



2020 VISION

Ireland's Demographic Dividend

NCB

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March 2006

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Executive Summary

Key Points

- The population is forecast to reach 5 million in 2015 and to exceed 5.3 million in 2020. It will top 6 million in 2050.
- The labour force is projected to grow at an annual average 2.2% over the whole period 2005 to 2015 with growth faster in the first half of the decade than in the latter part.
- From 2015 on, the rate of increase in the labour force will slow quite sharply. We project growth of 0.9% per year on average between 2015 and 2020.
- Combined with sustained 3% annual growth in productivity, this suggests the underlying potential real rate of growth in Irish GDP in the five years to 2010 could be close to 5.75%.
- Between 2011 and 2015, the potential GDP growth rate could cool down to around 5%.
- For the subsequent five years to 2020, the slower increase in the labour force would lower the likely trend GDP growth rate to 4%.
- A growing population implies a growing domestic customer base.
- The pattern of demand in the economy will also be influenced by the age composition of growth in the population, and especially by the relatively fast growth expected in age groups with the greatest earning and spending potential, viz. those between 25 and 54 years.
- This influence will be at its strongest in the next ten years. Between 2005 and 2010, this on its own will contribute growth in household spending of almost 3% in real terms on an annual basis, while the contribution between 2010 and 2015 will be between 2% and 2.5%. After 2015, this structural impact will slow somewhat.

- Growth in incomes should also be sustained and this will add momentum to the rate of growth in domestic demand.
- The fastest rates of growth in demand are likely to be seen in the more discretionary categories of spending rather than in the staples.
- Growth in demand for financial products, particularly pension products, are especially starred, possibly growing at high double-digit annual rates in the years to 2020. Leisure spending, travel and entertainment should also grow very strongly.
- We expect that house prices will rise by more about 11% in 2006, driven by rising immigration, and then slow to perhaps 6% in 2007.
- We expect the underlying demand for housing to be about 65,000 per annum until 2015, subsiding thereafter to about 55,000 per annum until 2020.
- We estimate that the numbers of cars in the State could rise from 1.6 million in 2004 to reach 2 million by 2010, and 3 million by 2020.
- Car numbers in Dublin and surrounding counties could rise from 0.6 million in 2004 to 0.8 million in 2010 and 1 million by 2015.
- Annual car registrations would be about 170,000 to 200,000 per annum until 2015, on this basis and about 230,000 per annum until 2020.

Introduction

- Changes in the size and age composition of the population have a significant bearing on economic prospects. In Ireland such change has been the crucial factor explaining the elevated pace of economic growth since the mid-1990s and the resilience of the Irish economy in the period of international recession and protracted slow growth among Ireland's European trading partners after 2001.
- In 1998, NCB Stockbrokers published a report entitled "Population & Prosperity, Sustaining the Boom". That document outlined Ireland's demographic prospects and indicated the important ways in which population change might be expected to benefit the economy. The purpose of this report is to update our demographic projections in order to take account of developments since 1998 and to extend the horizon of the forecasts further into the future.

Chapter 1 - Forecasting the Population

- Population forecasts for periods far into the future become increasingly dependent on the assumptions made about key determinants. However, the margin of error for population forecasts over shorter time horizons, particularly ten or twenty years ahead, is inherently smaller than for the generality of economic predictions since most of the population that will exist at the forecast horizon is already in existence.
- The key building blocks of a population forecast are the population at the start of the forecast period, and assumptions about fertility, life expectancy and migration flows in the future.

Fertility

- Over the past forty years, the total fertility rate in Ireland has fallen sharply. In 1965, the fertility rate was a little over 4. It hit a low of just over 1.8 in 1994 and 1995 but has risen slightly since and appears broadly to have stabilised just below 2 in the four years to 2004.
- Because of this broad stability, it is assumed that the age specific fertility rates for each five-year cohort within the 15 to 49 age group hold constant at the levels recorded in 2004 (the latest year for which full data are available), implying a total fertility rate of just below 2.

- In the period ahead, on our central scenario, the current rising trend in total births will continue up to 2014 - at which point it will have increased to almost 71,500 - before subsiding in the period up to 2032. After that, there will be another period of rising numbers of births.
- Even on the basis of zero net migration, total births would increase for most of the remainder of this decade, peaking at just about 65,000 in 2008 and 2009 before gradually subsiding over the following twenty years.

Life Expectancy

- Since 1901, male life expectancy at birth has risen by nearly 26 years to just over 75 years. For females the improvement has been greater, at almost 31 years, raising life expectancy at birth to just over 80 years.
- As a result, the current annual number of deaths of around 30,000 is little more than half what it was at the start of the 20th century and the death rate has fallen from almost 17 per thousand of the population to 7 per thousand.
- Most of the gains in longevity were recorded in the period to 1961. Since then, progress has been slower but quite steady.
- The mortality rates used in the population forecast are based on the assumption that gains in life expectancy in the future will continue at about the pace recorded in the 1991 to 2002 period, i.e. at a rate of 2 to 3 months per year.
- On this basis, life expectancy at birth for males would increase from 75.1 years in 2002 to 79.5 years by 2020 and to 87 years by 2050. For females, current life expectancy at birth of 80.3 years would rise to 84.1 years by 2020 and to 89 years in 2050.
- On these assumptions, over the next ten years the absolute annual number of deaths should remain mostly below 30,000 and the death rate per thousand of the population will decline further to 6.1 per thousand by 2015 where it will stabilise until 2021.
- Thereafter, even though life expectancy will be rising, as the population grows and as the proportion of the population in the older age groups increases the annual number of deaths will rise. It should be over 52,000 by 2050 at which point the death rate will have risen close to 9 per thousand of the population.

Migration

- The outflow of migrants from Ireland has lessened steadily since it peaked at 70,500 in 1989. It came to an estimated 16,500 in the year to April 2005, the latest for which official estimates are available.

- In the late-1980s the annual number of immigrants had averaged around 21,000 but since then it has been gradually rising and hit 70,000 in the year to April 2005.
- Initially during the 1990s, people who had formerly emigrated from Ireland constituted more than half of the migrant inflow. Subsequently the flow primarily reflected a rising number of migrants from outside the EU. Most recently, there has been a surge in immigration from the new EU member states.
- We believe Ireland will continue to be the recipient of significant immigrant flows, especially from the new EU member states given the restrictions on access to their labour markets operated by most other EU-15 countries.
- More generally, the buoyancy of economic activity in Ireland and the associated employment opportunities relative to the position elsewhere in the European Union are well known. There is every reason to believe that this contrast will persist and, as a result, the relative attractiveness of Ireland as a migrant destination is likely to remain strong.
- Our central population forecast assumes that the inflow of new migrants will hold for the period to 2010 at the 70,000 level recorded in the year to April 2005. Thereafter, we assume it will gradually diminish to around 43,000 by 2015 and hold at that level up to 2020. For emigration, we have assumed that the rate of outflow in 2005, i.e. around 4 per 1000 of the population, broadly holds over the forecast period.
- The result of these assumptions is that there is a net inward migration flow of around 53,000 annually in the years to 2010. From then until 2015, an inflow remains but it gradually falls to 25,000 where it stabilises until 2020. After 2020, we assume zero net migration.

Chapter 2 - The Migrant Population in Ireland

Size of the Immigrant Population

- Immigrants will play an increasingly important role in the growth of the labour force and in the demand for housing in the years ahead. The rise in the immigrant population, accounted for 30% of the total increase in the population between 1996 and 2002. We estimate it may account for as much as 50% of the growth in the total population between now and 2020.
- Immigrants accounted for 7% of the population in 2002 and we estimate they could form 19% of the population, or about 1 million people, in 2020.

Representation in the Labour Force

- We estimate immigrants were 12% of the labour force in 2005.
- Their representation among the occupations was high in computer software (18%), other professional workers (16%), social workers (15%), health (13%) and scientific and technical occupations (13%).
- The overall participation rate in the labour force for immigrants was higher than in the domestic population but this reflects their concentration in the 20-49 age cohorts.
- In terms of skills, 65% of immigrants were in the upper end of the skill spectrum compared to 60% of the Irish-born population. Within skill groups, immigrants were most strongly represented in the professional groups aged 25-44.

Education

- The percentage of the immigrant population that had completed third level education was 38% in 2002, compared to 19% in the domestic population. This was not just because immigrants were concentrated in the younger age cohorts since the percentage with third level qualifications was higher among immigrants for all individual age cohorts.

Accommodation

- Average household size among the immigrant population was not significantly different from that in the domestic born population in 2002, at close to 2.9 persons per household.
- There was a slightly smaller proportion of immigrant households in the "married with children" group and slightly more in the "non-family" households but other household types were roughly the same percentages as in the domestic-born population.
- Over 40% of the 99,000 immigrant households in 2002 were in rented accommodation, compared to 18% of domestic households.
- Immigrant households accounted for 19% of households in flats, both rented and owned.
- The percentage of immigrant households with a mortgage in 2002 was 34% compared to 38% among households headed by an Irish born-person.

Chapter 3 - The Population Projections

- The population in 2005 is officially estimated at 4.13 million and it has been increasing at an average annual rate of 1.7% in the past five years.
- On our projections, the population will reach 5 million in 2015 and exceed 5.3 million in 2020. It will top 6 million in 2050.
- As the population grows, so will it gradually age. Currently, the median age of the population (i.e. the age which divides the population in two equal parts) is 33 years. By 2020, the median will have increased to 38 years. It will have risen to 46 years at the mid-point of this century. However, Ireland's population is, and will remain, younger than the population in the European Union as a whole.

Long-Term Increase in Older Age Groups

- Currently, over-65s account for slightly more than 11% of the total population. That percentage will rise consistently in the next forty-five years. In our central scenario, it will reach 14% of the population by 2020 and, by 2050, it will have increased to 29%.
- The absolute number of over-65s will rise from a current 460,000 to 1.7 million in 2050.

Near-term Strength in the Economically Active Population

- The outlook for the population in the active age groups - 15 to 64 years - is of central importance to the economic outlook.
- In the next fifteen years, that population will increase by almost 710,000. This represents growth at an annual average of 1.5%. The rate of increase will, however, be at its most rapid - just over 2% - in the next five years. Between 2010 and 2015, the annual pace will moderate to 1.5% and it will slow to 1% per year between 2015 and 2020.
- Growth prospects for these age groups will have direct implications for the rate at which the labour force will grow and, therefore, the potential growth rate of the economy.

Chapter 4 - The Baby Boom Generation

- The generation born during the baby boom of the 1970s and early-1980s is a uniquely important one because of its size. Between 1971 and 1983, over 900,000 people were born. This was the period with the highest, sustained annual numbers of births recorded since the foundation of the state.
- The population in the baby boom generation age group (22 to 34 years) totalled over 895,000 in 2005. This generation constitutes a bulge in the population that will move through the age groups, as it gradually grows older. Because this generation outweighs any other individual segment of the population, it will have a significant influence on developments in the future as its needs, preferences and priorities change with the life cycle.
- No provider of goods and services for the domestic market can afford to ignore so large a customer base. Thus, as the baby boom generation ages, retail and other service industries will need to adapt their products to the needs of the baby boomers.

Chapter 5 - Irish Demographics in the EU Context

- The current and prospective growth rates in the Irish population substantially outstrip those elsewhere in the European Union.
- In recent years, the EU population has been growing at around 0.25% per year. According to UN population forecasts, that growth rate will slow to zero within the next ten years and the EU population could begin to decline after 2015.
- From an economic point of view, prospects for growth in the population of working age (15 to 64 years) are key. In recent years this part of the EU population has been growing at a little less than 0.5% annually and this growth rate is set to diminish between now and 2010 to an average of less than 0.2% per year, according to the UN forecasts. After that, the active population in the EU will begin to fall.
- The population of working age in the EU that currently totals around 307 million may have fallen by a projected 9 million by 2020. By 2050, it could be over 60 million, or 17%, lower than it currently is.
- In contrast, on our central scenario the active age groups in Ireland will rise throughout the period to 2030. By 2020, the population between 15 and 64 will total 3.5 million. This represents an increase of 710,000 or 25% on the 2005 total. In 2030, it will exceed 3.6 million but it will fall thereafter, to total around 3.3 million by 2050.

A Diminishing Labour Supply May Undermine EU Growth Potential

- The potential implications of the EU demographic outlook for the economy of the area are serious. If the rate of participation in the labour force among the active age groups does not increase, the pattern of very slow growth in the active population in the next five years and decline after 2010 will be mirrored directly in the EU labour supply. All other things being equal, this will also mean that the potential rate of growth in real GDP in the EU will decelerate.
- The potential growth rate of the EU economy is probably below 2% at present with productivity growing at about 0.8% annually and the labour supply rising by around 1% per year.
- Without a rise in labour productivity, the slow pace of growth in the active population - and, thus, the labour supply - in the period to 2010 will mean that the rate of sustainable growth in the EU could fall to less than 1.5%.
- Between 2010 and 2020, with the labour force in decline, the prospects for sustainable growth in activity will diminish still further to less than 1%.
- In these circumstances, the more vibrant Irish economy will stand in stark contrast to developments elsewhere in the EU for a prolonged period.

Chapter 6 - Economic Implications - the Supply Side

- Viewed from a supply-side perspective, the capacity of the economy to grow depends on the pace of growth in the supply of labour, on the one hand, and on the rate of growth in the productivity of the workforce, on the other.
- In the five years to 2010 annual growth in the active population, from which the labour supply is drawn, will run at a little over 2%. Thereafter, it will tend to gradually slow - to 1.5% per year between 2010 and 2015 and to 1% for the following ten years.
- The outlook for the growth in the labour force also depends on the extent to which that population participates in the labour market.
- For males, participation rates tend to be relatively high - varying between 75% and 93% - in the age cohorts from 20 to 59 years. Overall male participation has been largely stable since 1990 and is assumed to remain so.

Female Labour Force Participation Rising

- Traditionally, female participation in the labour force has been low. Up until the late-1980s, it barely exceeded 30% of the female population over 15 years.
- Since the end of the 1980s, female participation has been rising steadily and quite rapidly. By 2005, the overall participation rate came to 52% of the over-15 female population - a rise of nearly 20 percentage points in the fifteen years from 1990.
- Currently, the overall rate of female labour force participation in Ireland exceeds the EU-15 average but it ranks about mid-way in the spectrum of rates among individual EU-15 member states mainly because participation among Irish women between 35 and 59 years is noticeably lower than elsewhere.
- These are the age cohorts, however, where labour force participation has been growing most sharply in recent years and it seems likely that this trend has some way to go before an equilibrium is established.
- Therefore, in forecasting the female labour force we have assumed that participation rates for women between 35 and 59 years will continue to rise gradually to 2015, until they reach the average participation rates currently experienced elsewhere in the EU. Thereafter, those rates are assumed to remain stable.

Strong growth in the Labour Force to Continue

- In the past five years, annual labour force growth has averaged 2.7%. On our central scenario, it will grow at an annual average 2.2% over the whole period 2005 to 2015 but growth should be faster in the first half of the decade than in the latter part.
- From 2015 on, the rate of increase in the labour force will slow quite sharply. We project growth of 0.9% per year on average between 2015 and 2020.

High Productivity Growth should be Maintained

- Ireland's productivity growth averaged almost 4% per annum in the 1960s and 1970s and remained high at 3% to 3.5% during the 1980s and 1990s.
- Productivity growth in the period 2000 to 2004 (the latest for which both full-year official GDP and employment data are available) has averaged 3% per year, though there are some grounds for suspecting that this may be an underestimate.

- The strength of Ireland's productivity performance likely owes something to the fact that the economy has been in substantial transition over the last forty-five years. It is also likely to be a reflection of the radical transformation in the educational attainments of the workforce.
- The 2002 census shows that among people in the 60 to 64 year age group over 42% had only a primary education. Nearly 38% had a secondary education while less than 14% had third level qualifications.
- By contrast, 46% of the generation of 25 to 29 year olds in 2002 had completed education at third level. Nearly 47% of that age group ceased education at secondary level while only 4% had finished their education at primary level.
- Higher levels of educational attainment imply that the inherent productivity of the generation now joining the labour force is much higher than that of the generation whose working life is coming to a close.
- This process is set to continue as the more highly educated younger generations in the workforce advance in age and the less highly educated older generations gradually drop out of the labour supply on retirement.
- Thus, it seems reasonable to assume that relatively high rates of productivity growth can continue for some time into the future and a 3% annual productivity growth rate is assumed to 2020.

Ireland's Growth Potential Will Remain High

- Combined with the projected growth in the labour force this suggests the underlying potential rate of growth in Irish real GDP in the five years to 2010 could be close to 5.75%.
- Between 2011 and 2015, the potential GDP growth rate could cool down to around 5%.
- For the subsequent five years to 2020, a projected slower annual increase of about 1% in the labour force would lower the likely trend growth rate in activity to 4%.

Chapter 7 - Impact of Demographic Change on Growth in Demand

- At its simplest, a growing population implies a growing domestic customer base.
- The pattern of demand in the economy will also be influenced by the age composition of growth in the population, and especially

by the development of numbers in those age groups with the greatest earning and spending potential, viz. age groups between 25 and 54 years.

- The Household Budget Survey shows that those prime working age groups typically account for around 85% of spending and for just under 70% of all disposable income. More specifically, households whose heads are between 35 and 54 years typically account for around 50% of income and spending.
- The key importance of the population between 35 and 54 over the next fifteen years is that it is set to grow appreciably faster than the pace of growth in the population as a whole, 3% per year versus 2% up to 2015 and 1.8% annually versus 1.3% in the five years to 2020.

Positive Demographics will Underpin Household Spending

- As a result, growth in consumer spending should be solidly underpinned. Rapid growth in households with the highest earning and spending power will mean that the domestic market for goods and services will be expanding in a structural way.
- This growth will be at its strongest in the next ten years. Between 2005 and 2010, structural demographic developments are set to support growth in household spending of almost 3% in real terms on an annual basis while the contribution between 2010 and 2015 will be between 2% and 2.5%. After 2015, the structural impact will slow somewhat.

Spending and Income

- Generally, spending on all categories of goods and services rises as income grows.
- However, spending on essentials, such as food and fuel & light, grow more slowly than income while spending on more discretionary items such as dining out, entertainment and financial products tends to rise more rapidly.
- The income elasticity of demand measures the responsiveness of demand for individual kinds of goods and services to growth in incomes and is defined as the percentage change in spending per one percent change in income.
- Categories of goods and services with low elasticities - where spending tends to increase by less than 1% for every 1% rise in income - are those that generally regarded as staples or necessities. As well as obvious essentials such as food, fuel & light and rent costs, this classification also includes household appliances, personal services (e.g. hairdressing), house repair & decoration as well as tobacco and alcohol.

- An intermediate band of categories with elasticities either a little below or a little above 1 includes spending on medical services, clothing & footwear, mortgage payments and life insurance. Health insurance is also broadly in this group.
- Categories of spending most responsive to income growth include discretionary categories such as domestic services, travel, entertainment and eating out. They also include spending on pension funds, which has the highest income elasticity of any expenditure category.
- Using the central population forecast, an assumed annual growth rate of 6% in household disposable income and estimated income elasticities of demand, potential growth in household spending and its components was simulated for the period to 2020
- Spending categories with high income elasticities of demand yielded dramatic potential rates of growth in this exercise - typically showing double-digit nominal growth rates in the years out to 2020.
- Most dramatically, spending on pension fund provision seems set for very rapid rates of increase over the next fifteen years - of around 20% per annum on this exercise.
- Apart from pension funds, double-digit annual growth rates in a variety of other areas of demand are also indicated, particularly leisure activities, travel and entertainment.

Chapter 8 - Alternative Scenarios

- This chapter provides some broad indications of the sensitivity of the projections in the report to alternative assumptions about migration flows.

Chapter 9 - The Irish Housing Market

Demand and Immigration

- New house completions in 2005 were almost 81,000, up from around 50,000 per annum four years earlier. The average rate of new house completions in the past three years was 75,500.
- While demand is still supported by the growth in the over-25 population, in coming years the growth in the domestic-born population will slow, though it will still be substantial.

