. As already explained the long term inflow question in the Irish census appears to underestimate the "real" extent of inward migration. Correspondingly outward migration would also be underestimated given that it is derived as a residual. Assuming the undercoverage to be of the order of 30 per cent (based on the evidence of the 0-4 age group) would result in an adjusted outflow of 36,000. Allowing for

[12] While the UK LFS may not be a reliable source of annual migration data in aggregate terms, the breakdown by country of birth of the one year inflows is unlikely to be seriously in error.

the fact that the one year outflow data contains a mixture of short-term and long-term migrants while the figure derived from the stocks relates more closely to long-term migrants only, the difference between both sources is of an acceptable level.

7.3 Net migration from stocks

Combining the data derived from the demographic accounting model for both Great Britain and Ireland enables an estimate of the net migration of British born and Irish born persons from Ireland to Great Britain to be derived. The derivation is given in Table 7.2.

Table 7.2 Net migration from Ireland to Great Britain from stock data, 1981-1991

Description	Table number	Origin/destination	Total flow (000)
Irish born males	5.5	Ireland to GB	44.7
Irish born females	5.6	Ireland to GB	44.6
British born 1981/86	6.7	Ireland to GB	21.1
British born 1981/86	6.7	GB to Ireland	-20.1
British born 1986/91	6.7	Ireland to GB	25.1
British born 1986/91	6.7	GB to Ireland	-22.4
Total			**93.0**

The above total can be compared with the Table 5.7 figure of 135,000 which was derived from flows. The latter relates to net inward migration from Ireland to Great Britain of persons of all places of birth. The qualification regarding the understatement inherent in the stock approach which was referred to in section 7.2 applies equally well to the data in Table 7.2. Furthermore the latter data only refers to Irish and British born persons. The combined total would need to be adjusted upward (very slightly admittedly) to ensure that it is compatible with the coverage of Table 5.7. When allowance is made for both of these adjustments the resultant discrepancy is within acceptable limits.

7.4 Comparison of published and estimated sources

A new series of gross migration flow estimates for Ireland was introduced in 1994 covering the period 1987 to 1993. These estimates have since been updated on an annual basis. The flows are classified by four origin/destinations (including United Kingdom) and by broad age group and sex. Examining these flows for the five year period 1986-1991 yields an estimate of 100,000 for net migration between Ireland and the United Kingdom. Internal unpublished sources estimate the corresponding figure for the five year period 1981-1986 as 39,000. In total therefore for the ten year period 1981-1991 it is estimated that net outward migration to the United Kingdom was 139,000.

Table 5.7, which is based on British data, estimates net outward migration from Ireland to Great Britain in the period 1981-1991 to be 135,000. While some downward adjustment would have to be made to the Irish based data in order to give the GB content of the UK flows this would be unlikely to exceed 5 per cent. The resultant level of agreement is fairly reasonable.

Part 4 Overall assessment of project

Chapter 8 Findings and recommendations

8.1 Enhancement of Country of Residence Survey

The reason for enhancing the CRS was to determine whether the specific focus on the migration part of the survey would be likely to achieve an improvement in the quality of the information provided as well as supplying breakdowns which were formerly not available (i.e. by age, sex and country of origin/destination). Improvements were not, however, to be at the expense of a possible deterioration in the quality of the CRS itself.

On a practical level the introduction of two additional forms (see appendices 1.3 and 1.4) proved to be an added burden for the enumerators operating in sea and air ports. The feedback from the field suggested that asking the additional details where a migrant was encountered ran the risk of missing out on other passengers who in the normal course of events would be candidates for interviewing in the CRS.

As to the validity of the data collected during the course of the two year period during which the enhanced CRS operated, the finding in paragraph 2.5 indicated that the differences in magnitude between the CRS and the published migration figures persisted during this period.

8.2 Further examination of census data

Comparing the results of the responses to the questions on usual residence one year ago and previous residence in another country (see paragraph 2.3) gives an indication of the composition of the one year inflow figures between short-term and long-term migration. The relevant details classified by country of previous residence and age group are set out in tables 8.1 and 8.2.

Table 8.1 One year inflows distinguishing long-term migrants who have returned since 1995 classified by usual residence one year previously (000s)

Country of previous residence	Persons			Males			Females		
	Total	Long-term	% of Total	Total	Long-term	% of Total	Total	Long-term	% of Total
UK	20.7	18.3	*88.4*	10.3	9.1	*88.2*	10.5	9.3	*88.6*
Other EU	7.5	5.7	*76.6*	3.1	2.5	*79.1*	4.4	3.3	*74.8*
USA	5.1	4.4	*86.0*	2.4	2.0	*86.1*	2.7	2.3	*86.0*
Other countries	7.3	6.0	*82.0*	3.5	2.9	*82.4*	3.8	3.1	*81.5*
Total	40.6	34.4	*84.8*	19.2	16.4	*85.5*	21.3	18.0	*84.2*

Table 8.2 One year inflows distinguishing long-term migrants who have returned since 1995 classified by age group (000s)

Age group	Persons			Males			Females		
	Total	Long-term	% of Total	Total	Long-term	% of Total	Total	Long-term	% of Total
0-14 years	6.8	6.2	*92.0*	3.4	3.1	*91.8*	3.4	3.1	*92.1*
15-24 years	10.5	7.6	*72.5*	4.1	3.0	*73.5*	6.4	4.6	*71.9*
25-44 years	18.2	16.0	*87.9*	9.1	8.0	*87.3*	9.1	8.1	*88.5*
45-64 years	3.8	3.4	*90.2*	2.0	1.8	*90.6*	1.8	1.6	*89.7*
65 years and over	1.2	1.1	*87.7*	0.6	0.5	*86.4*	0.7	0.6	*88.9*
Total	40.6	34.4	*84.8*	19.2	16.4	*85.5*	21.3	18.0	*84.2*

While the overall percentage of one year inflows who spent one year or more outside the country was about 85 per cent the proportion varied between the UK and the remaining countries. Surprisingly, given the proximity of the UK to Ireland, the migration flows between both jurisdictions contain a higher proportion of long-term movements than for the other country groupings indicated. Further analysis of the data indicates that a relatively higher proportion of the one year inflows from the UK are in the age groups 25 years and over. The composition of the inflows between short-term and long-term[13] are remarkably similar for both sexes.

The analysis between age groups also indicates some interesting variations. The most volatile age group from a migratory perspective is that aged 15-24 years. The relatively low proportion of long-term migrants in the one-year inflows for this age group indicates the extent to which younger people tend to migrate for shorter periods. The proportion of long-term migrants increases with age through the 25-44 year age group to the 45-64 age group. The high proportion for 0-14 year olds undoubtedly reflects the fact that most of these are likely to be the foreign born children of returning migrants.

8.3 Comparing CRS and inflow data

Based on the analysis in the previous section the expected CRS figures should be of the order of 80 per cent of the published migration figures; the latter being predominantly based on inflow and outflow data from the annual LFS calibrated by the results of the five yearly censuses of population. From tables 1.1 and 2.1, which cover the period 1990 to 1997, the CRS figures represent 20 per cent and 50 per cent of the published immigration and emigration figures respectively. The shortfall (particularly in the immigration series) calls into serious question the value of the CRS as a source for migration estimates.

A further shortcoming of the CRS for measuring migration is the limited nature of the possible breakdowns available. In contrast, the inflow data from the LFS allows a full

[13] Strictly speaking those who spent at least one year outside the country are either persons who were born abroad or returned long-term emigrants. It is likely that the majority of these persons would intend to stay in Ireland for at least 12 months.

analysis across a broad range of demographic and labour market characteristics. With the advent of the continuous national household survey incorporating the LFS it will be possible in the future to build up a fuller picture of the emigrants beyond the sex, age group and destination characteristics which are available at present.

8.4 Recommendations

1. The Central Statistics Office should continue to use the present methodology (based on LFS) for estimating annual gross migration flows. It should exploit the potential of the new continuous household survey to obtain further details on the characteristics of emigrants.

2. The Irish LFS should be used by the CSO and UK Office for National Statistics as the estimate of inflows from Great Britain to Ireland.

3. Close liaison should be maintained between CSO and ONS in exploring available sources of data on outflows from Ireland to GB and agreeing the most appropriate estimate of the magnitude and composition of these flows.

4. The enhancement of CRS undertaken as part of the present project should be maintained for the future and assessed after the results of the 2001 census become available.

Appendix Tables

The following tables which are ancillary to the main report are provided in accordance with the terms of the contract covering the study. The table descriptions are as follows:

Source NHSCR

A1 One year inflows from Ireland to Great Britain, 1980-1991

Source Census of Population 1981

A2 One year inflows from GB by five year age group and sex of persons born in Ireland
A3 One year inflows from GB by five year age group and sex of persons born elsewhere
A4 One year inflows by country of birth and sex
A5 One year inflows by country of origin and sex
A6 One year inflows from GB by principal economic status and sex
A7 Stock of GB born persons by five year age group and sex

Source Census of Population 1986

A8 One year inflows from GB by five year age group and sex of persons born in Ireland
A9 One year inflows from GB by five year age group and sex of persons born elsewhere
A10 One year inflows by country of birth and sex
A11 One year inflows by country of origin and sex
A12 One year inflows from GB by principal economic status and sex
A13 Stock of GB born persons by five year age group and sex

Source Census of Population 1991

A14 One year inflows from GB by five year age group and sex of persons born in Ireland
A15 One year inflows from GB by five year age group and sex of persons born elsewhere
A16 One year inflows by country of birth and sex
A17 One year inflows by country of origin and sex
A18 One year inflows from GB by principal economic status and sex
A19 Stock of GB born persons by five year age group and sex

Table A1 One year inflows from Ireland to Great Britain, 1980-1991 (Source NHSCR)

Age group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Males												
0-4	200	230	290	380	601	465	686	792	1285	865	571	417
5-9	130	160	90	170	330	285	491	575	948	604	344	221
10-14	110	110	50	140	179	168	280	311	552	384	244	193
15-19	110	160	150	130	339	275	502	677	1400	1215	738	505
20-24	610	520	440	760	1317	1362	2517	2973	5708	4689	3136	2037
25-29	520	410	340	480	903	957	1638	1973	3795	3265	2298	1755
30-34	280	290	360	390	551	522	831	915	1703	1424	1094	799
35-39	240	410	200	310	402	304	510	490	981	814	561	450
40-44	140	220	160	310	307	199	416	395	648	567	421	315
45-49	180	110	150	100	153	182	210	234	433	396	255	270
50-54	120	90	40	100	95	93	148	172	235	223	198	198
55-59	60	60	40	60	64	69	95	77	133	117	133	130
60-64	70	90	50	80	42	43	51	61	105	62	55	75
65-69	30	30	20	60	30	32	48	43	67	51	44	50
70-74	20	30	20	30	27	40	26	29	10	31	37	32
75-79	50	40	0	40	16	7	21	18	27	30	20	23
80-84	0	10	0	30	10	11	17	11	10	13	7	15
85+	0	0	10	0	6	7	10	13	16	10	14	14
Total	**2870**	**2970**	**2410**	**3570**	**5372**	**5021**	**8497**	**9759**	**18086**	**14760**	**10170**	**7499**