- Immigration is becoming a more significant element of housing demand.
- Immigration picked up strongly in 2005 and we expect that trend to continue in the immediate years ahead, because of the free access granted to nationals of the ten accession states and the relatively better income and employment prospects in Ireland.

House Price Inflation

- As the rate of house building accelerated we had expected some balance to be achieved between demand and supply, leading to a moderation of house price inflation. This seemed to be in train the first half of 2005 with house prices inflating at about 4%.
- Since then, prices have accelerated to about a 12% pace and, for the first time in three years, private rents are also rising. This suggests that there has been an acceleration in immigration and this view is supported by the rise the number of applications for Private Public Services numbers from nationals of the ten new EU member states since the summer of 2005.
- We, therefore, expect that house prices will rise by 11% in 2006 and then slow to perhaps 6% in 2007.
- Were demand and supply in balance, we would expect a lower and more stable rate of increase in house prices. There is no sign that we are about to approach that position in 2006 but it should not be too distant at the current pace of house building.

Rising Income and Wealth - second homes

- Demand for housing is not just dependent on the growth of population, but also on incomes and wealth. As incomes rise "consumption" of housing tends to rise more than in proportion. This may be manifested in upgrading the quality of existing houses and the building of second homes.
- We estimate demand for second homes to be about 10,000 per annum based on the relationship between house completions and changes in the population in each county between the 1996 and 2002.

Affordability

- Mortgage repayments as a percentage of disposable income for borrowers taking out a 90% mortgage have been below 30% for most of the 1990s and were 28% in 2005.

- If the ECB raises interest rates to 4% by 2007 and house prices rise by 11% in 2006 and 6% in 2007, mortgage repayments for a 90% loan on the average house should still be less than 35% of average household disposable income. This would not appear likely to bring about a setback in the market but the risks would increase were the burden to rise a lot further.
- Within in the next few years, house prices will need to moderate and rise no faster than incomes. The elevated levels of house completions and the gradual tightening of affordability should help push the market in the direction of balance.

Projections of Housing Output

- On our central population projections for immigration, and allowing for trend decline in household size, we would expect the underlying demand for housing to be about 65,000 per annum until 2015, subsiding thereafter to about 55,000 per annum until 2020.
- If gross immigration were to rise slightly from the 2005 level to 75,000 per annum and remain there until 2020, the annual demand for housing could be as high as 75,000 per annum until 2020.
- On an assumption that net immigration would fall to zero between now and 2020, the demand for houses would be about 50,000 per annum until 2010 and about 45,000 or less per annum, in the period to 2020.
- These estimates all allow for 10,000 second homes per annum and a further 10,000 to replace obsolete housing stock.

Chapter 10 - Demand for Cars

- The number of private cars in the state rose from 1 million in 1996 to 1.6 million in 2004, a growth rate of over 5% per annum. Most of this reflected an increase in the number of cars per 1000 population.
- The rate of car ownership in Ireland, at 391 per 1000 population in 2004, remained well below the level in the UK (447 in 2002) and the EU-15 (491 in 2002).
- Since income per capita in Ireland is now above that of the EU-15, it is to be expected that the trend rise in rates of car ownership will continue.

- In simulating the possible size of the car stock by 2020, we calculate that, were there to be no increase in ownership per head of population, car numbers would rise to a total of 2.1 million in 2020.
- If we project that the rate of ownership per 1000 population continues to rise at the 1999-2004 pace, the car stock would reach 3.3 million by 2020. This would, however, result in a level of ownership per 1000 population of over 600, which would be above the current levels in the US.
- Our central estimate is that the numbers of cars could reach 2 million by 2010 and 3 million by 2020.
- Car numbers in Dublin and surrounding counties could rise from 0.6 million in 2004 to 0.8 million in 2010 and 1 million by 2015.
- The national rate of car ownership in 2020 would be 558 per 1000 population on this basis, below the level in Italy in 2002, which was then at the top of the range for the EU-15.
- Annual car registrations would be about 170,000 to 200,000 per annum until 2015 on this basis and about 230,000 per annum until 2020.
- We doubt increased use of public transport will materially affect this prospect. The 2002 Census shows that train and bus were used by only 9% of workers as a means of travelling to work, compared to 62% who used cars.
- Aggregate miles travelled to work rose by over 10% per annum between 1996 and 2002. About 86% of the increase originated in towns (i.e. excluding cities) and rural areas, a rise in average journey length being a large contributor.

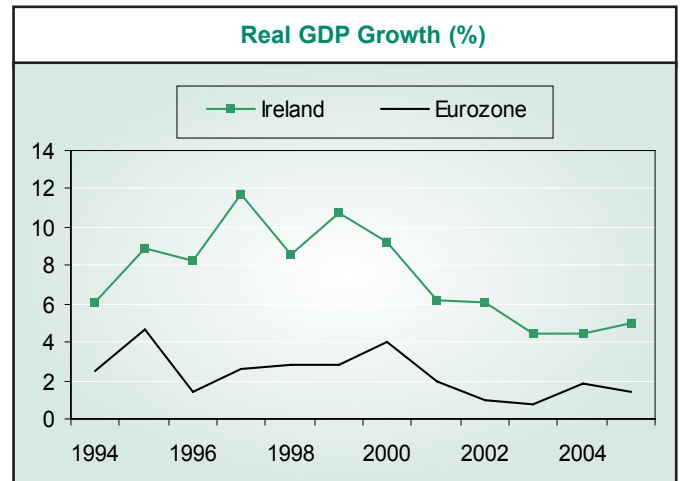
Introduction and Background

In 1998, NCB Stockbrokers published a report entitled "Population & Prosperity, Sustaining the Boom". That document outlined Ireland's demographic prospects and indicated the important ways in which population change might be expected to affect the economy. In particular, it argued that the emerging changes in the size and age structure of the Irish population were a crucial factor explaining the elevated pace of economic growth then being experienced.

It also argued that those same demographic developments provided a strong basis for believing that the Irish economic boom would be a protracted one. In the period since the publication of that report, strong growth accompanied by rising employment and living standards has been essentially uninterrupted. The resilience of the Irish economy has been tested in the recent period of international recession and protracted slow growth among Ireland's European trading partners yet the buoyancy of the economy was barely dented.

In particular, employment continued to grow right through the period of international slowdown. Although there was a short period in which the pace of growth slowed, at its lowest point in the third quarter of 2002 the annual rate of increase in employment in Ireland was 1.1% - a pace that would be very acceptable in many other European countries currently. From late-2002 on, however, employment growth reaccelerated briskly, reaching 4.7% on average during 2005. In contrast, the fastest pace recorded for employment growth in the EU-15

Population change was the crucial factor behind the Irish economic boom



Positive demographics have made the Irish economy resilient

in any year since the late-1990s was the 2.2% rate seen in 2000 (a time when Irish employment was growing at close to 5%). Thereafter, however, employment growth in the EU-15 slowed and has remained fractional.

Since the end of 1997, total employment in Ireland has risen by nearly 513,000, or almost 35%. Job creation in the private, domestically oriented sectors of the economy accounted for almost 400,000 of this extra employment. Numbers at work in the private services sector grew by over 267,000 in the period while employment in construction rose by more than 130,000. The balance of the job gains is accounted for by a rise of nearly 144,000 in predominantly public sector occupations. By contrast, employment in "other" industrial sectors - mainly manufacturing, which was exposed to external economic developments - fell a net 10,000 while numbers in agriculture continued their secular decline and fell by over 19,000. The dominance of growth in private, domestically oriented employment as well as the degree to which the rate of job gain in Ireland outstripped that elsewhere in the EU is compelling evidence that the growth of the Irish economy has been driven primarily by a domestic dynamic. That dynamism largely resulted from demographic change.

***The Irish economic boom has been driven
by a domestic dynamic***

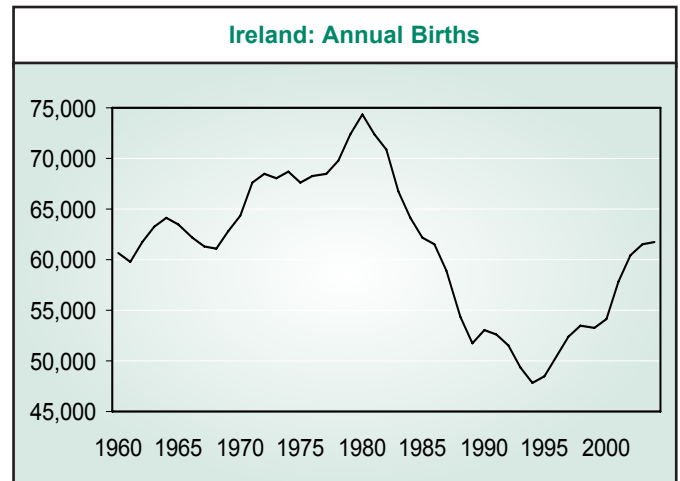
The key development in Irish demography that powered the economy in the past ten years was the accelerated growth in population in the economically active age groups between 15 and 64 years. This, in turn, led to an accelerated rate of

growth in the labour supply and to strong growth in those population cohorts with the highest earning and spending capacity. Thus, both the supply and demand sides of the economy received a structural boost from demographic change. Much of the beneficial change in Irish demography is rooted in the 1970s and 1980s. Ireland experienced a baby boom between 1971 and 1983. The generation born in that period spent most of the 1980s and early-1990s going through the educational system. But from the mid-1990s, the baby boom generation began to add to the supply of labour.

The second key factor was a sharp fall in the Irish fertility rate from the early-1980s until 1994/95. The resulting decline in family size was accompanied by an upsurge in the rate of female participation in the labour force, which has continued. These two developments led to a rapid acceleration in the growth of the labour supply. This, in turn, boosted the supply-side capacity for growth in the economy.

These same developments also boosted the demand side of the economy because the maturing of the baby boom helped to elevate the rate at which the most important earning and spending age groups in the population - those between 25 and 54 - were growing, while the falling fertility rate was primarily responsible for a sharp reduction in the burden of dependency on the economically active population. Thus, structural growth in the domestic market for goods and services was accompanied by rising national income per head of population.

Rapid growth in the economically active age groups boosted supply and demand



To be sure, the economic environment in which such fundamentally important demographic developments emerged could hardly have been more advantageous. The world economy was buoyant for much of the period so external influences were benign. More importantly, monetary and fiscal conditions were improving significantly. Ireland's participation in the euro area led to an initial sharp fall in interest rates and subsequent fluctuations in rates were relatively small. This left interest rates significantly lower than had been experienced historically and meant that the economy has been operating in a prolonged period of cheap financing.

Government action in the late-1980s to stem the spiralling build-up of public debt was followed by more prudent management of the public finances in the 1990s. This was driven significantly by a need to satisfy specific fiscal conditions in order to qualify for participation in the euro area. It was also aided by the strictures imposed by the system of fiscal surveillance operating under the excessive deficits procedures of the EU Treaty. The net result of this, in combination with the benefits the Exchequer derived from the burgeoning economy, was that room for manoeuvre was created which allowed the tax burden on individuals and industry to be lowered.

Thus, fiscal and monetary conditions presented no obstacles - and were, indeed, conducive - to the full realisation of the positive impact on the economy coming from the demographic changes.

The demographic boost came in favourable conditions - external and internal

Purpose of this report

This purpose of this report is to update our demographic projections in order to take account of developments since 1998 and to extend the horizon of the forecasts further into the future. The purpose is also to review the likely economic implications of the future development of the population both in size and structure.

For the population projections, the forecast horizon is the year 2050. One of the key demographic developments in the future will be the gradual aging of the Irish population and an extended time horizon is appropriate in order to adequately bring out the full dimensions of that prospect.

As far as likely developments in the economy consequent on shifting demographics are concerned, we extend our analysis no further than 2020. The longer period covered in the population forecast is useful for depicting the broad shape of likely demographic developments. Qualitative aspects of the forecast, such as the prospective ageing of the population and broad shifts in the age structure, are likely to be quite robust to the assumptions made. However, aspects of the forecast more specifically germane to the economic outlook (e.g. the prospective growth in the labour force, and projections for specific age groups) become increasingly determined by the assumptions made - particularly for influences such as

This report analyses the economic implications of demographic change up to 2020....

....and the population profile to 2050

migration - the further into the future the forecast extends. This makes prognostication over the very long term of questionable value. In addition, developments in exogenous conditions that interact with the influence of domestic demographics (e.g. technological change, the external economic environment, geopolitical developments) may change radically over the long term. A shorter forecast horizon is, therefore, appropriate.

In the first chapter of the report, we outline the methodology and assumptions adopted in the construction of the population projections and draw out their principal features. Given that inward migration is now a significant feature of Irish demography, Chapter 2 examines the available information on the immigrant population. Chapters 3, 4 and 5 describe the principal features of the population projections and contrast them with demographic prospects elsewhere in the EU. Chapters 6 and 7 focus on the economic implications in the period to 2020 examining both the consequences for the supply-side of the economy and the likely impact on household demand. In the latter context, the analysis marries the population projections with information derived from the Household Budget Survey in order to examine potential sectoral implications. Chapter 8 examines the sensitivity of the projections to alternative migration assumptions. Chapters 9 and 10 examine in more depth the ramifications of the demographic outlook for housing requirements and for the likely growth in the demand for cars and in congestion on the roads.

As well as the broad outlook for supply and demand, the report looks at the implications for housing and demand for cars

Chapter 1

Forecasting the Population

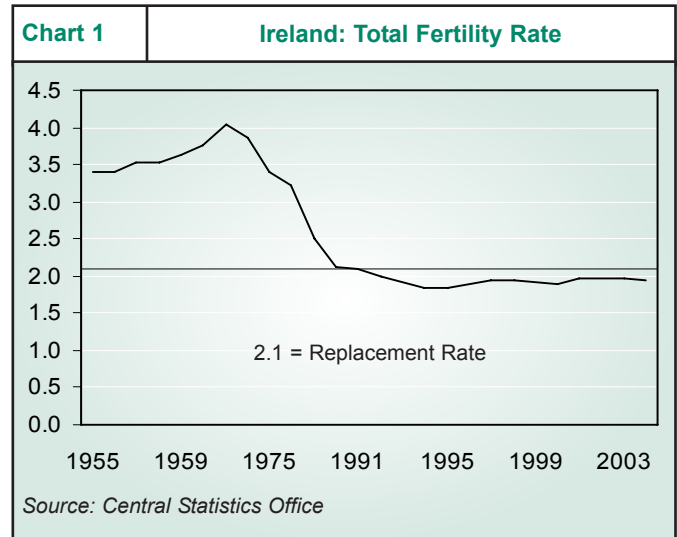
The key building blocks of any population forecast are

- the population at the start of the forecast period
and assumptions about
- births
- deaths
- migration flows
in the future.

As with all predictions, population forecasts necessarily embody a margin of error. That margin increases the farther into the future the forecast extends since quite significant changes in the underlying determinants of population growth - fertility, life expectancy and migration - can occur over long time periods. However, the error margin for population forecasts over shorter time horizons, particularly ten or twenty years ahead, is inherently smaller than for the generality of economic predictions since most of the population that will exist at the forecast horizon is already in existence. For the rest, it depends on the extent to which people are being added to the population (births plus inward migrants) relative to the pace of subtractions from it (deaths and outward migration).

Medium-term population forecasts are inherently reliable

- Forecasts for annual births are derived from the numbers of females in the childbearing age groups, i.e. 15 to 49, and assumed age-specific fertility rates.
- Predictions of the annual number of deaths are derived from age-specific mortality rates, which depend on assumptions made about life expectancy.
- Assumptions made about inward and outward migration flows are necessarily speculative but are based on trends in recent years and an assessment of the forces underlying those trends.



The following are the specific assumptions made in the construction of the population forecasts in this report:

Fertility

The number of births in each year is projected on the basis of the pre-existing population of females between 15 and 49 years of age and assumed fertility rates for each five-year age cohort within that grouping.

Over the past forty years, the total fertility rate in Ireland has fallen sharply. The total fertility rate is a theoretical average number of children a woman might expect to have in her

Fertility has fallen sharply in the past 40 years

childbearing years. For any individual year, the total fertility rate is calculated from the actual birth rates of that year. In 1965, the fertility rate was a little over 4. It hit a low of just over 1.8 in 1994 and 1995 but has risen slightly since and appears broadly to have stabilised just below 2 in the past four years. The secular reduction in the total fertility rate up until the mid-1990s clearly reflected a fundamental change in attitudes towards desired family size and a significant change in lifestyle choice by women since birth rates declined for all five-year age cohorts between 20 and 49. The decline in fertility accelerated after 1975, presumably reflecting, in part, the legalisation of artificial contraception from 1979 onwards.

Declining Fertility

In the thirty years to 1995, birth rates for age cohorts between 20 and 39 years fell by between a half and two-thirds. As Table 1 shows, the largest absolute decline occurred in the 25 to 29 year group where the birth rate dropped by over 129 per thousand of the female population in that age group - from 236.1 to 106.7 - between 1965 and 1995. Proportionally, however, the sharpest falls occurred among women between 40 and 49 years, where births per thousand of the population in 1995 were only a fifth to a quarter of what they had been thirty years earlier.

Table 1	Ireland: Fertility Rates			
	Births p/1000	1965	1995	2004
	15 - 19 years	14.0	15.1	17.6
	20 - 24 years	125.1	50.3	49.1
	25 - 29 years	236.1	106.7	87.9
	30 - 34 years	218.9	123.5	133.4
	35 - 39 years	150.3	60.3	84.6
	40 - 44 years	57.6	13.1	15.8
	45 - 49 years	4.2	0.8	0.6
	Total Fertility Rate	4.03	1.85	1.95

Source: Central Statistics Office

Since 1995, birth rates among mothers in the 20 to 29 year age cohort have fallen further but rates among women in the 30 to 44 year bracket have risen a little.

The birth rate for the 15 to 19 year age group did not show the same secular decline as that seen in other age groups between 1965 and 1995. Indeed, it rose between 1965 and 1980, peaking at 23 per thousand in the latter year. Having fallen back to just over 15 per thousand in 1995, it has been fluctuating in a 17.5 to 20 per thousand band since then.

The total fertility rate has risen from its 1994/95 low

Recent Stabilisation

The small rise in the total fertility rate since the 1994/95 low has been concentrated mainly in an increase in the birth rate

Table 2	Ireland: Age of Mother at Birth of First Child					
	1991		1995		2004	
	Number	% of Total	Number	% of Total	Number	% of Total
under 15	54	0.3	53	0.3	52	0.2
15-19	2,422	13.4	2,186	12.3	2,164	9.0
20-29	11,238	62.0	10,020	56.4	11,341	47.0
30-39	4,116	22.7	5,310	29.9	10,032	41.6
40-49	137	0.8	187	1.1	441	1.8
Other	163	0.9	4	0.0	95	0.4
Total	18,130	100.0	17,760	100.0	24,125	100.0

Source: Central Statistics Office

among women in their thirties, especially in the 35 to 39 age group, and appears to reflect a shift towards later births.

As may be seen from Table 2, in 2004 (the latest year for which full data are available), mothers between 30 and 39 years of age accounted for 41.6% of first-born children. In 1995, that proportion was 29.9%, having risen from 22.7% in 1991. By contrast, mothers between 20 and 29 years of age accounted for 47% of first-borns in 2004, down from 56.4% in 1995 and 62% in 1991.

These developments seem to be associated with the rising rate of female participation in the labour force and may represent a desire on the part of women to delay starting a family until their careers are more established. It may also, perhaps, reflect an increased pressure on couples to maintain two incomes in order to finance house purchase.