Age group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Females												
0-4	220	210	290	470	576	422	648	762	1221	830	575	434
5-9	110	90	140	270	316	286	485	572	910	621	380	255
10-14	80	160	80	160	188	152	266	304	565	385	264	187
15-19	430	360	290	330	606	524	920	1237	2523	2115	1547	855
20-24	920	880	700	980	1633	1801	3369	4047	7656	6227	4306	2564
25-29	370	330	310	470	734	787	1374	1679	3037	2646	1809	1247
30-34	240	190	180	230	337	320	587	660	1187	902	684	466
35-39	70	150	130	120	217	178	286	324	542	423	308	234
40-44	80	110	100	70	122	118	196	209	363	258	216	148
45-49	80	70	40	60	70	70	133	117	262	208	159	124
50-54	50	30	50	50	52	49	83	82	126	116	122	106
55-59	50	30	30	60	43	48	71	58	100	81	77	71
60-64	60	50	10	90	46	45	53	52	63	55	72	59
65-69	100	60	40	10	37	39	63	50	74	49	43	51
70-74	100	60	50	20	34	53	59	56	43	38	48	48
75-79	50	20	20	30	34	34	39	33	44	32	37	44
80-84	10	30	30	110	30	23	32	35	39	30	39	35
85+	10	20	20	10	23	19	25	35	28	38	31	28
Total	**3030**	**2850**	**2510**	**3540**	**5098**	**4968**	**5689**	**10312**	**18783**	**15054**	**10717**	**6956**

Table A2 One year inflows from GB by five year age group and sex of persons born in Ireland, Census of Population 1981

Age group	Males	Females	Total
1-4.....	62	41	103
5-9.....	71	71	142
10-14.....	45	49	94
15-19.....	82	83	165
20-24.....	428	667	1095
25-29.....	565	639	1204
30-34.....	551	478	1029
35-39.....	476	355	831
40-44.....	324	226	550
45-49.....	214	153	367
50-54.....	149	130	279
55-59.....	118	138	256
60-64.....	107	192	299
65-69.....	211	141	352
70+.....	82	124	206
Total.....	**3485**	**3487**	**6972**

Table A3 One year inflows from GB by five year age group and sex of persons born elsewhere, Census of Population 1981

Age group	Males	Females	Total
1-4.....	569	561	1130
5-9.....	594	543	1137
10-14.....	549	522	1071
15-19.....	360	384	744
20-24.....	413	473	886
25-29.....	395	354	749
30-34.....	366	311	677
35-39.....	217	161	378
40-44.....	151	106	257
45-49.....	88	74	162
50-54.....	66	38	104
55-59.....	53	41	94
60-64.....	36	44	80
65-69.....	32	21	53
70+.....	27	55	82
Total.....	**3916**	**3688**	**7604**

Table A4 One year inflows by country of birth and sex, Census of Population 1981

Country	Males	Females	Total
Ireland.....	5303	5470	10773
GB.....	3811	3653	7464
NI.....	1294	1079	2373
Rest of EU.....	532	596	1128
USA.....	636	628	1264
ROW.....	1386	1035	2421
Total.....	**12962**	**12461**	**25423**

Table A5 One year inflows by country of origin and sex, Census of Population 1981

Country	Males	Females	Total
GB.....	7401	7175	14576
Rest of EU.....	2276	2228	4504
USA.....	1039	1136	2175
Rest of world.....	2091	1866	3957
Outside Ireland - country not stated.....	155	56	211
Total.....	**12962**	**12461**	**25423**

Table A6 One year inflows from GB by principal economic status and sex, Census of Population 1981

Category	Males	Females	Total
15 and over			
At work.....	3261	1727	4988
Unemployed.....	1395	546	1941
Inactive.....	855	3115	3970
Total.....	**5511**	**5388**	**10899**

Table A7 Stock of GB born persons by five year age group and sex, Census of Population 1981

Age group	Males	Females	Total
0-4.....	2919	2817	5736
5-9.....	8778	8435	17213
10-14.....	15362	14452	29814
15-19.....	13326	12851	26177
20-24.....	7403	7791	15194
25-29.....	3881	4211	8092
30-34.....	3740	4049	7789
35-39.....	2752	3106	5858
40-44.....	2715	2764	5479
45-49.....	1636	1789	3425
50-54.....	1425	1589	3014
55-59.....	1348	1607	2955
60-64.....	1254	1535	2789
65-69.....	1208	1613	2821
70+.....	2087	3345	5432
Total.....	**69834**	**71954**	**141788**

Table A8 One year inflows from GB by five year age group and sex of persons born in Ireland, Census of Population 1986

Age group	Males	Females	Total
1-4.....	75	55	130
5-9.....	60	44	104
10-14.....	36	33	69
15-19.....	41	65	106
20-24.....	313	433	746
25-29.....	300	347	647
30-34.....	219	214	433
35-39.....	199	152	351
40-44.....	144	130	274
45-49.....	98	87	185
50-54.....	102	93	195
55-59.....	86	133	219
60-64.....	100	184	284
65-69.....	182	147	329
70+.....	116	148	264
Total.....	**2071**	**2265**	**4336**

Table A9 One year inflows from GB by five year age group and sex of persons born elsewhere, Census of Population 1986

Age group	Males	Females	Total
1-4.....	243	239	482
5-9.....	197	188	385
10-14.....	197	150	347
15-19.....	150	177	327
20-24.....	232	300	532
25-29.....	220	211	431
30-34.....	149	128	277
35-39.....	125	107	232
40-44.....	78	51	129
45-49.....	50	51	101
50-54.....	41	30	71
55-59.....	32	33	65
60-64.....	48	34	82
65-69.....	41	22	63
70+.....	24	41	65
Total.....	**1827**	**1762**	**3589**

Table A10 One year inflows by country of birth and sex, Census of Population 1986

Country	Males	Females	Total
Ireland.....	3795	4420	8215
GB.....	1853	1852	3705
NI.....	504	481	985
Rest of EU.....	516	701	1217
USA.....	472	531	1003
ROW.....	1133	912	2045
Total.....	8273	8897	17170

Table A11 One year inflows by country of origin and sex, Census of Population 1986

Country	Males	Females	Total
GB.....	3898	4027	7925
Rest of EU.....	1438	1778	3216
USA.....	983	1219	2202
Rest of world.....	1929	1857	3786
Outside Ireland - country not stated.....	25	16	41
Total.....	**8273**	**8897**	**17170**

Table A12 One year inflows from GB by principal economic status and sex, Census of Population 1986

Category	Males	Females	Total
15 and over			
At work.....	1118	943	2061
Unemployed.....	1232	616	1848
Inactive.....	740	1759	2499
Not stated.....	-	-	-
Total.....	**3090**	**3318**	**6408**

Table A13 Stock of GB born persons by five year age group and sex, Census of Population 1986

Age group	Males	Females	Total
0-4.....	1171	1106	2277
5-9.....	4211	3966	8177
10-14.....	9409	9099	18508
15-19.....	14729	14131	28860
20-24.....	10715	11096	21811
25-29.....	6774	7586	14360
30-34.....	3848	4301	8149
35-39.....	3550	3967	7517
40-44.....	2596	3010	5606
45-49.....	2535	2637	5172
50-54.....	1525	1684	3209
55-59.....	1291	1532	2823
60-64.....	1228	1523	2751
65-69.....	1156	1418	2574
70+.....	2244	3630	5874
Total.....	**66982**	**70686**	**137668**

Table A14 One year inflows from GB by five year age group and sex of persons born in Ireland, Census of Population 1991

Age group	Males	Females	Total
1-4.....	138	132	270
5-9.....	254	239	493
10-14.....	141	141	282
15-19.....	247	213	460
20-24.....	1783	1852	3635
25-29.....	1853	1604	3457
30-34.....	876	574	1450
35-39.....	397	287	684
40-44.....	299	193	492
45-49.....	235	157	392
50-54.....	179	135	314
55-59.....	166	124	290
60-64.....	153	179	332
65-69.....	168	122	290
70+.....	116	174	290
Total.....	**7005**	**6126**	**13131**

Table A15 One year inflows from GB by five year age group and sex of persons born elsewhere, Census of Population 1991

Age group	Males	Females	Total
1-4.....	627	615	1242
5-9.....	324	293	617
10-14.....	204	206	410
15-19.....	180	185	365
20-24.....	689	678	1367
25-29.....	593	536	1129
30-34.....	386	304	690
35-39.....	217	170	387
40-44.....	189	144	333
45-49.....	105	97	202
50-54.....	102	82	184
55-59.....	54	59	113
60-64.....	81	58	139
65-69.....	86	48	134
70+.....	56	49	105
Total.....	**3893**	**3524**	**7417**

Table A16 One year inflows by country of birth and sex, Census of Population 1991

Country	Males	Females	Total
Ireland.....	11010	10786	21796
GB.....	3828	3593	7421
NI.....	692	687	1379
Rest of EU.....	854	1213	2067
USA.....	673	885	1558
ROW.....	1709	1356	3065
Total.....	**18798**	**18548**	**37346**

Table A17 One year inflows by country of origin and sex, Census of Population 1991

Country	Males	Females	Total
GB.....	10898	9650	20548
Rest of EU.....	2285	2963	5248
USA.....	2148	2348	4496
Rest of world.....	3427	3546	6973
Outside Ireland - country not stated.....	40	41	81
Total.....	**18798**	**18548**	**37346**

Table A18 One year inflows from GB by principal economic status and sex, Census of Population 1991

Category	Males	Females	Total
Total aged 15 and over			
At work.....	8121	6419	14540
Unemployed.....	4864	2918	7782
Inactive.....	2687	6253	8940
Not stated.....	-	-	-
Total.....	**15672**	**15590**	**31262**

Table A19 Stock of GB born persons by five year age group and sex, Census of Population 1991

Age group	Males	Females	Total
0-4.....	2363	2347	4710
5-9.....	2491	2415	4906
10-14.....	4733	4460	9193
15-19.....	8595	8430	17025
20-24.....	10362	10431	20793
25-29.....	8793	10091	18884
30-34.....	6681	7778	14459
35-39.....	4006	4456	8462
40-44.....	3715	4036	7751
45-49.....	2627	3043	5670
50-54.....	2591	2700	5291
55-59.....	1586	1748	3334
60-64.....	1379	1566	2945
65-69.....	1346	1545	2891
70+.....	2411	3853	6264
Total.....	**63679**	**68899**	**132578**

Appendices

Appendix 1 Old CRS Form for Arrivals

CENTRAL STATISTICS OFFICE — COUNTRY OF RESIDENCE SURVEY — **ARRIVALS**

What is your Country of Residence?
If Non–Irish Resident ASK: Do you intend living in Ireland for more than one year?