Stable Fertility Assumed in the Future

Ireland's total fertility rate is, and has historically been, significantly above both the EU average and above all, or virtually all, those of other EU member states over the last forty years. However, while other EU member states also

Mothers in their thirties account for an increasing proportion of births

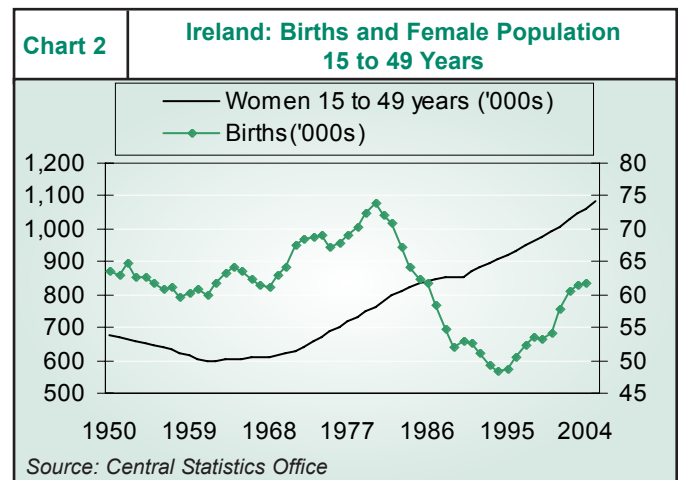
Table 3	Total Fertility Rates in EU Countries	
	2003	2004
Ireland	1.98	1.95
France	1.89	1.90
Finland	1.76	1.80
Denmark	1.76	1.78
Sweden	1.71	1.75
United Kingdom	1.71	1.74
Netherlands	1.75	1.73
Luxembourg	1.63	1.70
Belgium	1.64	1.64
Cyprus	1.50	1.49
Austria	1.38	1.42
Portugal	1.44	1.42
Estonia	1.37	1.40
Germany	1.34	1.37
Malta	1.46	1.37
Italy	1.28	1.33
Spain	1.30	1.32
Greece	1.28	1.29
Hungary	1.27	1.28
Lithuania	1.26	1.26
Slovakia	1.20	1.25
Latvia	1.29	1.24
Czech Republic	1.18	1.23
Poland	1.22	1.23
Slovenia	1.20	1.22
EU-15	1.52	1.52
EU-25	1.48	1.50

Source: Central Statistics Office, Eurostat

experienced sharp declines in fertility between 1965 and 1995, the fall in the Irish total fertility rate in the period was larger than that seen in any other EU country. The fact that the Irish fertility rate remains above those in other member states might suggest scope for further decline. However, because the Irish rate has risen from its lows and has shown a tendency towards stability in recent years this is not as obvious a proposition as it appears. Moreover, as Table 3 shows, not all EU member states have fertility rates substantially lower than Ireland. Peer example would not, therefore, necessarily point to a renewed decline in Irish fertility either. Largely on the basis of the recent relative stability, our population projections assume that the age specific fertility rates for each five-year cohort within the 15 to 49 age group hold constant at the levels recorded in 2004. We acknowledge, of course, that any renewed tendency for the Irish fertility rate to decline would materially affect our population projections, especially for the later periods.

However, it would not affect our projections for the labour force over the next fifteen years since, by definition, those born between now and 2020 will not be part of the population of working age in the interim. Thus, estimates for potential growth in the economy in the period to 2020 and for the potential development of consumer demand in that period are largely insensitive to the fertility assumption.

Fertility rates assumed to hold at 2004 levels



The Baby Boom and Baby Bust

Although fertility rates in the 1950s and 1960s were close to twice current rates, the average annual number of births, at about 62,000, was only around 2,000 higher than the average in recent years (Chart 2). A prime reason for this is that the population of women in the childbearing, 15 to 49 year age group was falling during the 1950s and grew only very slowly (at about 1,500 annually) during the 1960s. In the 1970s, because it was a period of net inward migration, the female population between 15 and 49 years grew at a relatively rapid rate. Numbers increased at an annual rate of almost 14,500 between 1970 and 1980 compared with the virtually static female population in this age range in the 1960s. This was accompanied by a surge in the annual number of births, which was especially pronounced between 1971 and 1983 during which time the annual number of children born averaged almost 70,000. The peak year of the baby boom was 1980 when the number of births exceeded 74,000.

After that peak and up to the mid-1990s, there was a steep decline in the yearly number of births, reflecting both a slower rate of growth in the female population of childbearing age - at less than 10,000 per year - and, more importantly, the sharp fall-off in total fertility referred to earlier. The low point for births

A rising female population in the 15 to 49 year age cohort in the 1970s was accompanied by a baby boom

Annual births fell very sharply from the early-1980s to the mid-1990s

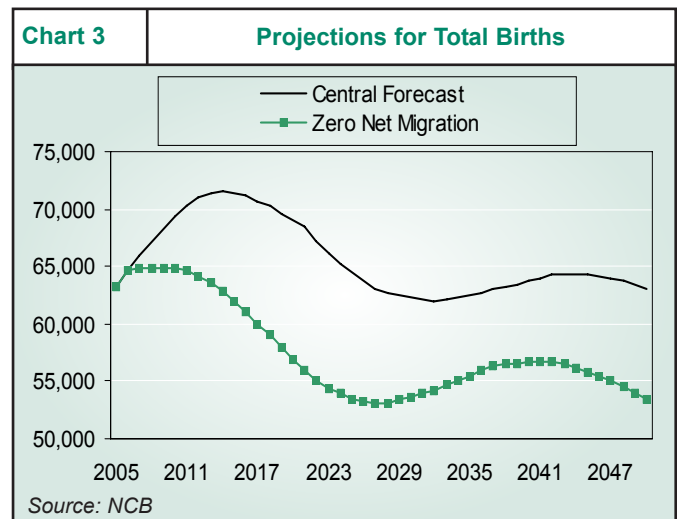
was reached in 1994 when they totalled 48,255. Since then the number has been rising steadily and came to 61,684 in 2004. In part, this recovery reflects the fact that growth in the female population between 15 and 49 has speeded up again as women born during the 1971-1983 baby boom attain childbearing age.

The Baby Echo

The precise trajectory for the total number of births in the period ahead will depend not just on the fertility rate, but on its interaction with other elements of population development, crucially the pace and direction of net migration flows. However, even on the basis of zero net migration, total births would increase for most of the remainder of this decade, peaking at just about 65,000 in 2008 and 2009 before gradually subsiding over the following twenty years. If, however, migration develops in line with the assumptions used in our central scenario population forecast (see below), the current rising trend in total births will continue up to 2014 - at which point it will have increased to almost 71,500 - before subsiding in the period up to 2032. After that, there will be another period of rising numbers of births.

The current resurgence in births is essentially an echo of the 1970s' baby boom and reflects the fact that women of that

Rising numbers of births currently are an echo of the 1970s baby boom



baby boom generation are now, themselves, having children. The fact that first births are now occurring later than in the 1970s is a reason the baby echo will probably last somewhat longer than the original baby boom. The projected upswing in births after 2032 will be yet another, though weaker, baby echo as females now being born begin to have children.

Strong Natural Increase

Allied with an annual level of deaths of around 30,000 over the next ten to fifteen years (see later), the annual number of births in our central scenario projection means that the underlying natural rate of increase in the population should be close to 40,000 - or about 1% - per year. In the longer term, although the number of births will remain relatively high, the natural rate of increase will slowly diminish as the death rate rises with the gradual ageing of the population.

Theoretically, a total fertility rate of 2.1 is regarded as the population replacement rate. A fertility rate below that implies that the population will ultimately decline. However, in Ireland's case, at the current level of the fertility rate such a decline would take a very long time to emerge. Certainly, it would not materialise over the next fifty years even on the

***The natural rate of increase in the population
is running at 1%***

assumption of zero net migration. Instead, the main manifestation for the foreseeable future of a sub-replacement fertility rate will be in the gradual ageing of the population.

Life Expectancy Rising

Life expectancy in Ireland has increased sharply in the past 100 years or so. Since 1901, male life expectancy at birth has risen by nearly 26 years to just over 75 years. For females the improvement has been greater, at almost 31 years, raising life expectancy at birth to just over 80 years. As a result, the current annual number of deaths of around 30,000 is little more than half what it was at the start of the 20th century and the death rate has fallen from almost 17 per thousand of the population to 7 per thousand.

Most of the gains in longevity were recorded in the period to 1961, with male life expectancy at birth rising nearly 19 years between 1901 and 1961 while female longevity increased by over 22 years. Since then, progress has been slower but quite steady, nonetheless, with gains of 7 years for males and nearly 8.5 years for females in the period 1961 to 2002 (the latest year for which Life Tables are available).

Table 4	Ireland: Life Expectancy at Birth	
	Males	Females
1901	49.3	49.6
1911	53.6	54.1
1926	57.4	57.9
1936	58.2	59.6
1941	59.0	61.0
1946	60.5	62.4
1951	64.5	67.1
1961	68.1	71.9
1966	68.6	72.9
1971	68.8	73.5
1979	69.5	75.0
1981	70.1	75.6
1986	71.0	76.7
1991	72.3	77.9
1996	73.0	78.5
2002	75.1	80.3
Change		
1901-2002	25.8	30.7

Source: Central Statistics Office

Life expectancy should continue to rise

Gradual Rise Should Continue

In general, it seems reasonable to assume that, with continued advances in medical and social welfare, life expectancy will continue to lengthen though the pace of improvement may remain a gradual one. Thus, the mortality rates used in the population forecast are based on the assumption that gains in life expectancy in the future will continue at about the pace recorded in the 1991 to 2002 period, i.e. longevity across the age groups up to 60 will increase at a rate of 2 to 3 months per year. On this basis, life expectancy at birth for males would increase from 75.1 years in 2002 to 79.5 years by 2020 and to 82.8 years by 2035. For females, current life expectancy at birth of 80.3 years would rise to 84.1 years by 2020 and to 86.9 years by 2035. In 2050, the assumptions imply that male life expectancy would have risen almost to 87 years while female longevity would have increased to over 89 years. The gap between male and female longevity, thus, narrows over the forecast time span reflecting the continuation of the trend between 1991 and 2002. At its peak in 1986, the gap between male and female life expectancy levels was 5.7 years but it had narrowed to 5.2 by 2002. The projected two-year gap in 2050 would restore the relativity to where it was in 1946.

Table 5	Deaths and Death Rate per 1000 of the Population	
Annual Average	Deaths Number	Rate per 1000
1864-70	67,323	16.2
1871-80	69,611	18.1
1881-90	64,220	17.6
1891-00	58,994	17.7
1901-10	53,577	16.9
1911-20	51,453	16.6
1921-30	43,203	14.5
1931-40	41,841	14.2
1941-50	41,450	14.0
1951-60	35,374	12.2
1961-70	33,574	11.7
1971-80	33,727	10.6
1981-90	32,376	9.2
1991-00	31,646	8.7
1991	31,498	8.9
1992	30,780	8.7
1993	31,656	8.9
1994	30,744	8.6
1995	31,494	8.7
1996	31,514	8.7
1997	31,605	8.6
1998	31,352	8.5
1999	31,683	8.5
2000	31,115	8.2
2001	29,812	7.7
2002	29,348	7.5
2003	28,823	7.2
2004	28,151	7.0

Source: Central Statistics Office

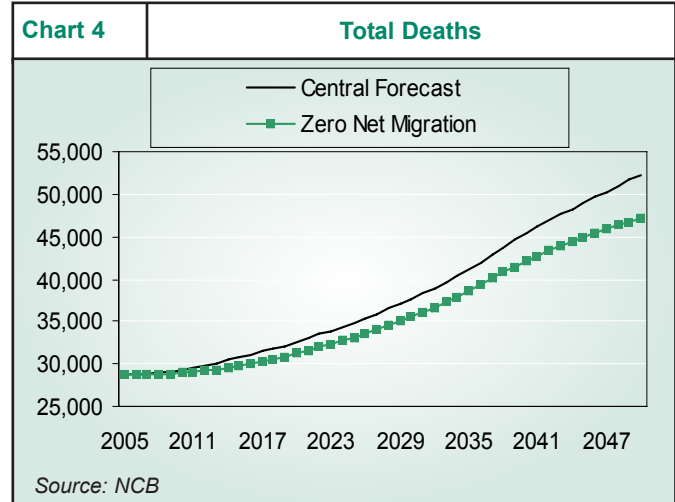
The death rate should fall further in the near term but it will ultimately rise as the population ages

Implications for the Death Rate

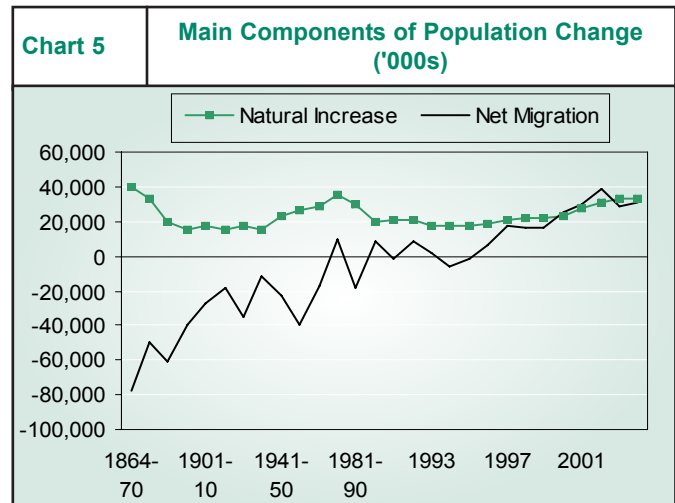
Over the next ten years, the absolute annual number of deaths should change very little, remaining below 30,000 for nearly all of that period. With a growing population, therefore, the death rate per thousand of the population will be declining further and should fall to 6.1 per thousand by 2015 where it will stabilise until 2021 on our assumptions. Thereafter, although the death rate will remain below 7 per thousand of the population until 2033, the absolute number of deaths will gradually increase towards 40,000 by that date. Even though life expectancy will be rising, as the population grows and as the proportion of the population in the older age groups increases the annual number of deaths will rise. It should be over 52,000 by 2050 at which point the death rate will have risen close to 9 per thousand of the population.

Migration

Ireland's experience for most of the past one hundred and sixty years has been of sustained net outward migration. For most of that period, too, the net outward flow of emigrants led to a fall in the population as a whole since it exceeded the annual natural increase (i.e. balance of births and deaths). By the early 1960s, however, the scale of net emigration had fallen



Ten years of sustained net immigration

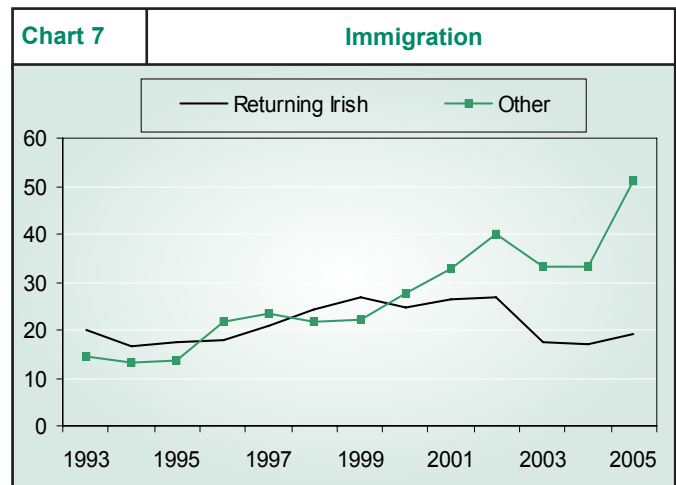
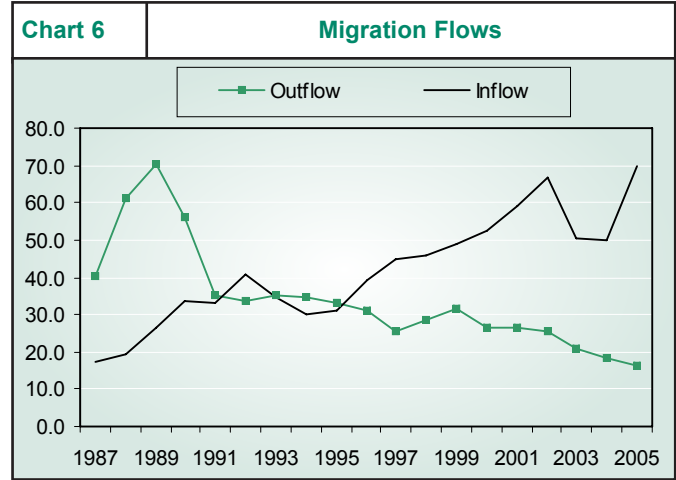


below the rate of natural increase and population numbers began to recover.

This recovery gathered pace in the 1970s when, for the first time since the Famine of 1847, the number of migrants coming into Ireland was greater than the outward flow. Unfortunately, this trend did not survive the recessionary 1980s, during which outward migration resumed on a scale not seen since the 1950s. Between 1980 and 1990, there was a total net outflow of over 200,000 people. Most of this occurred in the second half of the decade, with the net outflow amounting to 160,000 between 1986 and 1990. The net migrant outflow dwindled quite abruptly after 1990. It totalled only 1,600 over the five years to 1995. In 1996, the number of immigrants once again exceeded that of emigrants and there has been a net inward flow of migrants ever since.

Fewer Emigrants

The switch from the historical pattern of sustained net emigration to continuous net immigration since the mid-1990s has reflected significant developments in both the outflow of people from the country and the inflow from abroad. In the first place, the outflow of migrants from Ireland has lessened steadily since it peaked at 70,500 in 1989. By 1996, the



outflow had fallen to just over 31,000. It varied between 25,000 and 32,000 for the following six years but has trended downward again since 2003. The outflow came to an estimated 16,500 in the year to April 2005, the latest for which official estimates are available.

Recent surge in immigration from new EU member states....

Rising Immigration

Just as the numbers leaving the country were peaking in 1989, the number of migrants coming to Ireland began to rise. In the late-1980s the annual number of immigrants averaged around 21,000 but, during the 1990s, it gradually rose towards 50,000 per year. It pushed through that level in 2000 and rose to 70,000 in the year to April 2005. People who had formerly emigrated from Ireland constituted more than half of the migrant inflow during the 1990s. Their numbers peaked at around 27,000 annually between 1999 and 2002. Since then, the number of returning former emigrants has fallen. In the year to April 2005, it is estimated to have totalled 19,000. Initially, the declining inflow of former Irish emigrants was counterbalanced by a rising number of migrants from outside the EU. Most recently, following European Union enlargement there has been a surge in immigration from the new member states.

....may be underestimated

The breakdown of the officially estimated 70,000 immigrants in the year to April 2005 includes a total of 26,200 from the new EU member states. There are indications that, if anything, this figure may be an underestimate. Data on allocations of Personal Public Service (PPS) numbers show that over 85,000 numbers were allocated in the year to April 2005 to people from the new EU member states. The official estimate for immigration is, therefore, less than one third of the number of people from these countries to whom PPS numbers were issued. Even allowing for the possibility (a) that some of the PPS numbers were allocated to people from the new member states who were already resident, and (b) that not all who received a PPS number ultimately remained in Ireland, this seems a low proportion. This is especially the case since PPS allocations at time of writing are running at around 9,000 per month.

Restricted access to most other EU-15 labour markets for workers from new member states should continue to boost migration to Ireland

Assumptions for Future Migration Flows

Assumptions about future migration levels and patterns are substantially conjectural. They are particularly so in a period of transition as is currently the case. EU enlargement has increased the migrant flow within the enlarged Community but the older member states, with the exception of Ireland, the UK and Sweden, are operating restrictions on the access of workers from the new member countries to their labour markets.

The employment restrictions operated by other member states were put in place for an initial period of two years from May 2004. After a review in 2006 the restrictions can be maintained for a further three years at the discretion of the member state. The period of restriction can be extended for a final two-year period, but only if there is evidence that labour flows had disrupted or were threatening to disrupt a member state's labour market.

Thus, restricted access for new member state nationals is likely to last until 2009 and possibly until 2011. While the restrictions are in force, it would not be surprising for Ireland, the UK and Sweden to be the recipients of higher numbers of migrants than might otherwise be the case. Once the restrictions are lifted, migrant flows into Ireland, the UK and Sweden may lessen but it seems reasonable to assume that they will be elevated in the interim.

More generally, the buoyancy of economic activity in Ireland and the associated employment opportunities relative to the position elsewhere in the European Union are well known. As set out elsewhere in this report, there is every reason to believe that this contrast will persist, with growth in the Irish economy likely to continue to outpace that elsewhere in the EU by a large margin. As a result, the relative attractiveness of Ireland as a migrant destination is likely to remain strong.

A strong Irish economy will remain an attraction for migrants

A relatively low level of emigration should continue

On the emigration side, though numbers leaving Ireland have declined in recent years, some continued outward flow can be expected. In part, this may simply represent young people taking time out to travel for a period before settling into their careers. It is also likely to reflect some reflow of former non-Irish immigrants. A substantial proportion of annual migration outflow since the late-1980s has been accounted for by persons in the 15 to 24 year age group. The concentration peaked in 2001 when that age category constituted almost 81% of all emigrants. Since then, the proportion has fallen as the number of outward migrants in the 15 to 24 year category has fallen and emigrant numbers in the 25 to 44 year age cohort have increased.

Our central population forecast assumes that the inflow of new immigrants will hold for the period to 2010 at the 70,000 level recorded in the year to April 2005. Thereafter, we assume it will gradually diminish to around 43,000 by 2015 and hold at that level up to 2020. For emigration, we have assumed that the rate of outflow in 2005, i.e. around 4 per 1000 of the population, broadly holds over the forecast period. The result of these assumptions is that there is a net inward migration flow of around 53,000 annually in the years to 2010. From then until 2015, an inflow remains but it gradually falls to 25,000 where it stabilises until 2020. After 2020, we assume zero net migration.

Net immigration is assumed to hold at an annual 53,000 to 2010, falling to 25,000 by 2015 and to zero after 2020

Main Assumptions

- **Fertility:** Age specific fertility rates for each five-year cohort within the 15 to 49 age group are assumed to remain at the levels recorded in 2004 (the latest year for which full data are available), implying a total fertility rate of just below 2.
- **Life Expectancy:** Gains in longevity are assumed to continue at about the pace recorded in the 1991 to 2002 period, i.e. at a rate of 2 to 3 months per year. On this basis, life expectancy at birth for males would increase from 75.1 years in 2002 to 79.5 years by 2020 and to 87 years by 2050. For females, current life expectancy at birth of 80.3 years would rise to 84.1 years by 2020 and to 89 years in 2050.
- **Migration:** The inflow of new migrants is assumed to hold at the 70,000 recorded in the year to April 2005 for the period to 2010. Thereafter, we assume it will gradually diminish to around 43,000 by 2015 and hold at that level up to 2020. For emigration, we have assumed that the rate of outflow in 2005, i.e. around 4 per 1000 of the population, broadly holds over the forecast period. The assumptions imply a net inward migration flow of around 53,000 annually in the years to 2010. From then until 2015, the net inflow gradually falls to 25,000 where it stabilises until 2020. After 2020, we assume zero net migration.

Chapter 2

The Migrant Population in Ireland

Overview

Immigrants will play an increasingly important role in the growth of the labour force and the demand for housing in the years ahead. It is, therefore, useful to profile the immigrant population as it was in the Census of 2002. We had a special analysis of the Census data done to identify the non-Irish born population so that we could make comparisons with the rest of the population. Our focus is on the profile of non-Irish born population, who had lived outside Ireland for more than one year. This group is of special importance because returning Irish are of diminishing importance now in the immigration flow. Irish emigration peaked at the end of the 1980s and ten years later the numbers of returning Irish peaked. This would suggest that the reflow from the surge of emigration in the 1980s was largely complete. Those who have not returned to Ireland by now are likely to do so in declining numbers.

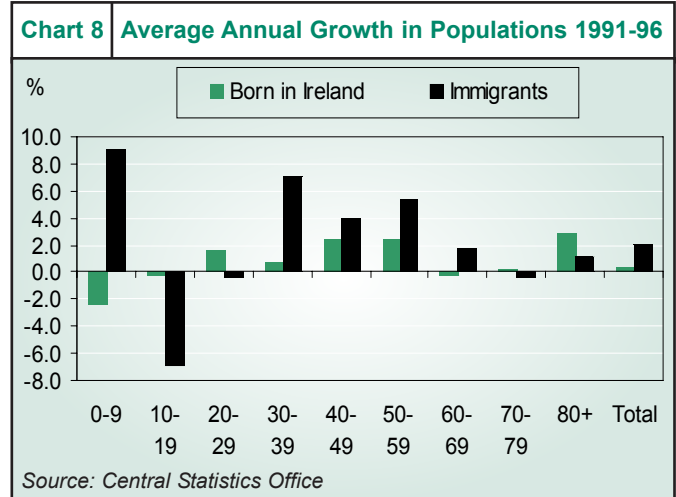
Unless otherwise stated "immigrants" in this chapter should be taken to mean those in the population who were not born in Ireland who had lived outside Ireland for more than a year.

Immigrants will increasingly be non-Irish nationals as distinct from returning Irish emigrants

Growth in the Immigrant Population

In 2002, 278,000, or 7% of the population, were born abroad and had lived outside Ireland for more than a year. This represented an increase of 86,000 on 1996. This was almost 30% of the growth in the total population during that period. In the period between 1986 and 1991, the immigrant population rose by 19,000, which was about 19% of the increase in the total population.

Chart 8 shows the annual rates of growth by age cohort for the population born in Ireland and the immigrant population in the 1991-96 period and Chart 9 shows the growth rates between 1996 and 2002. Between 1991 and 1996 the population born in Ireland grew by 0.4% per annum as compared to 2.1% per annum growth in the immigrant population. The comparable growth rates for the 1996-02 period were 0.8% and 6.3%, respectively. Looking at the growth among the age cohorts in the 1996-02 period, we can see that the cohort born in Ireland aged under-19 were static or falling and that cohorts in the 20-49 age group rose at a respectable 1.5%-2% annual pace. In contrast, most immigrant cohorts below the age of 59 rose by 4% or more per annum. Indeed, the 10-19 cohort and the 30-49 cohorts rose at an annual rate of around 8% or more over the six years to 2002.



The growth of the immigrant population accounted for 19% of the growth in the total population between 1991 and 1996 and 30% of the growth between 1996 and 2002

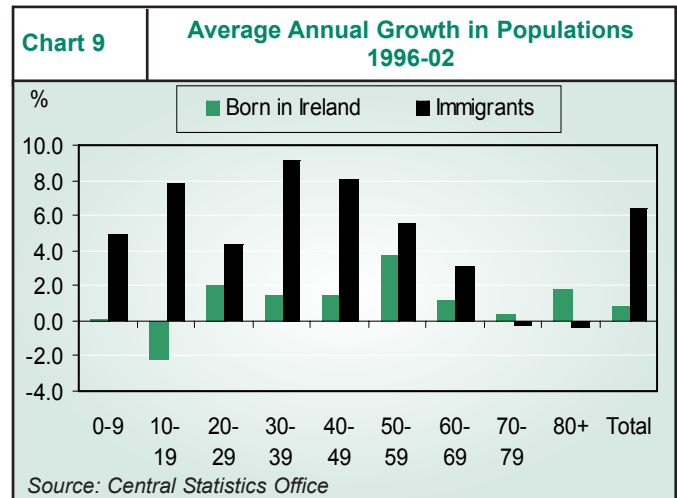
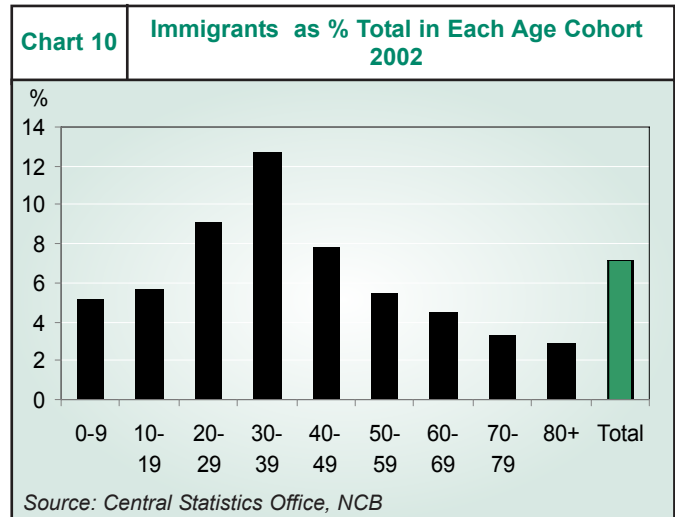


Chart 10 shows that immigrants made up 7% of the total population in 2002 but have much higher than average representation in certain cohorts. They are concentrated in the 20-49 age cohorts. Immigrants make up 9% of the 20-29 age cohort, 13% of the 30-39 age group, and 8% of the 40-49 age cohort. Of the total of 278,000 immigrants in the population in 2002, 57,000 were aged between 20 and 29, 74,000 were aged between 30 and 39 and 40,000 were aged between 40 and 49.



Economic And Occupational Profile

Table 6 compares the Irish with non-Irish nationals by economic status in the 1996 and 2002 Censuses. We can see that among those employed, the percentage not born in Ireland rose from 6% in 1996 to 9% in 2002. Also, their importance among the unemployed rose from 8% to 10% in the same period. However, the immigrant workforce was much more important in a range of sectors from food drink and tobacco (10%) to social workers, computer software occupations and other professional workers (15%-18%) in 2002.

Table 7 shows the distribution of immigrants over the main occupational groups and their representation within each indi-

The growth in immigrants between 1996 and 2002 was fastest in the cohorts aged 30-59 and they were most strongly represented in the 30-39 cohort, of which they comprised 13% in 2002

Table 6 Economically Active by Nationality

%	1996		2002	
	Irish	Non-Irish	Irish	Non-Irish
In employment	94	6	91	9
Unemployed	92	8	90	10
In Labour Force	93	7	91	9
Not Economically Active	95	5	94	6
Total	94	6	92	8

Source: Central Statistics Office, NCB

vidual group. The personal service and healthcare group accounted for 11% of immigrants, clerical and office workers 9%, sales occupations 9% and health and related workers 7%. In terms of the importance of immigrants in each of the individual occupational groups, they have the highest showing in computer software, at 18%, as compared to their 9% average share in the overall workforce. They are highly represented among other professional workers, social workers, health, scientific, technical and managers executives. Not surprisingly, they have low representation among government workers, garda and army. It is perhaps a little surprising, against anecdotal evidence, that they comprised only 8% of construction workers in 2002.

More recent information on immigrants in the workforce is available from the Quarterly National Household Survey (QNHS). It should be noted that the Census definition of non-Irish refers to those born outside Ireland who have lived outside for at least one year whereas the (QNHS) definition is based on a question on citizenship. A comparison of the QNHS in Q2 2002 with the Census, taken in April of that year, would suggest that the Household Survey underestimated the number of immigrants. Whereas the Census shows 9% of those employed in 2002 were born outside Ireland, the QNHS shows

Table 7 **Immigrants by Main Occupation Groups 2002**

2002	% Of Total	As % Of each group
Garda Síochána	0	2
Farming, fishing and forestry	2	3
Army occupations	0	3
Government workers	2	5
Chemical, paper etc	1	6
Communication, transport	4	6
Engineering and allied trades	3	6
Other manufacturing workers	3	7
Other gainful occupations	9	7
Electrical trades workers	2	7
Textile, clothing and leather	0	8
Building and construction	7	8
Sales occupations	9	8
Clerical and office workers	9	8
Teachers	4	9
Food, drink tobacco production	2	10
Business and commerce	4	10
Managers and executives	8	11
Personal service and childcare	11	11
Religious occupations	0	11
Scientific and technical	4	13
Health and related workers	7	13
Social workers	1	15
Other professional workers	4	16
Computer software	4	18
All occupations	100	9

Source: Central Statistics Office, NCB

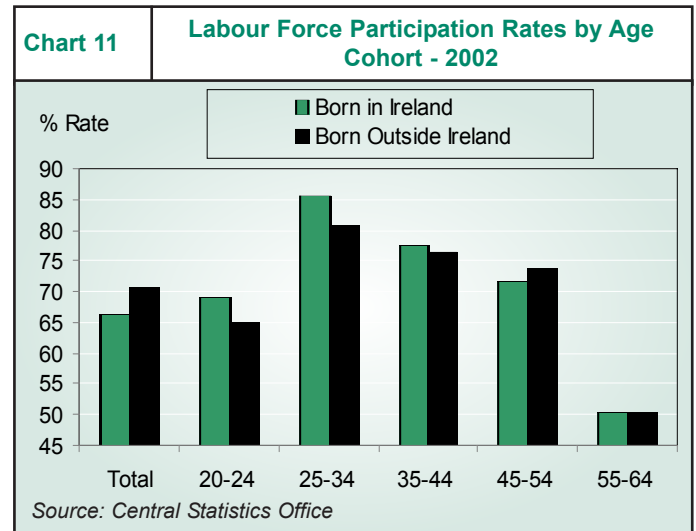
Immigrants made up 9% of the workforce in 2002 but were 18% of workers in computer software and 16% of other professional workers

that only 5% of those employed were non-Irish citizens. The Q3 2004 QNHS showed that foreign nationals accounted for 6% of those in employment, of which 1% were from EU Accession States. (This is the first quarter for which this breakdown is available). By Q4 2005, the percentage of foreign nationals had risen to 8.6% of those employed, with the Accession States accounting for 3.1%. Thus, of the 57,000 increase in foreign nationals in employment between Q3 2004 and Q4 2005, 42,000 came from the Accession States, according to the QNHS. Overall, if we take the rise in the percentage of non-nationals in employment from the QNHS in 2002 from 5.5% to 8.6% in Q4 2005 and add this to the 2002 Census figure of 9%, for those not born in Ireland it would suggest that perhaps 12% of those in employment were non-nationals at the end of 2005.

We estimate that immigrants have risen from 9% of the workforce in 2002 to more than 12% by the end of 2005

Labour Force Participation Rates

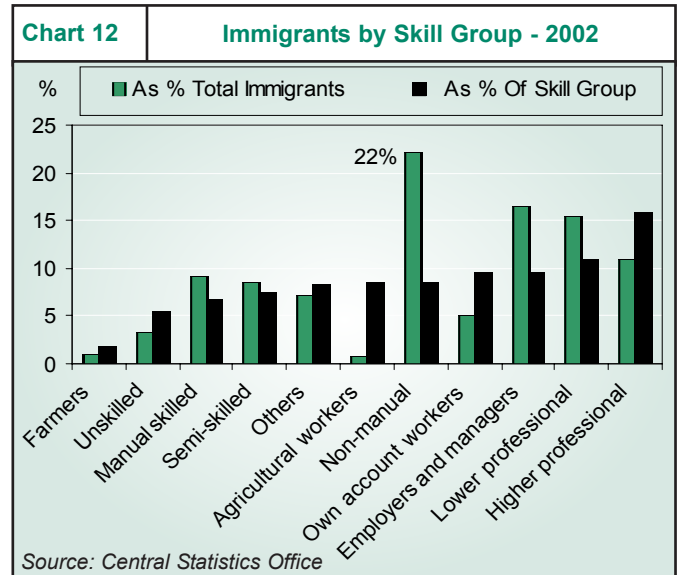
In 2002, there were 153,000 immigrants aged between 15 and 64 in the labour force, more than 50% above the 1996 level. This was almost 9% of the labour force. Chart 11 shows that, while the total participation rate for immigrants, at 71% was higher than the 66% for those born in Ireland, the participation



rates for individual age cohorts between the ages of 20 and 44 were lower for immigrants. The higher overall participation rate for immigrants derived from the fact that a larger proportion of them is in the 25-34 and 35-44 age groups, which have higher participation rates than other age groups. Of immigrants in the work force, 69% were in the 25-44 age group compared to 52% of the labour force born in Ireland.

Skill Profile

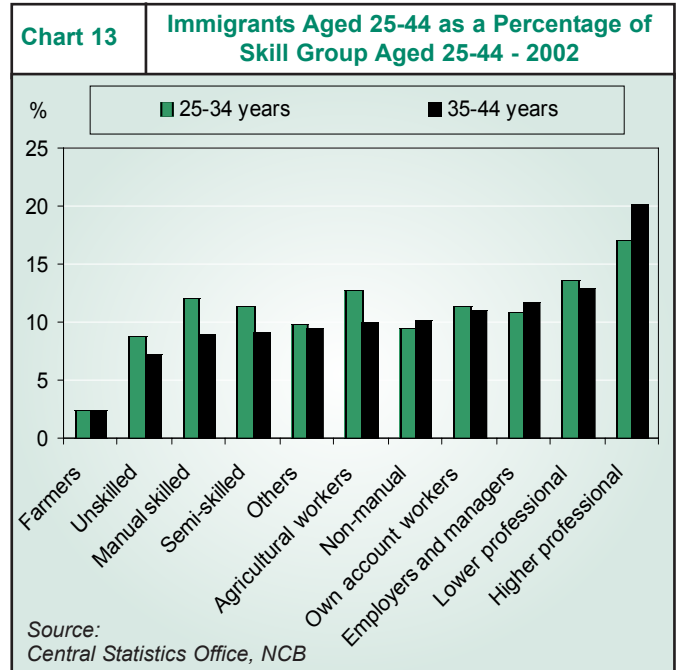
Chart 12 shows both the distribution of immigrants by skill group and the percentage of each skill group which they represent. If we look first at the distribution of skills among immigrants, the largest is non-manual at 22%. Employers and managers are a further 17% and lower professional and higher professional 15% and 11%, respectively. Thus, 65% of immigrants are in the upper ranges of the skill spectrum. This compares to 60% in the Irish born population, (not shown in Chart). The Census data confirm that immigrants are concentrated more in the skilled groups than in the manual and unskilled areas.



Labour force participation rates among immigrants were higher in 2002 than in the Irish population, reflecting their concentration in young age cohorts

Secondly, Chart 12 shows the representation of immigrants in each individual skill group. Immigrants accounted for 16% of the higher professional group and 11% of the lower professional group, as compared to the 9% share of immigrants in the overall labour force in 2002. Among employers and managers, own account workers and non-manual workers, immigrants accounted for 9% of each category.

Recall that 69% of immigrants in the workforce are in the 25-34 and 35-44 age ranges. Chart 13 shows immigrants in these age ranges as a percentage of the total in those age groups in each skill category. Immigrants represent just over 11% of the labour force aged 25-44, (not shown in graph). However, of the higher professional group aged 25-44, immigrants make up between 17% and 20%. Among lower professionals, immigrants aged 25-44 are 13%-14% of the workforce in that age range. For most of the other skill groups immigrants make up around 9% or higher of the workforce. Immigrants of this age are underrepresented, compared to their 9% average, in the workforce among farmers and the unskilled. Among agricultural workers between 10% and 13% aged 25-44 are immigrants.

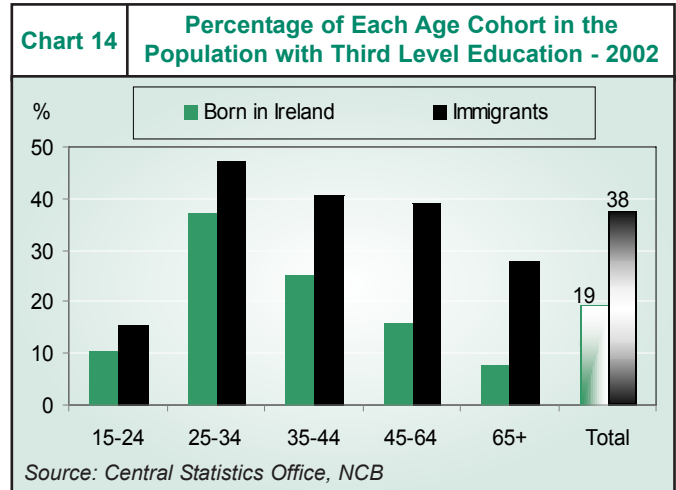


Of immigrants in the workforce, 65% are in the upper ranges of the skill spectrum compared to 60% of the Irish-born population

Educational Profile

Chart 14 compares the distribution by age of the population born in Ireland that completed third level education with that in the immigrant population. We can see that in total, the percentage of immigrants who have completed third level education, at 38%, is twice that among the Irish born population and is higher across all the age cohorts shown in the Chart. In addition, the concentration of the immigrant population in the younger age groups, where the proportions with third level qualifications are high, helps raise the average percentage compared to the Irish-born population.

The percentages with upper secondary education only were similar in both populations. Thus, the higher proportion with third level education among the immigrant population is mirrored by lower proportions with primary or lower secondary education only, as may be seen from Chart 15. Overall, 38% of the Irish born population have primary or lower secondary education only as compared to 21% among the immigrant population. This disparity between the populations is true across all the age cohorts but is most marked in the older age groups above the age of 45.