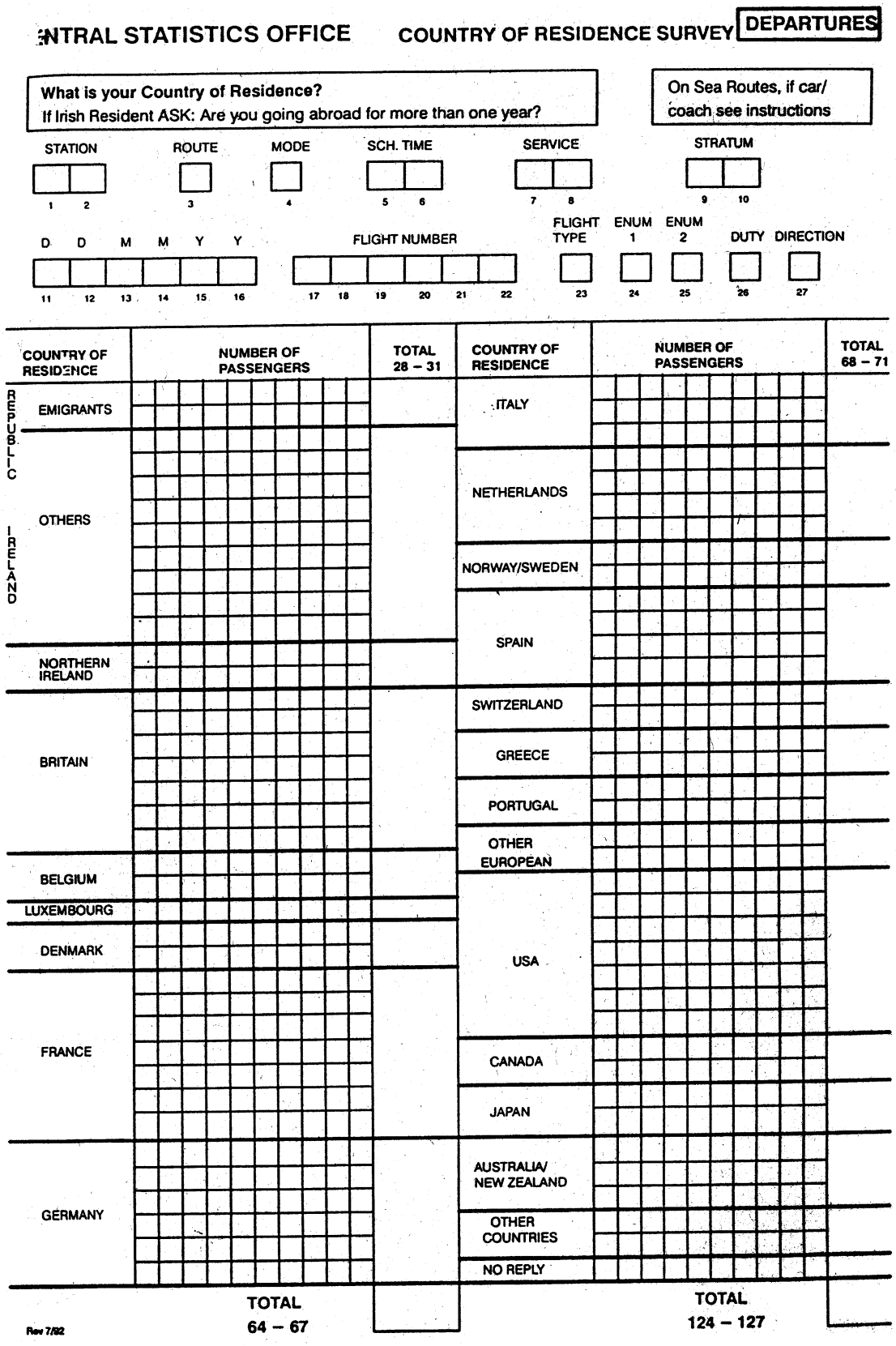
On Sea Routes, if car/coach see instructions

STATION (1 2) | ROUTE (3) | MODE (4) | SCH. TIME (5 6) | SERVICE (7 8) | STRATUM (9 10)

D D M M Y Y (11 12 13 14 15 16) | FLIGHT NUMBER (17 18 19 20 21 22) | FLIGHT TYPE (23) | ENUM 1 (24) | ENUM 2 (25) | DUTY (26) | DIRECTION (27)

CATEGORY	NUMBER OF PASSENGERS	TOTAL 28 – 31	COUNTRY OF RESIDENCE	NUMBER OF PASSENGERS	TOTAL 68 – 71
IMMIGRANTS			ITALY		
COUNTRY OF RESIDENCE					
IRELAND (REP.)			NETHERLANDS		
			NORWAY/SWEDEN		
			SPAIN		
NORTHERN IRELAND					
BRITAIN			SWITZERLAND		
			GREECE		
			PORTUGAL		
			OTHER EUROPEAN		
BELGIUM					
LUXEMBOURG					
DENMARK			USA		
FRANCE			CANADA		
			JAPAN		
GERMANY			AUSTRALIA/ NEW ZEALAND		
			OTHER COUNTRIES		
			NO REPLY		
TOTAL 64 – 67			TOTAL 124 – 127		

Appendix 2 Old CRS Form for Departures



NTRAL STATISTICS OFFICE — COUNTRY OF RESIDENCE SURVEY — DEPARTURES

What is your Country of Residence?
If Irish Resident ASK: Are you going abroad for more than one year?