The percentage with a third level qualification at 38% among immigrants was twice that in the Irish-born population. The reverse holds when comparing those with basic education only

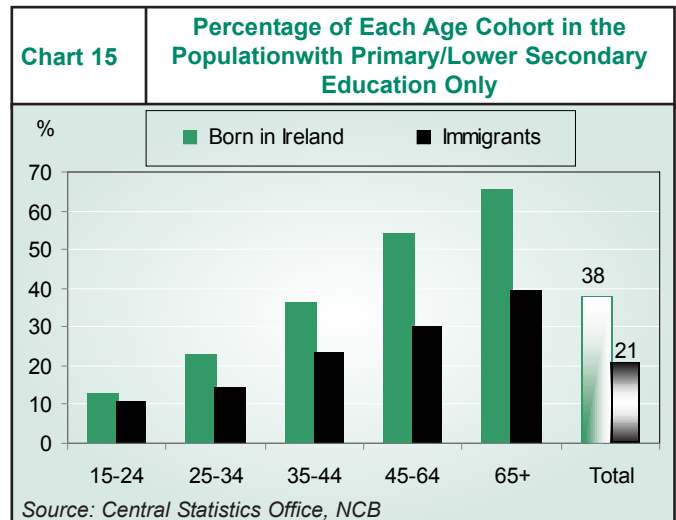


Table 8 shows that among occupations, the percentage of immigrants with third level qualifications is very high for scientific and technical (82%), business and commerce (80%), social workers (81%), computer software (76%), health and related (75%) and managers and executives (66%). If we compare the percentages of immigrants with third level education in each occupation to the percentage of the domestic-born population we can see from Chart 16 overleaf that the immigrant percentages are higher across all occupations, apart from teachers and religious. The percentage of immigrants with third level education, at 46% was 18 percentage points higher than the percentage among those born in Ireland.

Participation in Education

Among 15-19 year olds participation in education was 78% in both the born in Ireland and the immigrant populations in 1996. By 2002 it had risen to 81% in both populations. (The detail may be seen in Appendix 2, Table 4). The significant increases in participation were in the populations aged 18 and 19, especially among the group born in Ireland.

Table 8		Immigrants in Employment by Occupation and Highest Level of Education Attained - 2002		
%	Primary/ Lower Secondary	Upper Secondary	3rd level	
Farming etc	32	32	27	
Electrical trades	13	44	34	
Engineering trades	28	46	20	
Textile, clothing	47	33	14	
Food, drink and tobacco	39	36	12	
Chemical, plastics	34	40	20	
Other manufacturing	34	36	21	
Building and construction	40	32	22	
Managers and executives	9	20	66	
Communication, transport	38	33	23	
Clerical and office	15	36	42	
Sales occupations	25	34	33	
Business and commerce	2	12	80	
Computer software	2	13	76	
Scientific and technical	1	10	82	
Health and related	5	9	75	
Social workers	1	13	81	
Religious	4	7	83	
Other professional	6	19	69	
Personal service and childcare	26	32	31	
Teachers	1	3	90	
Central and local government	11	33	50	
Garda Síochána	3	48	46	
Army	43	30	22	
Other gainful occupations	28	24	24	
All occupations	19	26	46	
Looking for first regular job	23	22	30	
Total	19	26	46	

Notes: Components do not add to 100 because those who have not completed their education or who have not stated their education level are omitted

The total percentage with third level differs from Chart 14 because the base is those in employment and not the whole population.

Source: Central Statistics Office, NCB

In the 20-24 age group, participation in education was lower in the Irish born population than in the immigrant population in both 1996 and 2002 (Chart 17). Though participation among the Irish-born population increased dramatically from 20% in 1996 to 33% in 2002, it was still below that of the immigrant population, which had risen from 32% to 37% in the same period. The higher participation in education by immigrants in these ages may be biased by the numbers coming to Ireland solely to study.

Household Size

In 2002, there were 1.288 million private households in Ireland and in 99,000 of these the reference person was an immigrant. Since migration is now on a large scale, it has important implications for the pace of house building. Obviously, household size is a key input in this consideration.

Chart 18 shows household size in the state and various regions, comparing households where the reference person was born in Ireland with those in which the reference person was an immigrant. The average household size in the state for households where the reference person was born in Ireland

Chart 16 Percentage in Of Immigrants in Each Occupation with 3rd Level Less Percentage of Born in Ireland with 3rd Level - 2002

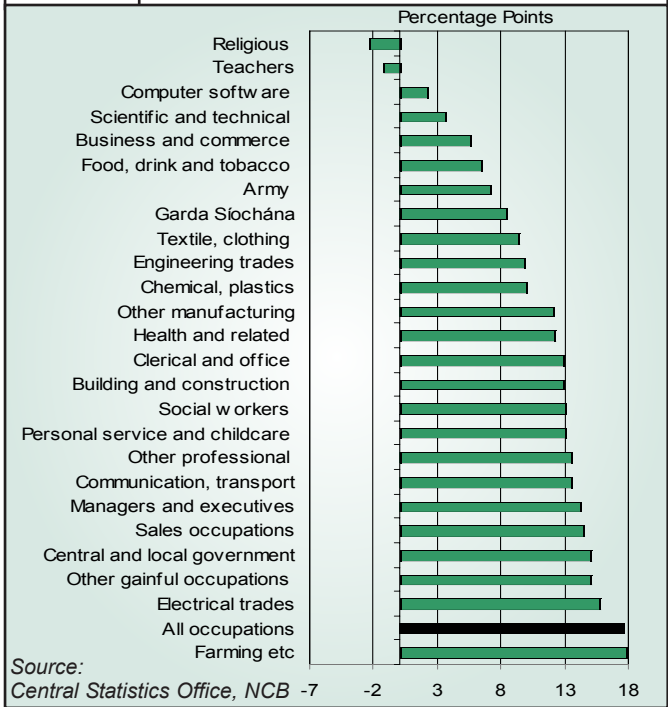
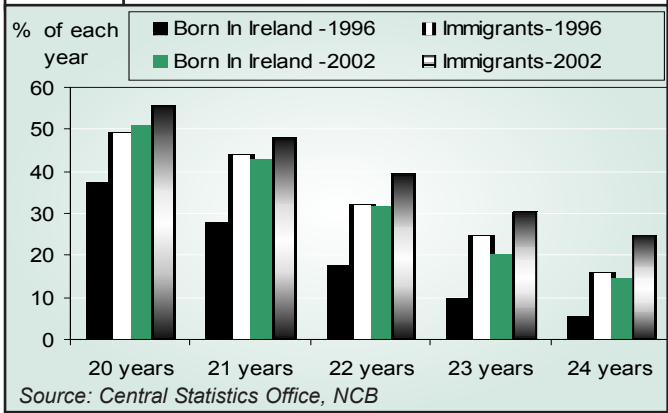


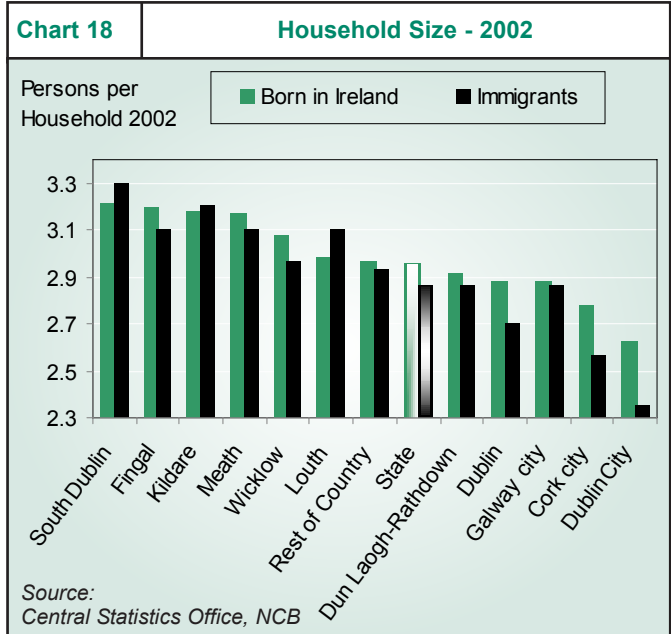
Chart 17 Participation in Education by 20-24 age Group 2002



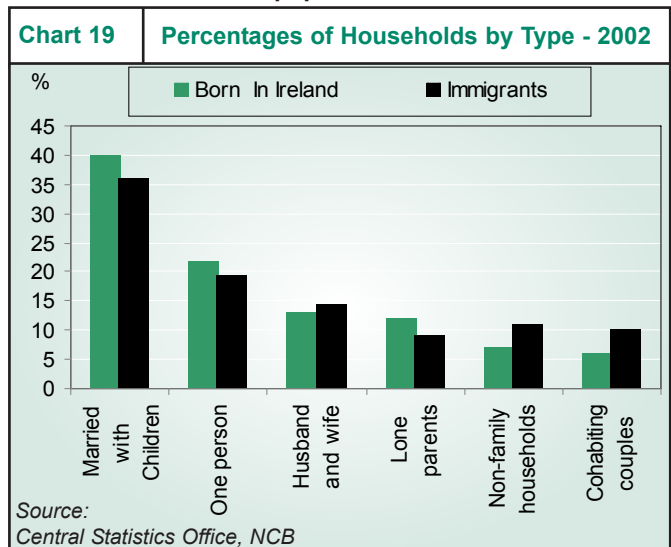
was 2.95 persons compared to an average of 2.87 persons in households where the reference person was an immigrant. Household size in the state as a whole averaged 2.94 persons in 2002.

Household size was largest in most areas of Co. Dublin and its surrounding counties and smallest in Dublin city and in the cities of Cork and Galway. The range for household size in households where the reference person was born in Ireland was 2.62 to 3.21 and 2.35 to 3.35 in households where the reference person was an immigrant.

We can see from Chart 19 that the composition of households among immigrants is not dramatically different from that in the Irish born population across the various types of household. There is a slightly smaller percentage of immigrant households that are described as "married with children" and a larger percentage of non-family households. Apart from that, the other types of household make up similar percentages in both segments of the population. More detailed data, not shown, indicates that in the "married with children" immigrant households, household size is slightly smaller and in non-family households it is larger than in born in Ireland households. Overall, the main conclusion is that there is little to distinguish the immigrant



Household size among immigrants is not significantly different on average from that in the Irish-born population



households from households in the domestic-born population in terms of household size.

Households by Type of Accommodation and Nature of Occupancy

Table 9 shows, as might be expected, that even though the immigrant population is only 7% of the total it accounts for 19% of the population living in flats (both owned and rented). Household size in flats is relatively small at just over 2 for the immigrant population and 1.9 among the domestic born population. Thus, immigration has significant direct effects on the demand for housing in general because household size is, on average, about the same as in the domestic-born population.

Chart 20 shows households by nature of occupancy. While there is not a huge difference between the percentage of households in each segment of the population with mortgages, the percentage with no mortgage was much higher in households in which the reference person was born in Ireland and the percentage in rented accommodation was much higher among immigrants, at over 40%. In total, 40,000 immigrant households were in rented accommodation, of which 35,000

Table 9		Population by Type of Accommodation and Household Size- 2002		
% of total population	Born in Ireland	Immigrants	Total	
Detached House	93	7	100	
Semi Detached	92	8	100	
Terrrace house	94	6	100	
Flat	81	19	100	
Total	93	7	100	
Household Size				
Detached House	3.2	3.1		
Semi Detached	3.0	3.1		
Terrrace house	2.8	2.9		
Flat	1.9	2.0		
Total	3.0	2.9		

Source: Central Statistics Office, NCB

Immigrants accounted for 19% of all households living in flats and 40% immigrant households were in rented accommodation

were rented in the private sector. (The detailed data may be seen in Appendix 2, Table 6.)

Projected Immigrant Population

Table 10 shows the breakdown of the population between those born in Ireland and immigrants. Apart from 2002, the numbers are estimates. In 2005, it is estimated that 10% of the population was not born in Ireland. Immigrants numbered an estimated 395,000. If immigration were to fall to zero from here, immigrants would fall to 8% of the population by 2020 allowing for mortality. On the basis of our central forecast that net immigration will be about 53,000 per annum until 2010 and then taper down to 25,000 per annum by 2020, the immigrant population would number 1.0 million in 2020, or 19% of the population.

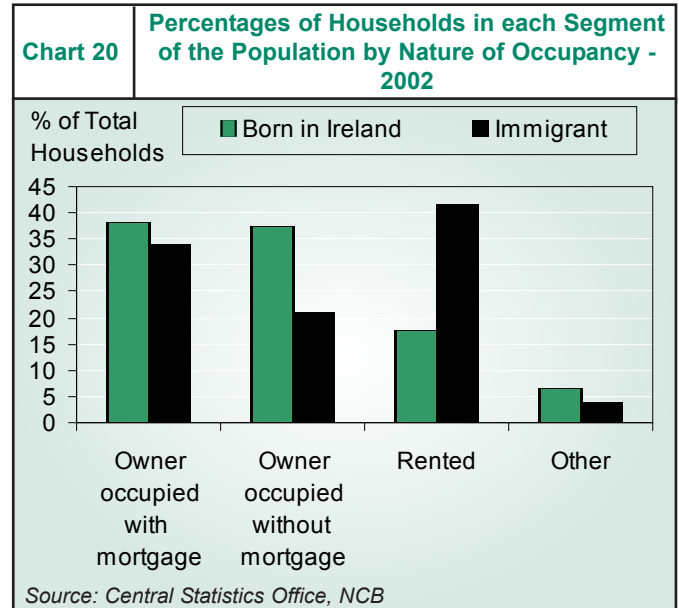


Table 10 Estimated Migrant Population in 2020

('000)	2002	2005	2020 Central Forecast	Zero Immigration
Population	3917	4131	5334	4419
Not born in Ireland	278	395	1000	363
Born in Ireland	3639	3735	4334	4056
Total (%)	7	10	19	8

Source: Central Statistics Office, NCB

Summary

- Immigrants will play an increasingly important role in the growth of the labour force and in the demand for housing in the years ahead. The rise in the immigrant population accounted for 30% of the total increase in the population between 1996 and 2002. We estimate it may account for as much as 50% of the growth in the total population between now and 2020.
- Immigrants accounted for 7% of the population in 2002 and we estimate they could form 19% of the population, or about 1 million people, in 2020.
- We estimate immigrants were 12% of the labour force in 2005.
- Their representation among the occupations was high in computer software (18%), other professional workers (16%), social workers (15%), health (13%) and scientific and technical (13%).
- The overall participation rate in labour force for immigrants was higher than in the domestic population but this reflects their concentration in the 20-49 age cohorts.
- In terms of skills, 65% of immigrants were in the upper end of the skill spectrum compared to 60% of the Irish born population. Within skill groups, immigrants were most strongly represented in the professional groups aged 25-44.
- The percentage of the immigrant population that had completed third level education was 38% in 2002, compared to 19% in the domestic population. This was not just because immigrants were concentrated in the younger age cohorts since the percentage with third level was higher among immigrants at all individual age cohorts.
- Average household size among the immigrant population was not significantly different from that in the domestic born population in 2002, at close to 2.9 persons per household.
- There was a slightly smaller proportion of immigrant households in the "married with children" group and slightly more in the "non-family" households but for other household types the proportions were roughly the same.
- In terms of the type of accommodation, immigrant households accounted for 19% of households in flats, both rented and owned.
- Over 40% of the 99,000 immigrant households in 2002 were in rented accommodation, compared to 18% of domestic households.
- The percentage of immigrant households with a mortgage in 2002 was 34% compared to 38% among households headed by an Irish born person.

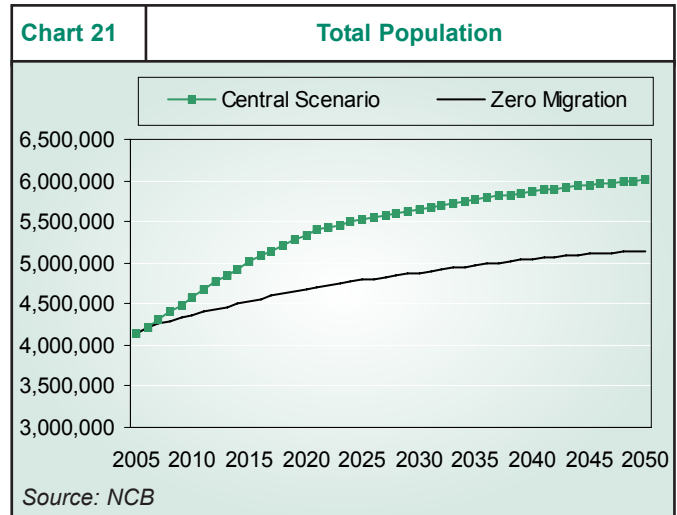
Chapter 3

The Population Projections

The population in 2005 is officially estimated at 4.13 million and it has been increasing at an average annual rate of 1.7% in the past five years. On the assumptions set out above, the population will rise at a slightly faster annual pace over the next ten years - 2.1% up to 2010 and an average 1.9% annually from then until 2015. Thereafter, the rate of growth will gradually and slowly subside, averaging 1.5% per year in the five years to 2020. It will fall to 0.5% per year by 2025 and to an annual rate of about 0.3% as 2040 approaches - part of the slowdown reflects our assumption of zero annual net migration after 2020. During the final ten years of the forecast period the rate of increase subsides to less than 0.2% per year.

On this basis, the population will reach 5 million in 2015 and exceed 5.3 million in 2020. It will top 6 million in 2050.

This forecast is quite heavily dependent on the assumptions made about migration, as may be seen from Chart 21. On a zero net migration basis, the total population would reach 4.7 million in 2020 and it would not exceed 5 million until 2037. At 2050, the forecasting horizon for our population forecasts, the population would just exceed 5.1 million.



The population will exceed 5.3 million in 2020 and 6 million in 2050

Prospective Shifts in the Age Structure of the Population

In general, as the population grows, so will it gradually age. Currently, the median age of the population (i.e. the age which divides the population in two equal parts) is 33 years. By 2020, the median will have increased to 38 years. Twenty years further on it will have risen to 44 and to 46 years at the mid-point of this century. However, Ireland's population is, and will

Table 11	Population by Age - Central Scenario									
	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
1-4 Years	297,365	338,373	357,571	351,697	331,083	313,837	310,677	316,232	321,178	318,531
5-9 Years	281,210	307,284	347,123	363,557	354,142	332,767	315,595	312,519	318,113	323,053
10-14 Years	274,715	291,029	315,673	353,391	366,523	356,338	334,982	317,778	314,664	320,239
15-19 Years	296,004	290,775	303,540	323,192	351,569	363,517	353,368	332,344	315,538	312,611
20-24 Years	341,343	322,846	312,263	314,495	317,949	341,305	352,552	342,916	323,055	307,183
25-29 Years	351,412	374,277	347,342	324,987	313,115	312,997	335,988	347,187	337,911	318,580
30-34 Years	330,226	390,679	404,044	363,524	328,544	314,846	315,401	338,619	349,502	339,880
35-39 Years	306,373	366,878	421,700	422,678	367,352	330,236	317,162	317,780	340,790	351,458
40-44 Years	290,670	339,870	395,400	440,603	426,583	368,822	332,308	319,245	319,537	342,424
45-49 Years	263,776	311,474	357,631	406,384	443,178	426,224	369,202	332,828	319,721	319,983
50-54 Years	242,498	266,763	313,367	357,486	403,686	439,800	423,243	366,932	331,080	318,367
55-59 Years	222,039	243,235	266,429	311,240	353,063	398,518	434,705	418,857	363,645	328,561
60-64 Years	172,385	219,791	240,113	261,946	304,696	345,811	391,168	427,612	412,883	359,215
65-69 Years	141,407	165,923	211,817	231,353	252,370	294,391	335,331	380,636	417,506	404,226
70-74 Years	116,934	129,799	153,684	197,462	216,968	238,456	280,054	320,798	366,021	403,334
75+ Years	202,365	226,976	260,734	310,624	391,262	476,386	565,619	673,162	795,751	938,195
Total	4,130,722	4,585,973	5,008,431	5,334,620	5,522,083	5,654,249	5,767,356	5,865,447	5,946,894	6,005,840

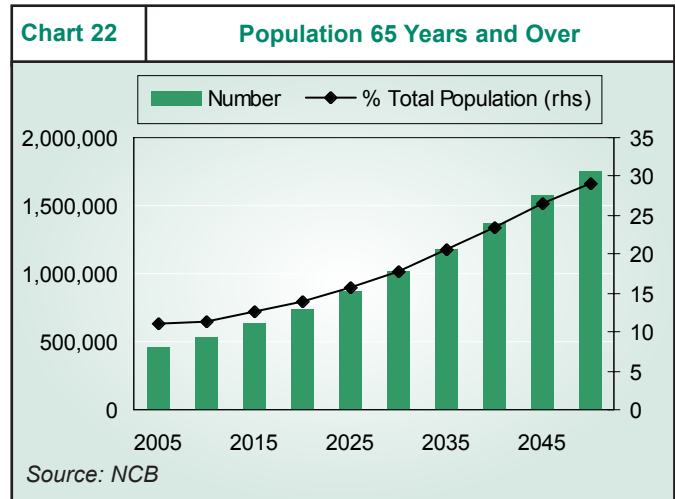
Source: NCB

remain, younger than the population in the European Union as a whole. In the EU, the current median age is around 39 years and it will have risen to 48 years by 2050.

Rising Number of Over-65s

One of the most noticeable, and notable, aspects of the gradual ageing of the population is the extent to which the proportion of persons aged 65 years and over in Ireland will rise. Currently, over-65s account for slightly more than 11% of the total population. That percentage will rise consistently in the next forty to fifty years. In our central scenario, it will reach 14% of the population by 2020. By 2050, it will have increased to 29% of the population. In a zero net migration situation, the pace of increase in the proportion of the population accounted for by over-65s would be very similar. In such circumstances, this age cohort would be nearly 15.5% of the population in 2020 and 29% in 2050.

The prospective growth in the population over 65 years of age both in absolute numbers and as a proportion of the total population will represent a radical change compared with the experience of the past. In the past forty-five years, i.e. between 1960 and 2005, numbers over 65 years of age have increased by less than 146,000 in total. As a proportion of the population, the relative size of the over-65s age cohort has not



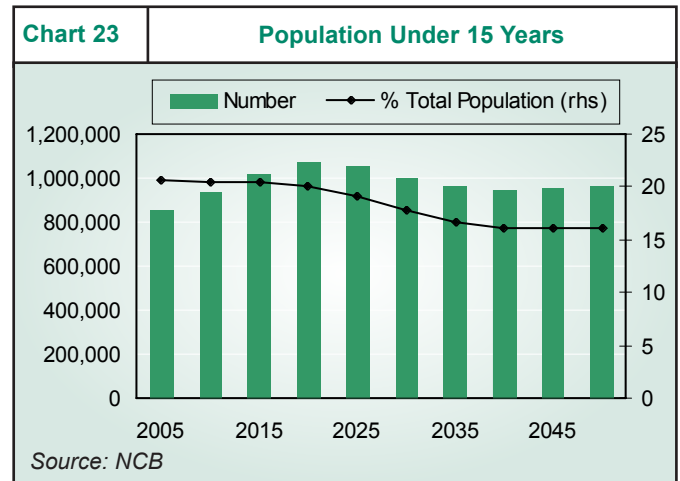
Population over 65 - currently 460,000 - will be 740,000 in 2020 and 1.7 million in 2050

changed much in the period. It went from 11.1% in 1960 to a low of 10.7% between 1979 and 1982 years and back up to 11.2% at present. In the next forty-five years, however, the rate of increase in the absolute size of this age cohort will be nine times faster, at almost 1.3 million, and its share of the population will rise by 18 percentage points.

Under-15s Largely Stable

At the other end of the age spectrum, the proportion of the population under 15 years of age hit its peak of over 31% in the early-1970s. It has been gradually diminishing since then and currently constitutes fractionally less than 21% of the total population. This proportion will change only marginally in the next fifteen years. It will still be 20% in 2020. After that, the rate of decline in the relative size of this segment of the population will be somewhat greater so that, by 2035, it will have fallen below 17%. In 2050, under-15s will be around 16% of the population on our central scenario. The picture would not be discernibly different under an assumption of zero migration growth.

In absolute terms, the number of under-15s hit a high of 1.045 million in 1982 but fell thereafter, to a low of just over 827,000 in 2002 as a reflection of the downtrend in births described earlier. Since then, the number of under-15s has been on the

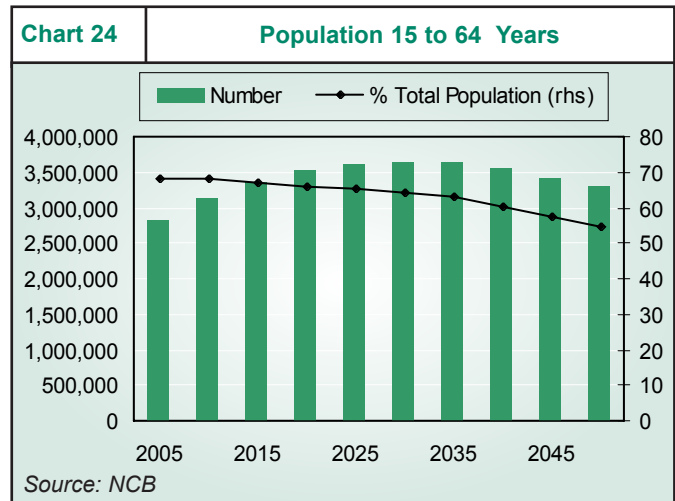


rise and was back up over 850,000 in 2005. This rising trend is set to continue for about the next fifteen to sixteen years, in part because women born during the baby boom of the 1970s and early-1980s will be having their families in that period. On our central scenario, the number of under-15s will peak again at just over 1.07 million in 2021. After that, it will undulate in lagged response to the trend in births described earlier, rising late in the forecast period after the baby echo of the late 2020s and 2030s.

Population of Working Age

The proportion of the population in the working age groups, i.e. between 15 and 64 years of age, has increased by 10 percentage points in the past forty-five years, from 58% to 68%. This reflects an absolute rise of almost 1.18 million in this part of the population, from 1.64 million in 1960 to nearly 2.82 million in 2005. Most of the increase in relative size occurred after 1990, a year when 61.4% of the population was in the working age groups.

In the coming fifteen years to 2020, the population between 15 and 64 years of age will increase by almost 710,000 on our central scenario. This represents growth at an annual average of 1.5% in the period. The rate of increase will, however, be at its most rapid - just over 2% - in the next five years. Between

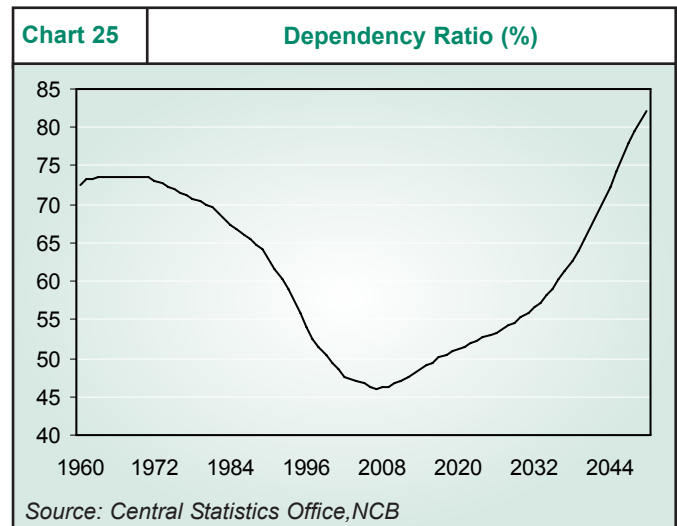


Population of working age will grow by more than 700,000 - 25% - to over 3.5 million by 2020

2010 and 2015, the annual pace will moderate to 1.5% and it will slow to 1% per year between 2015 and 2020. As will be seen later, growth prospects for these age groups will have direct implications for the rate at which the labour force will grow and, therefore, for the pace at which the economy can be expected to expand. The 15 to 64 year population will continue to increase until about 2030 though the rate of growth after 2020 will be fractional. From 2032 on, however, the active population will decline on our central scenario, ending in 2050 nearly 350,000 below its peak in 2031 of 3.64 million.

Dependency

The balance in the population between the active and dependent age groups has undergone substantial change in the past forty years. At its peak, the ratio of dependents (i.e. those under 15 and over 65 years) to the rest of the population reached nearly 74% in 1966. It has been falling steadily since then with the pace of decline quickening during the 1990s. By 2005, the dependency ratio had fallen to 46.6%. In other words, in 1966 there were 1.4 people in the active age groups (15 to 64 years) to every dependent but in 2005 that proportion had risen to over 2.1 for every dependent. This development was an important element of the economic stimulus provided by demographic change in the past ten years. Lower dependency was accompanied by an increase in GDP per head and the capacity for discretionary expenditure in the economy increased as the burden of the dependent population lightened.



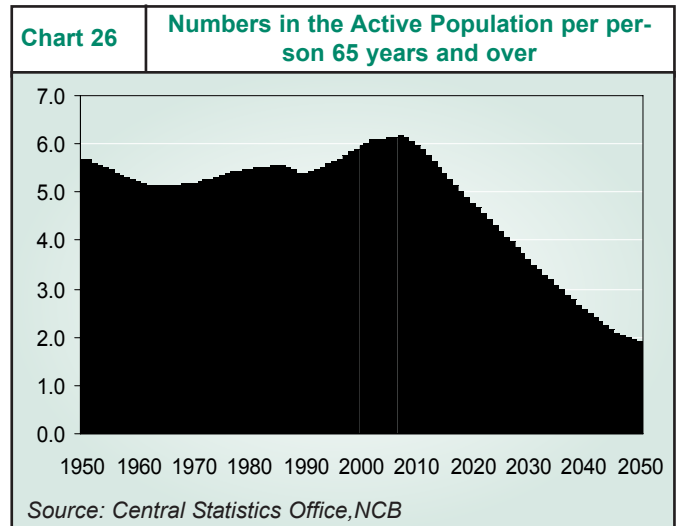
Falling dependency boosted GDP per head

On the basis of the central population forecast described above, the dependency ratio will not change much in the period to the end of the current decade. Thereafter, however, it will begin to rise. By 2020, it will be back over 51% - where it was in 1998 - and twenty years later it will be around 65%. By 2050, the ratio will be 82% on our assumptions, appreciably higher than the mid-1960s peak and indicating that there will only be a little more than 1.2 persons in the active population for every one in the dependent population. The main difference in this scenario compared with the experience in the 1960s is that the age composition of the dependent population will be substantially altered. In 2050, nearly two-thirds of the dependent population will be over 65 years whereas in 1966 the dependent population was predominantly under 15 years, with little more than a quarter of dependents over 65 years old.

Old Age Dependency Will Rise Markedly

This distinction will be important because of its possible implications for public spending and the tax burden it will potentially place on the working age population. During the 1950s, 1960s, 1970s and 1980s there were never fewer than 5 persons in the active age groups per person aged over 65 in the population. That number rose gradually to 6 by 2000 and it should stay around that level for the next six or seven years. Thereafter, however, it will begin to decline steadily. By 2020,

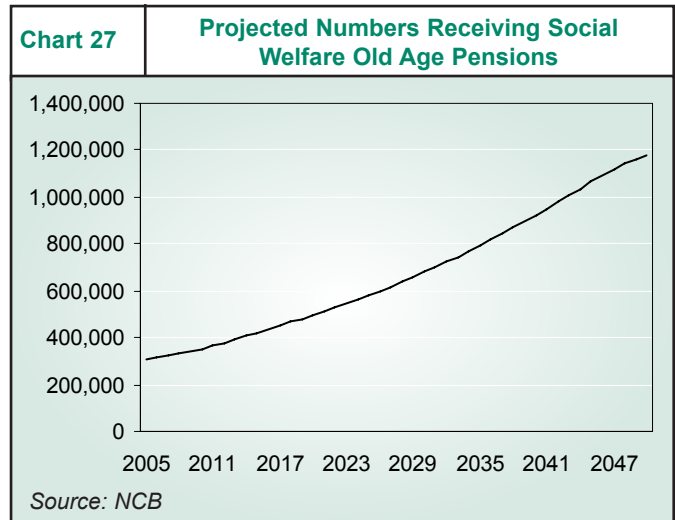
Dependency will rise gradually to 2020 but more rapidly later



By 2050 there will be only 1.2 persons in the active population per dependent compared to 2.1 currently

the number of persons in the working age population per person over 65 years will have fallen below 5 and it will not be much more than 3.5 in 2030. In 2050, at the extreme horizon of this forecasting exercise, there will be less than 2 persons of working age per person over 65.

As an example of the potential scale of the impact on government spending, a little over 303,000 people were in receipt of a social welfare old age pension in 2004 (the latest year for which data are available). This equates to 67.4% of the population aged 65 years and over. If that percentage of the over-65 population continues to receive a publicly funded old age pension, the number of recipients would just about double by 2026. By 2040, there would be over 925,000 recipients and in 2050 the numbers would be almost 1.2 million - nearly four times the 2004 level. In 2005, the cost of the various old age pensions totalled an estimated \square 2.9 billion or 2.2% of GNP. All other things being equal, the cost of providing these pensions could total nearly 9% of GNP in 2050 and it is difficult to see how this cost could be met without a significant rise in the general burden of taxation.



Main Forecasts

- On our projections, the population will reach 5 million in 2015 and exceed 5.3 million in 2020. It will top 6 million in 2050.
- The outlook for the population in the active age groups - 15 to 64 years - is of central importance to the economic outlook. In the next fifteen years, that population will increase by almost 710,000. This represents growth at an annual average of 1.5%. The rate of increase will, however, be at its most rapid - just over 2% - in the next five years. Between 2010 and 2015, the annual pace will moderate to 1.5% and it will slow to 1% per year between 2015 and 2020.
- As the population grows, so will it gradually age. Currently, over-65s account for slightly more than 11% of the total population. That percentage will rise consistently in the next forty-five years. In our central scenario, it will reach 14% of the population by 2020 and, by 2050, it will have increased to 29%.
- The absolute number of over-65s will rise from a current 460,000 to 1.7 million in 2050.
- Dependency has fallen significantly in the past forty years and the pace of decline quickened during the 1990s. The ratio of the dependent population (under-15s and over-65s) to the active age groups stood at 46.6% in 2005.
- The dependency ratio will not change much in the period to the end of the current decade. Thereafter, it will begin to rise though, by 2020, it will still be relatively low, at just over 51%.
- The longer-term outlook is less benign. By 2050, the dependency ratio will be 82%.

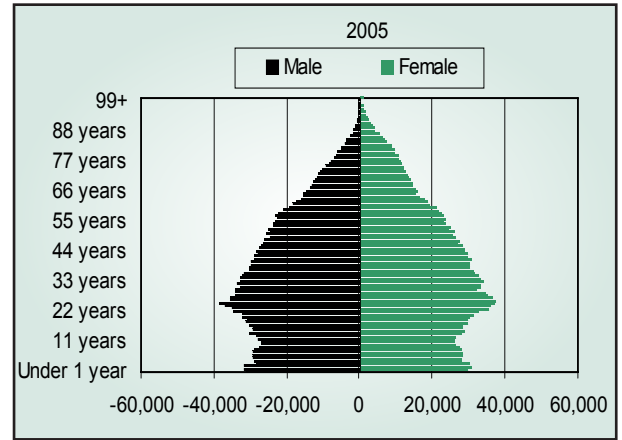
Chapter 4

The Baby Boom Generation

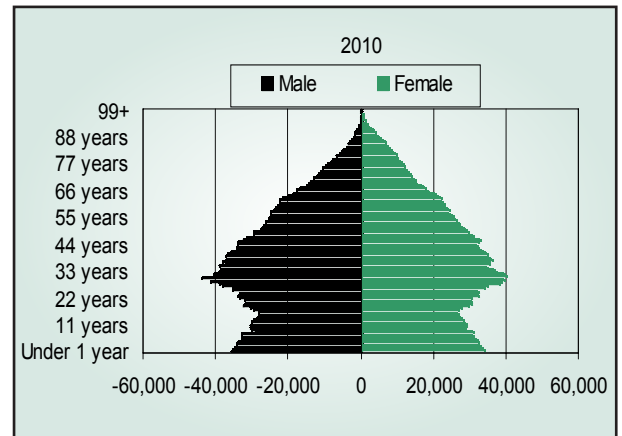
The generation born during the baby boom of the 1970s and early-1980s is a uniquely important one because of its size. Between 1971 and 1983, over 900,000 people were born, with the annual number of births averaging almost 70,000. This was the period with the highest, sustained annual numbers of births recorded since the foundation of the state and the peak of over 74,000 births in 1980 was the highest number for any year since 1922. By contrast, between 1922 and 1970, annual births averaged just over 61,000. Since 1983, the average has been a little over 55,000 though the trend has been rising since 1994 with the total exceeding 61,000 in 2004, the most recent year for which full data are available.

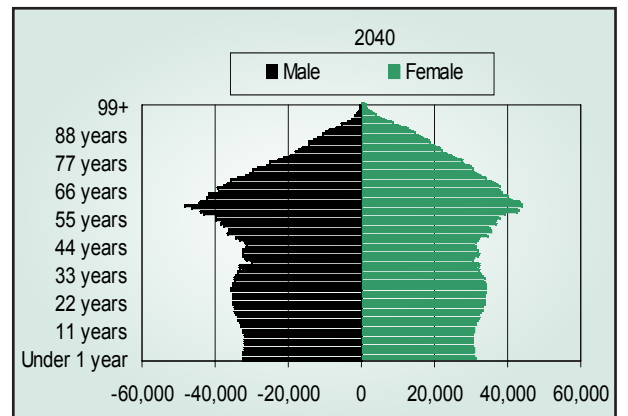
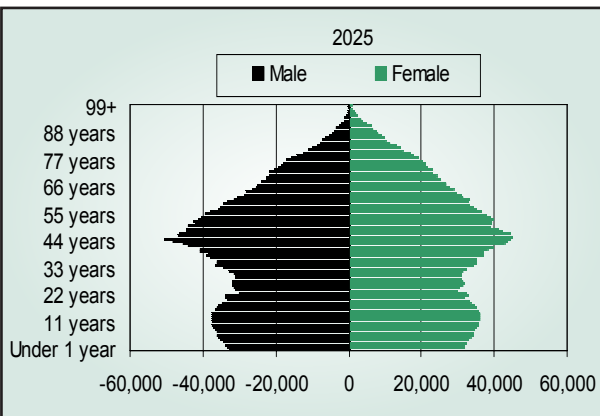
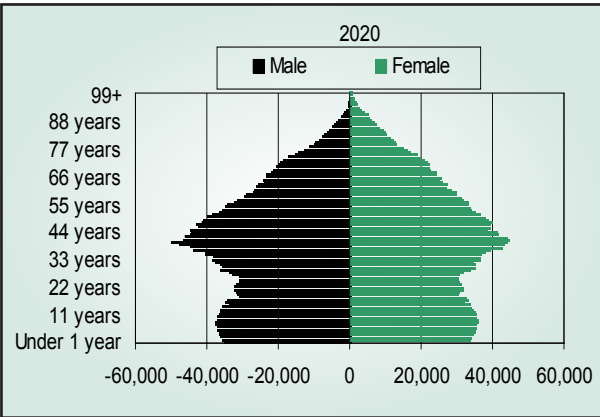
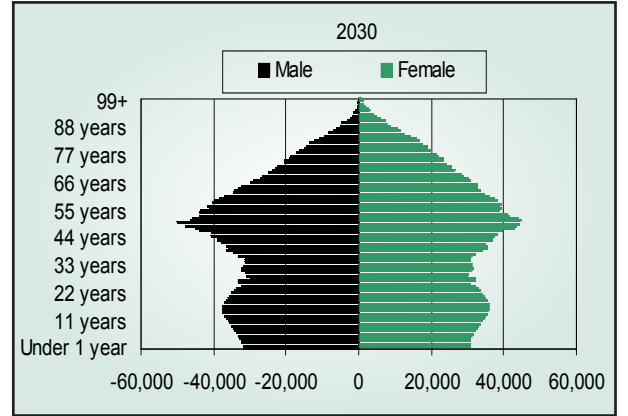
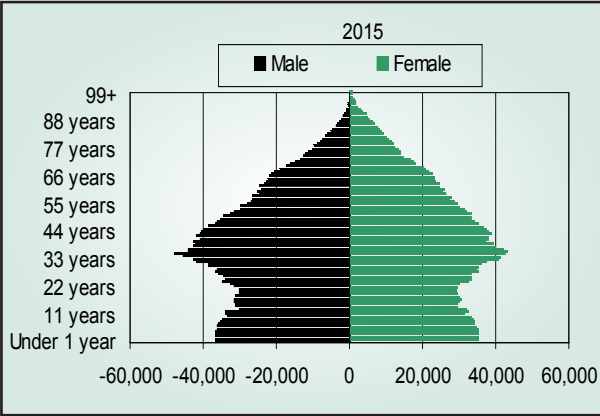
The population in the baby boom generation age group (22 to 34 years) totalled over 895,000 in 2005 and the sequence of charts on this page and the next two for the forty-five years to 2050 shows that this generation constitutes a bulge in the population that will move through the age groups, as it gradually grows older. The charts show the distribution of the population by gender and age. Because this generation outweighs any other individual segment of the population, it will have a significant influence on developments in the future as its needs, preferences and priorities change with the life cycle.