On Sea Routes, if car/ coach see instructions

STATION (1 2) ROUTE (3) MODE (4) SCH. TIME (5 6) SERVICE (7 8) STRATUM (9 10)

D D M M Y Y (11 12 13 14 15 16) FLIGHT NUMBER (17 18 19 20 21 22) FLIGHT TYPE (23) ENUM 1 (24) ENUM 2 (25) DUTY (26) DIRECTION (27)

COUNTRY OF RESIDENCE	NUMBER OF PASSENGERS	TOTAL 28 – 31	COUNTRY OF RESIDENCE	NUMBER OF PASSENGERS	TOTAL 68 – 71
REPUBLIC OF IRELAND: EMIGRANTS			ITALY		
REPUBLIC OF IRELAND: OTHERS			NETHERLANDS		
			NORWAY/SWEDEN		
			SPAIN		
NORTHERN IRELAND			SWITZERLAND		
BRITAIN			GREECE		
			PORTUGAL		
			OTHER EUROPEAN		
BELGIUM			USA		
LUXEMBOURG					
DENMARK					
FRANCE			CANADA		
			JAPAN		
GERMANY			AUSTRALIA/ NEW ZEALAND		
			OTHER COUNTRIES		
			NO REPLY		
	TOTAL 64 – 67			TOTAL 124 – 127	

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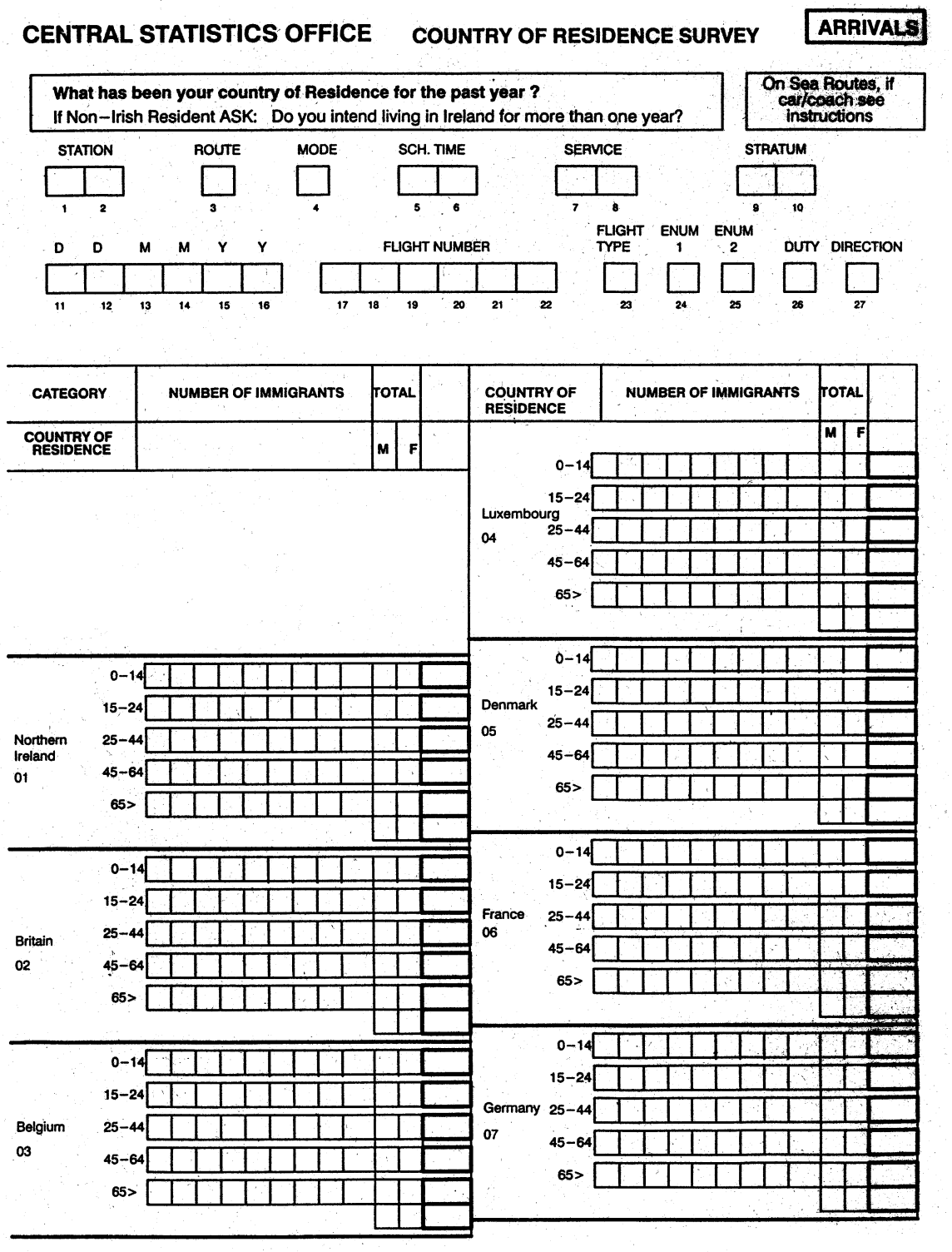
Appendix 3 New CRS Migration Form for Arrivals



CENTRAL STATISTICS OFFICE **COUNTRY OF RESIDENCE SURVEY** **ARRIVALS**

What has been your country of Residence for the past year ?
If Non–Irish Resident ASK: Do you intend living in Ireland for more than one year?

On Sea Routes, if car/coach see instructions

STATION (1 2) ROUTE (3) MODE (4) SCH. TIME (5 6) SERVICE (7 8) STRATUM (9 10)

D D M M Y Y (11 12 13 14 15 16) FLIGHT NUMBER (17 18 19 20 21 22) FLIGHT TYPE (23) ENUM 1 (24) ENUM 2 (25) DUTY (26) DIRECTION (27)

CATEGORY	NUMBER OF IMMIGRANTS	TOTAL	
COUNTRY OF RESIDENCE		M	F
Northern Ireland 01	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Britain 02	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Belgium 03	0–14		
	15–24		
	25–44		
	45–64		
	65>		

COUNTRY OF RESIDENCE	NUMBER OF IMMIGRANTS	TOTAL	
		M	F
Luxembourg 04	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Denmark 05	0–14		
	15–24		
	25–44		
	45–64		
	65>		
France 06	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Germany 07	0–14		
	15–24		
	25–44		
	45–64		
	65>		

INTERVIEWER INSTRUCTIONS

The objective of this survey is to measure and analyse the number of immigrants entering Ireland. In order to ensure that these numbers can be accurately calculated it is most important that the following instructions are followed carefully.

Questions to be asked

1. **HAVE YOU BEEN LIVING IN ANOTHER COUNTRY FOR THE PAST YEAR?**

2. **DO YOU INTEND LIVING IN IRELAND FOR MORE THAN ONE YEAR?**

3. **WHAT HAS BEEN YOUR COUNTRY OF RESIDENCE FOR THE PAST YEAR?**

IF THE RESPONDENT HAS BEEN A GERMAN RESIDENT FOR THE PAST YEAR ENTER THE APPROPRIATE TICK (**F = FEMALE M = MALE**) IN THE COLUMN MARKED **GERMANY.**

If the respondent answers **YES** to the **FIRST & SECOND** question he or she is an immigrant and should be recorded on this form.

NOTE: It is important to emphasise that it is the Country of Residence that is in question and not the nationality of the traveller (e.g. an Irish National living in England for more than one year is a resident of England).

Should you have any queries or require further clarification please contact:

TOURISM SECTION (021) 359000 EXT. 5270 OR 5271

CATEGORY	NUMBER OF MIGRANTS	TOTAL	
COUNTRY OF RESIDENCE		M	F
Italy 08	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Netherlands 09	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Norway/ Sweden 10	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Spain 11	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Switzerland 12	0–14		
	15–24		
	25–44		
	45–64		
	65>		

COUNTRY OF RESIDENCE	NUMBER OF MIGRANTS	TOTAL	
		M	F
Greece 13	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Portugal 14	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Other European 15	0–14		
	15–24		
	25–44		
	45–64		
	65>		
USA 16	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Canada 17	0–14		
	15–24		
	25–44		
	45–64		
	65>		

CATEGORY	NUMBER OF MIGRANTS	TOTAL			COUNTRY OF RESIDENCE	NUMBER OF MIGRANTS	TOTAL	
COUNTRY OF RESIDENCE		M	F					
Japan 18	0–14							
	15–24							
	25–44							
	45–64							
	65>							
Australia/ New Zealand 19	0–14							
	15–24							
	25–44							
	45–64							
	65>							
Other Countries 20	0–14							
	15–24							
	25–44							
	45–64							
	65>							

Overall Total

99	0–14							
	15–24							
	25–44							
	45–64							
	65>							

Appendix 4 New CRS Migration Form for Departures

CENTRAL STATISTICS OFFICE **COUNTRY OF RESIDENCE SURVEY** **DEPARTURES**

What has been your country of Residence for the past year ?
If Irish Resident ASK: Do you intend living abroad for more than one year?

On Sea Routes, if car/coach see instructions

STATION (1 2) ROUTE (3) MODE (4) SCH. TIME (5 6) SERVICE (7 8) STRATUM (9 10)

D D M M Y Y (11 12 13 14 15 16) FLIGHT NUMBER (17 18 19 20 21 22) FLIGHT TYPE (23) ENUM 1 (24) ENUM 2 (25) DUTY (26) DIRECTION (27)

This form is to be completed in respect of Irish Residents irrespective of Nationality who have been living in Ireland for more than one year and intend travelling abroad for more than one year

CATEGORY	NUMBER OF EMIGRANTS	TOTAL	
COUNTRY OF RESIDENCE		M	F
Northern Ireland 01	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Britain 02	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Belgium 03	0–14		
	15–24		
	25–44		
	45–64		
	65>		

COUNTRY OF RESIDENCE	NUMBER OF EMIGRANTS	TOTAL	
		M	F
Luxembourg 04	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Denmark 05	0–14		
	15–24		
	25–44		
	45–64		
	65>		
France 06	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Germany 07	0–14		
	15–24		
	25–44		
	45–64		
	65>		

INTERVIEWER INSTRUCTIONS

The objective of this survey is to measure and analyse the number of emigrants leaving Ireland. In order to ensure that these numbers can be accurately calculated it is most important that the following instructions are followed carefully.