This has, indeed, already been happening. The elevated pace of growth in the labour supply since the mid-1990s was partly



The generation born in 1971-1983 is uniquely important



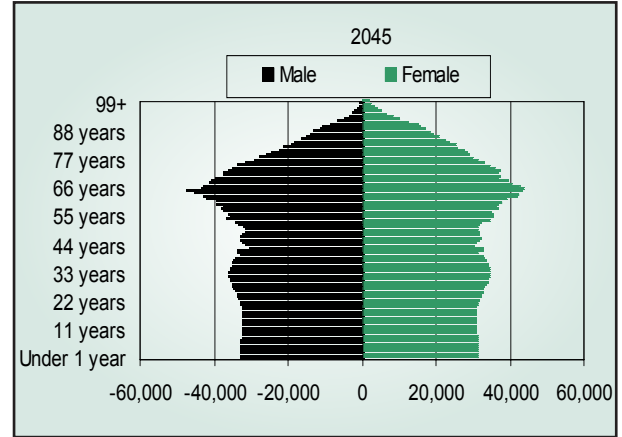


the reflection of the baby boomers coming through the educational system and into the workforce. Also in this period, as that generation began to move out of home and form households of its own, the demand for housing began to rise sharply. Because it had not been anticipated by government or the construction industry, this increase in demand was a primary cause of the upsurge in house price inflation of the time.

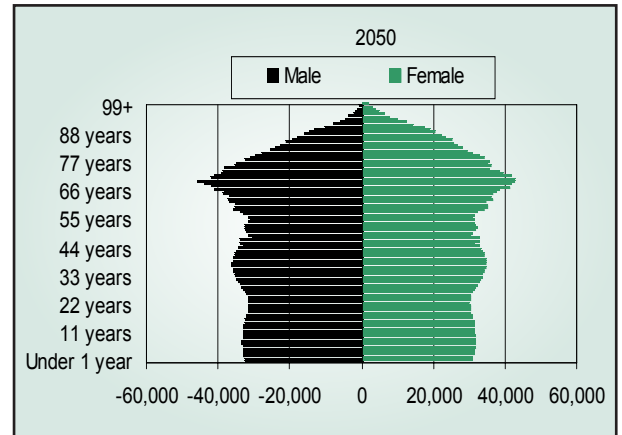
More recently, as the baby boom generation has begun to have its own babies, the national birth rate has started to climb again and childcare issues have been receiving more attention than in the past. In the future, it seems likely that the concerns of the baby boomers will continue to dominate the public discourse.

From the business point of view, this will also be the case. No provider of goods and services for the domestic market can afford to ignore so large a customer base. Thus, as the baby boom generation ages, retail and other service industries will need to adapt their products to the needs of the baby boomers - whether, for example, this is in the matter of clothing styles and sizes, preferences for leisure activities or the kind of financial services the boomers require.

As will be seen later, households whose heads are in age groups between 35 to 54 years are particularly important in that they typically account for around 50% of all household incomes and spending. The baby boomers are starting to



Business cannot afford to ignore the needs and preferences of the baby boomers



move into those age groups now but it will not be until 2018 that all of that generation has reached at least 35 years of age. By 2026, those born between 1971 and 1983 will start to exit the key earning and spending age cohorts though the exit will not be complete until 2038. Between 2015 and 2028, the baby boom generation will account for more than 50% of the prime earning and spending cohort - indeed, constituting almost 70% around 2020.

Labour force participation rates typically begin to decline after 54 years of age but they fall especially sharply from age 60 on as people begin to retire. The baby boomers will begin to cross that threshold in 2031 though the last of them will not turn 60 until 2043. Currently the baby boom generation constitutes 36% of the labour force and will continue to do so - or close to it - until 2020. After that, the importance of this generation in the labour supply will begin to diminish. Indeed, the numbers in the labour force from the 1971-1983 baby boom will start to fall from around 2022 and this will act as a dampening influence on labour force growth from then on.

As the baby boom generation ages it will swell the ranks of retirees in the economy. The leading edge of the cohort will reach 65 years of age in 2036, at which point there will be over 1.2 million over-65s. This compares with a total of just under 461,000 over-65s in 2005. In 2048, all of the baby boomers will have reached 65 years and the total number of over-65s will have risen almost to 1.7 million, of which the baby boomers will constitute 60%.

***Baby boomers will begin to swell the ranks
of retirees in the 2030s***

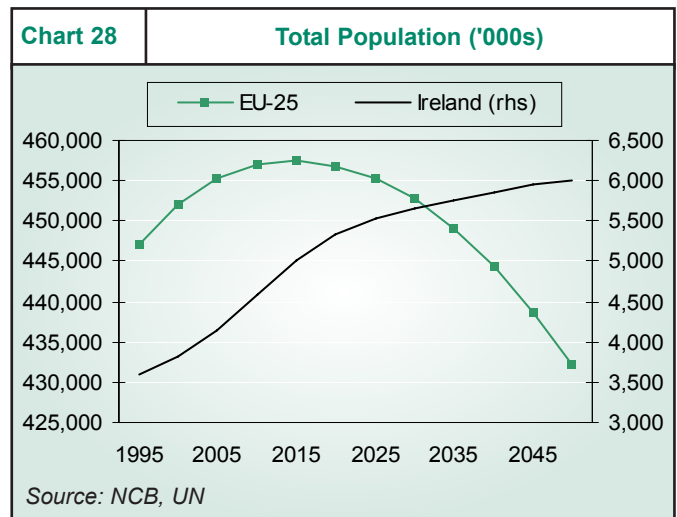
Chapter 5

Irish Demographics in the EU Context

The current and prospective growth rates in the Irish population substantially outstrip those elsewhere in the European Union. In recent years, the EU population has been growing at around 0.25% per year. According to the most recent UN population forecasts, that growth rate will slow to zero within the next ten years and the EU population could begin to decline after 2015. Nor did the accession of ten new member states in 2004 improve the Union's demographic prospects. In fact, it worsened them. The population of the ten accession states, as a group, has been falling since the mid-1990s and is predicted to continue falling for the next forty-five years. Population in the old EU-15 countries will continue to grow for the next fifteen years but at a diminishing, miniscule pace, according to UN forecasts.

There are a number of reasons for the contrasting prospects for Irish demographics and those elsewhere in the EU. Firstly, as outlined earlier, even though the total fertility rate in Ireland has declined sharply from its peak in the mid-1960s and has fallen below the replacement rate, it is still appreciably higher than rates in other EU countries. As a result, Ireland has a higher birth rate per thousand of the population. Secondly, even though life expectancy rates across the EU are quite similar, the death rate per thousand of the Irish population is appreciably lower than the EU average because the Irish population is younger. The age groups with the highest death

The Irish population is set for sustained growth to 2050....



...but the population elsewhere in the EU will begin to fall within the next fifteen years

rates account for a smaller proportion of the Irish population than they do in the population of the EU as a whole. The median age of the Irish population is currently 33 years. This is 6 years younger than for the rest of the EU. Currently nearly 21% of the Irish population is below 15 years of age, compared with about 16.5% elsewhere in the EU. In contrast, just over 11% of the Irish population is aged over 65 years, while in the rest of the EU the over-65s constitute over 17% of the population.

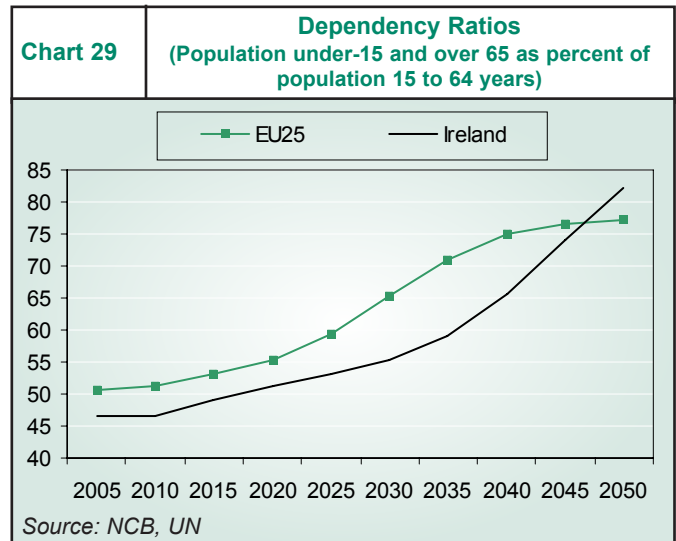
The combination of higher birth and lower death rates means that, even before migration is considered, the natural percentage growth rate in the Irish population is greater than that elsewhere in the EU.

Lower Dependency in Ireland

Partly because of the fact that the population elsewhere in the EU is already more advanced in age than that in Ireland, the level of dependency is higher and the prospects are that it will rise quite sharply in the years ahead. High dependency rates impact adversely on growth in per capita GDP because relatively fewer people are generating growth in the economy.

Currently a little below 51%, the ratio of the dependent population to the active population in the EU will rise to over

Median age 33 years in Ireland vs. 39 years in rest of EU



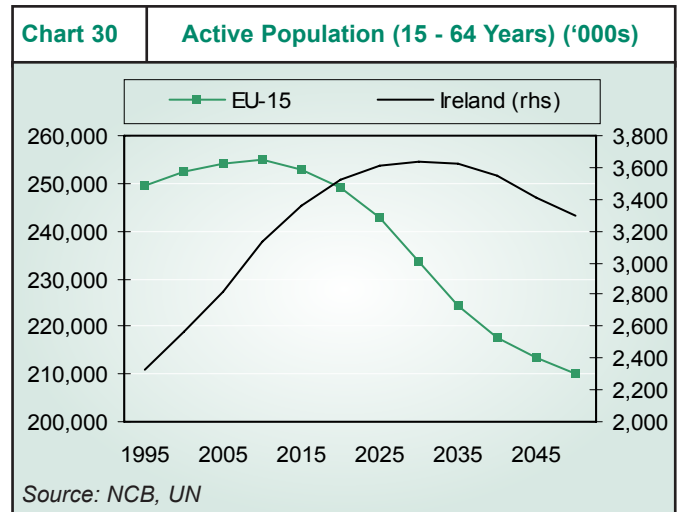
Dependency rates are lower in Ireland

59% in twenty years time and will exceed 77% in 2050. By contrast, the Irish ratio is currently about 4% below the EU average, at 46.6%. By 2025, the Irish ratio will have risen to 53% but it will be more than 6% lower than the ratio in the EU as a whole and that gap will widen to 12% by 2035, at which point the EU ratio will be just over 71% while Ireland's will be 59%. Ultimately, however, the gap will begin to close and, indeed, in 2050, the Irish ratio will have risen above the EU average, to 82%. In the meantime, however, the lower burden of dependency in Ireland should be reflected in greater economic dynamism.

Demographics Limit Potential Growth in the EU Economy

Since the labour force is drawn from the active age groups, between 15 and 64 years, the potential for labour force growth is substantially determined by the prospective growth in the active population. This is not high in the EU as a whole. In recent years it has averaged a little less than 0.5% annually and this growth rate is set to diminish between now and 2010 to an average of less than 0.2% per year, according to UN forecasts. After that, the active population in the EU will begin to fall, initially at a pace of about 0.3% annually. Between 2020 and 2030, UN forecasts show that the rate of decline should quicken to over 0.6% per year and become more pronounced in later years.

The economically active age groups elsewhere in the EU are growing slowly and will soon decline



All told, the population of working age in the EU that currently totals around 307 million may have fallen by a projected 9 million by 2020. By 2035, it could be nearly 40 million lower than it currently is and over 60 million, or 17%, lower in 2050. By contrast, on our central scenario the active age groups in Ireland will rise throughout the period to 2030. By 2020, the population between 15 and 64 will total 3.5 million. This represents an increase of 710,000, or 25%, on the 2005 total. In 2030, it will exceed 3.6 million but it will fall thereafter, to total around 3.3 million by 2050 on our assumptions.

The potential implications of the EU demographic outlook for the economy of the area are serious. If the rate of participation in the labour force among the active age groups does not increase from here, the pattern of very slow growth in the active population in the next five years and decline after 2010 will be mirrored directly in the European Union's labour supply. All other things being equal, this will also mean that the potential rate of growth in real GDP in the EU will decelerate.

Currently, the potential growth rate of the EU economy is conventionally put at around 2.5%. If anything, we believe this is an overestimate since the pace of labour force growth in the past five years has averaged about 1% and the average annual growth in GDP per person employed has only come to 0.8%. Put together, these numbers mean that a figure of less than 2% is a more likely estimate for the underlying potential

Slow growth in the active population and low productivity limit potential economic growth in the EU

growth rate at the moment. Without a rise in labour productivity, the slow pace of growth in the active population - and, thus, the labour supply - in the period to 2010 will mean that the rate of sustainable growth in the EU could fall to less than 1.5%. Between 2010 and 2020, with the labour force in decline and falling at a gathering pace, the prospects for sustainable growth in activity will diminish still further - to less than 1% - unless significant improvements are made in EU productivity growth.

In these circumstances, the more vibrant Irish economy will stand in stark contrast to developments elsewhere in the EU for a prolonged period. As mentioned earlier, the continuing contrast between robust growth in the Irish economy and the more lacklustre development likely elsewhere in the EU will probably act as a persistent attraction to migrants from elsewhere in the Union, not to mention from further afield.

EU potential GDP growth could be less than 1.5% by 2010 and under 1% by 2020

Ireland's outperformance will continue

Main Findings

- The EU population has been growing at around 0.25% per year. According to UN forecasts, that growth rate will slow to zero within the next ten years and the EU population could begin to decline after 2015.
- The EU population of working age (15 to 64 years) has been growing at a little less than 0.5% annually and this growth rate is set to diminish between now and 2010 to an average of less than 0.2% per year. After that, the active population in the EU will begin to fall.
- The potential growth rate of the EU economy is probably below 2% at present with productivity growing at about 0.8% annually and the labour supply rising by around 1% per year.
- Without a rise in labour productivity, the slow pace of growth in the active population in the period to 2010 will mean that the rate of sustainable growth in the EU could fall to less than 1.5%.
- Between 2010 and 2020, with the labour force in decline, the prospects for sustainable growth in activity will diminish still further to less than 1%.
- In these circumstances, the more vibrant Irish economy will stand in stark contrast to developments elsewhere in the EU for a prolonged period.

Chapter 6

Economic Implications - The Supply Side

In this and the next chapter we explore the likely economic implications of the demographic outlook described in previous chapters. As mentioned in the introduction, while our population forecasts extend to 2050, we limit the time horizon of our assessment of the economic implications to 2020. A forecast for the population fifteen years hence has a good chance of being reasonably accurate since most of Ireland's population in 2020 is already in existence. While acknowledging that conditions outside the demographic arena are a lot less predictable, the choice of 2020 as the end point for our exploration of the economic implications provides a timescale sufficiently long to allow the likely shift in demographic influences to become apparent and not so long as to undermine the worth of the exercise.

Demographic change affects the pace of growth in the labour supply....

Implications for the Labour Force

A significant part of the economic implications of demographic change revolves around the prospects for growth in the labour force. Viewed from a supply-side perspective, the capacity of the economy to grow depends on the pace of growth in the supply of labour, on the one hand, and on the rate of growth in the productivity of the workforce, on the other. Prospects for growth in the supply of labour depend, in the first instance, on the outlook for growth in that part of the population from which the labour force is drawn, i.e. from the age cohorts between 15 and 64 years, the so-called active age groups.

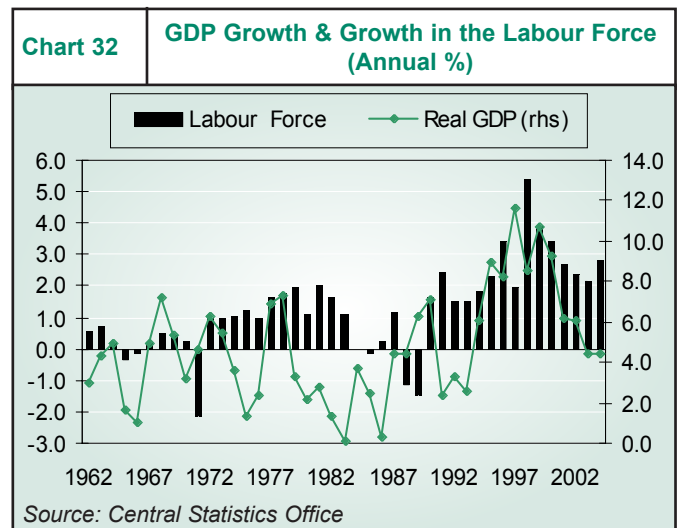
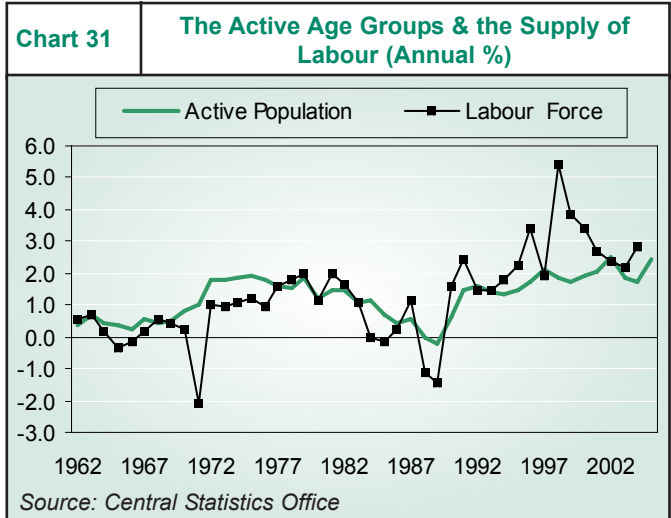
....a key supply-side determinant of economic growth

During the 1950s, the capacity of the Irish economy to grow was hampered by high net outward migration, which resulted in a consistent decline in the population of working age. The decline persisted until 1961 but thereafter in the 1960s the active population increased steadily, if modestly, and with it rose the labour force. This was one of the reasons for the average 4.1% annual real GDP growth rate achieved in that decade.

Net inward migration during the 1970s helped to boost the average annual growth rate of the active population to 1.6%. Annual labour force growth rose to 0.9% from 0.3% in the 1960s and real GDP growth averaged 4.4% per year, a small acceleration on the performance during the 1960s despite the adverse economic impact of the oil price crises of 1973 and 1979.

As net outward migration resumed in the 1980s, the annual pace of growth in the working age population fell back to 0.8%, half that of the previous decade, and growth in the supply of labour slowed to an average annual 0.5%. Not surprisingly, average growth in real GDP decelerated to 2.8% per year.