Questions to be asked

1. **HAVE YOU BEEN LIVING IN IRELAND (REPUBLIC ONLY) FOR THE PAST YEAR?**

2. **DO YOU INTEND LIVING ABROAD FOR MORE THAN ONE YEAR?**

3. **IN WHAT COUNTRY DO YOU INTEND LIVING ABROAD FOR MORE THAN ONE YEAR?**

IF THE RESPONDENT HAS BEEN AN IRISH RESIDENT (REPUBLIC ONLY) FOR THE PAST YEAR AND INTENDS RESIDING IN GERMANY FOR MORE THAN ONE YEAR ENTER THE APPROPRIATE TICK (**F = FEMALE M = MALE**) IN THE COLUMN MARKED **GERMANY.**

If the respondent answers **YES** to the **FIRST & SECOND** question he or she is an Emigrant and should be recorded on this form.

NOTE: It is important to emphasise that it is the Country of Residence that is in question and not the nationality of the traveller (e.g. an English National living in Ireland for more than one year is a resident of Ireland).

Should you have any queries or require further clarification please contact:

TOURISM SECTION (021) 359000 EXT. 5270 OR 5271

CATEGORY	NUMBER OF MIGRANTS	TOTAL	
COUNTRY OF RESIDENCE		M	F
Italy 08	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Netherlands 09	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Norway/ Sweden 10	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Spain 11	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Switzerland 12	0–14		
	15–24		
	25–44		
	45–64		
	65>		

COUNTRY OF RESIDENCE	NUMBER OF MIGRANTS	TOTAL	
		M	F
Greece 13	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Portugal 14	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Other European 15	0–14		
	15–24		
	25–44		
	45–64		
	65>		
USA 16	0–14		
	15–24		
	25–44		
	45–64		
	65>		
Canada 17	0–14		
	15–24		
	25–44		
	45–64		
	65>		

CATEGORY	NUMBER OF MIGRANTS	TOTAL			COUNTRY OF RESIDENCE	NUMBER OF MIGRANTS	TOTAL	
COUNTRY OF RESIDENCE		M	F					
Japan 18	0–14							
	15–24							
	25–44							
	45–64							
	65>							
Australia/ New Zealand 9	0–14							
	15–24							
	25–44							
	45–64							
	65>							
Other Countries 20	0–14							
	15–24							
	25–44							
	45–64							
	65>							

Overall Total

99	0–14			
	15–24			
	25–44			
	45–64			
	65>			

Appendix 5 Country of Residence Survey Grossing Strata

Stratum No.	*Stratum Definition*
01	Dublin Air Cross Channel Irish Scheduled
02	Dublin Air Cross Channel Irish Unscheduled
03	Dublin Air Cross Channel Foreign Scheduled
04	Dublin Air Cross Channel Foreign Unscheduled
05	Dublin Air Continental Irish Scheduled
06	Dublin Air Continental Irish Unscheduled
07	Dublin Air Continental Foreign Scheduled
08	Dublin Air Continental Foreign Unscheduled
09	Dublin Air Transatlantic Irish Scheduled
10	Dublin Air Transatlantic Irish Unscheduled
11	Dublin Air Transatlantic Foreign Scheduled
12	Dublin Air Transatlantic Foreign Unscheduled
13	Shannon Air Cross Channel Irish Scheduled
14	Shannon Air Cross Channel Irish Unscheduled
15	Shannon Air Cross Channel Foreign All
16	Shannon Air Continental Irish Scheduled
17	Shannon Air Continental Irish Unscheduled
18	Shannon Air Continental Foreign All
19	Shannon Air Transatlantic Irish Scheduled
20	Shannon Air Transatlantic Irish Unscheduled
21	Shannon Air Transatlantic Foreign All
22	Cork Air Cross Channel Irish Scheduled
23	Cork Air Cross Channel Irish Unscheduled
24	Cork Air Cross Channel Foreign All
25	Cork Air Continental Irish Scheduled
26	Cork Air Continental Irish Unscheduled
27	Cork Air Continental Foreign All

Stratum No.	*Stratum Definition*
28	Dún Laoghaire Holyhead Car/Coach
29	Dún Laoghaire Holyhead Foot
30	Service discontinued
31	Service discontinued
32	Rosslare Stena Cross Channel Car/Coach
33	Rosslare Stena Cross Channel Foot
34	Rosslare Continental Car/Coach
35	Rosslare Continental Foot
36	Cork Sea Cross Channel Car/Coach
37	Cork Sea Cross Channel Foot
38	Cork Sea Continental Car/Coach
39	Cork Sea Continental Foot
40	Rosslare B&I Cross Channel Car/Coach
41	Rosslare B&I Cross Channel Foot
42	Service discontinued
43	Dublin Sea Holyhead Car/Coach
44	Dublin Sea Holyhead Foot
45	Dublin Sea Isle of Man