During the 1990s, helped by the change in migration from a net outward flow to a net inward one, annual growth in the active population reaccelerated to an average 1.5% per year and it was closer to 2% in the final years of the decade. Mainly



because of a rising rate of labour force participation among the female population, the annual rate of growth in the labour supply outpaced this and rose to over 2.5%. This was a key reason for the surge in real GDP growth to an average 7% per annum between 1991 and 1999. Between 2000 and 2005, growth in the active population averaged just over 2% and the labour force rose at an average annual 3% reflecting a continued rise in female participation. While average growth in real GDP slowed to 5%-5.5%, this was a very creditable performance given the slowdown in growth among Ireland's trading partners in those years.

On the basis of our assumptions, in the five years 2005 to 2010 annual growth in the active population will run at a little over 2%. Thereafter, it will tend to gradually slow - to 1.5% per year between 2010 and 2015 and to 1% for the following ten years. In the decade after 2020, the annual pace of increase in the active population will slow to less than 0.5% on our central scenario. Very shortly after 2030, it will begin to decline. Perhaps more than for the population as a whole, the prospects for growth in the active age groups is dependent on migration flows. On the basis of zero net migration, growth in the active population would slow very sharply in the near future. It would fall below 0.5% annually after 2008 and average 0.3% until 2025. It would have ceased growing by 2030 and would fall from 2032 on with the pace of decline gradually picking up to about 0.75% up to 2045 or thereabouts.

Population in the economically active age groups is set to grow by 2% p.a. to 2010, 1.5% p.a. to 2015 and 1% p.a. for 10 years more

Labour Force Participation

The precise outlook for the growth in the labour force does not solely depend on the growth in the population of active age. It also depends on the extent to which that population participates in the labour market. The pattern of labour force participation varies by gender and by age group. Generally, male labour force participation rates exceed those for females. For males, participation rates tend to be relatively high - varying between 75% and 93% - in the age cohorts from 20 to 59 years. In the past twenty years, participation rates for males between 25 and 54 years have been substantially stable. Labour force participation has, however, fallen quite sharply for 15 to 24 year olds; presumably reflecting increased participation in second and third level education. There has also been a sharp reduction in labour force participation for 55 to 65 year olds in that period, undoubtedly reflecting a greater prevalence of early retirement.

Partly as a result of these latter developments, there has been a small lowering of the overall male participation rate over the long term. In the early-1970s, an average of close on 80% of the male population over 15 years of age was in the labour force. That proportion has fallen to a little over 70% currently. Virtually all of that decline, however, happened by 1990 and, since then, male participation has been largely stable. In light of this, the assumption made in our forecasts is that male participation rates remain stable at their 2005 levels.

Male participation rates are high

Table12	Irish Labour Force Participation Rates in 2005	
	Male	Female
15-19	31.1	25.5
20-24	79.1	70.5
25-34	92.8	77.2
35-44	93.7	66.5
45-54	89.3	63.0
55-59	74.9	46.5
60-64	58.6	27.7
65+	14.1	3.3
Total	72.3	51.8

Source: Central Statistics Office

Significant Change in Female Participation

The development of female participation in the labour force has been quite different to that of males. Traditionally, participation has been low. Up until the late-1980s, it barely exceeded 30% of the female population over 15 years. Within that population, the only age cohort to participate in the labour force to an extent comparable to male counterparts was the 20 to 24 year age group. Age cohorts above that tended to have participation rates substantially lower than male rates reflecting the traditional predominance of home working among the adult female population.

Since the end of the 1980s, however, female participation has been rising steadily and quite rapidly. By 2005, the overall participation rate came to almost 52% of the over-15 female population. Thus, in the fifteen years from 1990 it had risen nearly 20 percentage points. By contrast, in the fifteen years up to 1990 the female participation rate had risen only 3 percentage points.

The rising trend of female participation began early in the 1970s among women in the 25 to 34 year age group. By 1990, more than 54% of that cohort was in the labour force, about 26% more than in the early-1970s. Because of the general stability in participation among other age cohorts, the rise in participation among 25 to 34 year olds had only a small impact

Irish female labour force participation has been changing radically since the late-1980s....

....it has risen by 20% of the female population over 15 years of age since 1990

on the overall rate. However, from the late-1980s, participation among the age groups from 35 to 59 began also to rise sharply. To some extent this must reflect the ageing of that generation of women who increased their labour force participation in the 1970s.

It also seems, however, to have reflected a greater tendency for women to re-enter the labour force having raised their children. Certainly, between the censuses of 1986 and 2002, the proportion of married women participating in the labour force rose from under 20% to 41.5%. By contrast, the participation rate for single women remained largely unchanged at a little over 55%. Moreover, between 1986 and 2002, the increase in married women in the labour force was dominated by rising numbers in the 35 to 54 year age group. That age group would have included the mothers of the Irish baby boom generation born during the 1970s and early-1980s.

Table 13	Female Labour Force Participation Rates 2005
Sweden	59.8
Denmark	59.7
Finland	58.2
Netherlands	57.6
Portugal	55.4
United Kingdom	55.1
Ireland	51.8
Austria	51.7
Germany	50.8
France	50.2
Spain	45.9
Belgium	45.6
Luxembourg	44.6
Greece	42.3
Italy	37.9
EU-15	49.2

Source: Central Statistics Office, Eurostat

Increasing Female Participation to Continue

Currently, the overall rate of female labour force participation in Ireland exceeds the EU-15 average but it ranks about mid-way in the spectrum of rates among individual EU-15 member states. Moreover, by comparison with the EU-15 average, Ireland's female participation rate is higher primarily because rates in the 20 to 24 and 60 to 64 age groups are higher. In

Irish female participation has further to rise

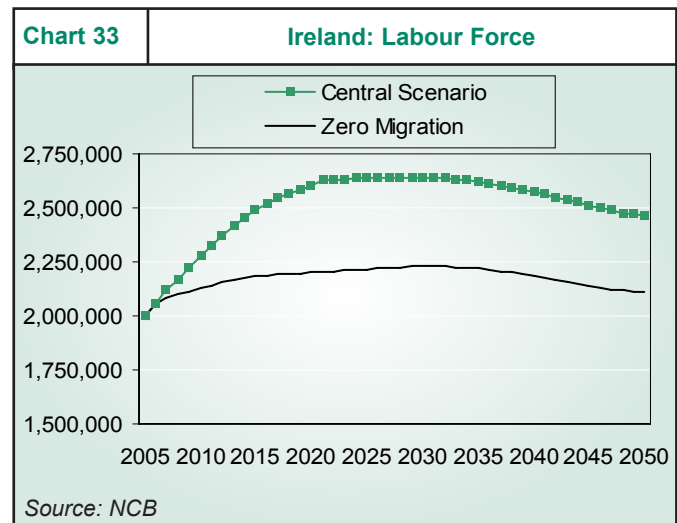
the age groups between 35 and 59 years, Irish rates are noticeably lower than the EU-15 average. These are the age cohorts, however, where labour force participation has been growing most sharply in recent years and it seems likely that this trend has some way to go before an equilibrium is established. For this reason, in forecasting the female labour force we have assumed that participation rates for women between 35 and 59 years will continue to rise gradually in the period to 2015 until they reach the average participation rates currently experienced elsewhere in the EU-15. Thereafter, those rates are assumed to remain stable. For females 15 to 34 years and over 59 years, participation rates are assumed to remain unchanged throughout the forecast period at their 2005 levels.

Table 14		
Female Labour Force Participation Rates 2005		
	Ireland	EU-15 less Ireland
15-19	25.5	25.0
20-24	70.5	61.1
25-34	77.2	75.9
35-44	66.5	77.2
45-54	63.0	72.8
55-59	46.5	51.9
60-64	27.7	21.0
65+	3.3	2.2
Total	51.8	49.2

Source: Central Statistics Office, Eurostat

Strong Growth in Labour Supply in Prospect

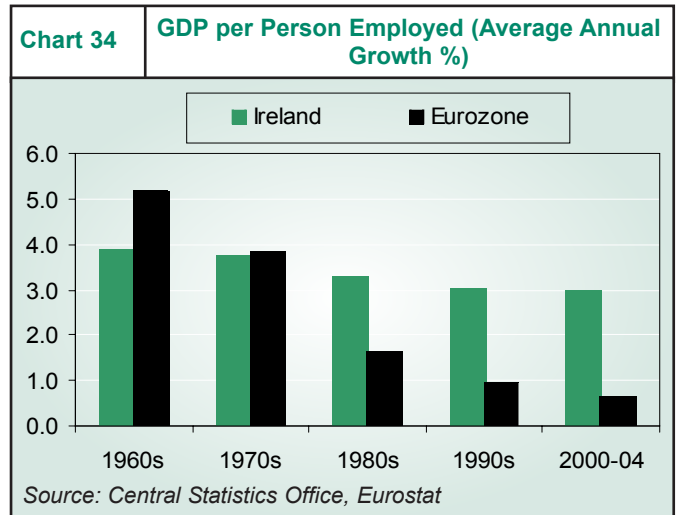
In the past five years, annual labour force growth has averaged 2.7%. In the coming decade, the pace of growth in the labour force should remain vibrant. On our central scenario, it will grow at an annual average 2.2% over the whole period 2005 to 2015 but growth should be faster in the first half of the decade than in the latter part. Between 2005 and 2010, we project growth in the labour supply of 2.5% annually and this pace is forecast to slow to just under 2% in the period 2010 to 2015. From 2015 on, the rate of increase



in the labour force will slow quite sharply. We project growth of 0.9% per year on average between 2015 and 2020. Were we to extend our forecasts beyond 2020 on the same assumptions, they would show a continuous deceleration in the annual rate of growth in the labour force to the point, from 2030, that it would stop growing and begin to decline.

Were migration flows to dry up in the near term the prospects for growth in the labour would be substantially more muted than these. However, because of the likelihood of increased rates of female participation, growth in the labour force in the coming five to ten years would still be quite buoyant by international standards even on the basis of zero net migration. It would average about 1.25% in the five years to 2010 and 0.5% in the following five years. From 2015 to 2030, however, labour supply growth would be only marginal, at less than 0.2% annually, and beyond 2030 it would begin to decline. In our view, however, a zero migration scenario - certainly for the next ten to twenty years - seems a less likely prospect than that net inward migration should continue.

Labour supply will grow at 2.5% p.a. to 2010, 2% p.a. to 2015 and almost 1% p.a. to 2020



Implications for Potential Growth in the Irish Economy

As mentioned earlier, from a supply-side standpoint the two key determinants of an economy's capacity for growth are the pace of increase in the supply of labour and the rate of growth

in labour productivity. The prospect of continued rapid growth in the size of the labour force evident in our projections for the next ten years suggests that Irish real GDP can continue to advance at a relatively rapid pace over that period, and certainly well in excess of EU trading partners as will be seen later. The precise rate of potential growth in the economy will depend on the way in which productivity growth develops from here.

Ireland's record of productivity growth - defined as the pace of growth in real GDP per person employed - is impressive. Since the early-1960s it has been consistently high and quite stable. It averaged almost 4% per annum in the 1960s and 1970s and eased into the 3% to 3.5% range during the 1980s and 1990s. Productivity growth in the period 2000 to 2004 (the latest for which both full-year official GDP and employment data are available) has averaged 3% per year, though there are some grounds for suspecting that this may be an underestimate (for which, see Appendix 1).

The Irish productivity performance contrasts with that in the Eurozone as a whole. In the case of the latter, GDP per person employed grew strongly in the 1960s and 1970s, at a 4% to 5% annual rate, but it tailed off quite sharply in the 1980s and 1990s and has remained very low, at less than 1% per year, since then. In the US, productivity growth has been quite modest. It averaged about 2.5% annually in the 1960s but fell

Ireland has a record of steady and strong productivity growth....

....substantially outperforming the experience in the Eurozone as a whole

to around 1% per year on average in the 1970s and 1980s. It improved during the 1990s to around 2% per year and that rate of increase has been broadly sustained since then.

The precise reasons for the strength of Ireland's productivity performance cannot be stated with certainty. However, it seems likely that it owes something to the fact that the economy has been in substantial transition over the last forty-five years. In the years after the Second World War, the economy was significantly dependent on agriculture - either in the sense of primary production or food processing. Since then, the composition of the Irish economy has gradually transformed to fit the pattern seen elsewhere in the western world, i.e. one in which services account for the greater part of activity, where the output share of manufacturing industry has declined and where agriculture is quite a small contributor to economic growth.

Strong productivity growth is probably attributable, in part, to the transformation of the economy since WW II

The development of the economy away from primary production has also been accompanied by a radical transformation in the educational attainments of the workforce. The 2002 census shows that among people in the 60 to 64 year age group over 42% had only a primary education. Nearly 38% had a secondary education (the proportion fairly evenly split between lower and upper secondary qualifications) while less than 14% had third level qualifications. By contrast,

46% of the generation of 25 to 29 year olds in 2002 had completed its education at third level. Nearly 47% of that age group ceased education at secondary level (predominantly upper secondary) while only 4% had finished their education at primary level. In effect, there had been a radical improvement in educational attainment within a generation. Higher levels of educational attainment imply that the inherent productivity of the generation now joining the labour force is much higher than that of the generation whose working life is coming to a close. As a consequence, the average level of expertise in the labour force is, and has been, in a constant process of improvement. This process of rising average labour force expertise is set to

Strong growth in productivity is also partly attributable to rapid improvements in educational attainment

Table 15		Educational Attainment (highest education level completed, % of all in each age group whose education has ceased)				
	Primary Only	Lower Secondary	Upper Secondary	Third Level Non-Degree	Third Level Degree	Not Stated
15-19 Years	9.2	39.8	39.3	2.6	0.2	8.9
20-24 Years	4.4	18.6	42.1	15.3	16.3	3.4
25-29 Years	4.1	15.7	30.9	17.6	28.4	3.3
30-34 Years	4.8	22.0	31.6	15.4	22.8	3.3
35-39 Years	6.6	26.6	33.0	12.3	18.4	3.0
40-44 Years	10.0	28.9	32.5	9.8	15.7	3.2
45-49 Years	18.6	27.2	28.5	8.1	14.4	3.3
50-54 Years	31.0	22.5	23.9	6.3	12.1	4.1
55-59 Years	37.4	20.4	21.3	5.2	10.9	4.7
60-64 Years	42.2	18.2	19.3	4.4	9.2	6.7
65-69 Years	46.4	16.4	17.2	3.5	7.7	8.7
70-74 Years	50.6	14.8	14.8	2.8	6.4	10.6
75+ Years	53.7	12.6	12.4	2.2	5.2	14.0

Source: Central Statistics Office

continue as the more highly educated younger generations in the workforce advance in age and the less highly educated older generations gradually drop out of the labour supply on retirement. Thus, it seems reasonable to assume that relatively high rates of productivity growth can continue for some time into the future.

Potential Growth

While the future pace of productivity growth must remain conjectural, its relatively fast pace and stability over the past forty years and the factors cited above suggest that the projection of an average annual 3% rate of growth in the next ten to fifteen years would not be unreasonable. Combining this with the projected growth in the labour force in the same period suggests that the underlying potential rate of growth in Irish real GDP in the five years to 2010 could be close to 5.75%. Between 2011 and 2015, as average annual growth in labour supply slows to about 2%, the potential GDP growth rate could cool down to around 5%. For the subsequent five years to 2020, a projected slower annual increase of about 1% in the labour force would lower the likely trend growth rate in activity to 4%.

***Labour force growth and high productivity
mean potential GDP growth rates of:-***

5.75% 2006-2010

5% 2011-2015

4% 2015-2020

Main Forecasts

- In the past five years, annual labour force growth has averaged 2.7%. On our central scenario, it will grow at an annual average 2.2% over the whole period 2005 to 2015 but growth should be faster in the first half of the decade than in the latter part.
- From 2015 on, the rate of increase in the labour force will slow quite sharply. We project growth of 0.9% per year on average between 2015 and 2020.
- Assuming annual growth of 3% in productivity is maintained, the labour force projections suggest the underlying potential rate of growth in Irish real GDP in the five years to 2010 could be close to 5.75%.
- Between 2011 and 2015, the potential GDP growth rate could cool down to around 5%.
- For the subsequent five years to 2020, a projected slower annual increase of about 1% in the labour force would lower the likely trend growth rate in activity to 4%.

Chapter 7

Impact of Demographic Change on Growth in Demand

The implications of population and labour force growth for the economy do not stop at the supply side. The pace of growth in the population and its age composition have very important influences on the development of the domestic market for goods and services. At its simplest, the more people there are living in the country the larger is the potential size of the economy's domestic customer base. The pace at which the population is growing will, therefore, have an influence on the pace of growth in the size of the domestic market for goods and services. Of course, not all members of the population have the same needs. Different age groups have different consumption patterns. Equally, not all age groups have the same capability of satisfying their needs. Some age groups have more earning and spending power than others. For example, the earning and spending power of young people going through the educational system is obviously limited and a lot lower than is the capacity of people in employment.

The pace of growth in and age structure of the population have important implications for demand

In addition, within the employed population it is generally the case that the earning and spending power of the more mature age groups - those whose careers are well advanced - tends to be greater than that of people in younger age groups who have more recently joined the workforce or are in the early stages of their working careers.

Earning and spending power varies with age

At the other end of the age spectrum, the spending power of retirees in the population tends to be less than that of the prime

working age groups. Thus, the pattern of demand in the economy, as well as being influenced by the pace of growth in the population as a whole, will also be influenced by the age composition of that growth, and especially by the development of numbers in those age groups with the greatest earning and spending potential relative to age groups with lower earning and spending capacity.

Demographic influences aside, the rate at which spending grows is heavily influenced by the pace of growth in disposable income. However, not all categories of expenditure are equally responsive to income growth. More staple items of spending, for example food and heating, tend not to rise in line with the pace of income growth while more discretionary and less essential categories of spending tend to rise proportionately faster than the pace at which income grows. Income growth in the Irish economy has been rapid in the past ten years, with the overall rate of increase in personal disposable income averaging about 10% in nominal terms. With the potential for continued relatively fast growth in the economy in the period ahead, income growth should remain at an elevated pace. Sustained growth in income and increasing wealth will impart their own dynamic to the likely development of consumer spending.

Not all categories of spending respond the same way to growth in disposable income

Insights into the prospective impact on demand of growth in the population and shifts in its age structure as well as of the

likely response to growth in income can be obtained with the aid of information provided by the periodic Household Budget Surveys.

The Household Budget Survey

The Household Budget Survey is carried out every five years by the Central Statistics Office and involves the compilation of detailed information on the income and spending patterns of a representative sample of households in the population. In combination with our population forecasts, this survey - the latest of which is available for 1999/2000 - can give us important pointers to the way in which consumer demand is likely to develop in the years ahead. In what follows we make use of two principal cross tabulations from the Survey

- The breakdown of household income and spending by age of head of household, and
- The breakdown of household spending by gross household income deciles.

The breakdown of spending by age provides an insight into how the prospective shape of the population, both in number and age structure, can be expected to influence demand. The breakdown of spending by income deciles (where the survey data are classified by household income within ten income ranges of equal size) can provide us with useful insights into the responsiveness of different types of spending to changes in income.

The Household Budget Survey provides important insights

Age Patterns of Spending

Table 16 summaries the 1999/2000 information on average weekly spending by households across the spectrum of ages of household heads. As may be seen, the general pattern is bell-shaped. Households with heads at the extremes of the age distribution typically spend less than those whose heads are between 25 and 64. Within the latter age groups, spending tends to peak in the 45 to 54 year cohort. There are some exceptions to this general pattern, the main ones being in spending on alcohol & tobacco, housing and entertainment. Surprisingly, in each of these areas, the 1999/2000 Survey shows that average weekly spending by households whose heads were under 25 years was either higher than that in any other age cohort or close to it.

The Table also shows the distribution of weekly disposable income across households and shows that it follows a very similar pattern to that seen in the overall distribution of spending, with the highest incomes appearing in households whose heads are in age groups between 25 to 64 years and with lower household incomes at the extremes of the age distribution. The data also highlight the 45 to 54 year age group as the one in which household incomes tend to peak.

The pattern of distribution of income and spending conforms with what might be intuitively expected in that spending tends to rise with income and income rises as earners mature into

***Households whose heads are between 25
and 64 years spend most...***

....these households also earn most

Age	Head of Household Age Groups						State
	< 25	25-34	35-44	45-54	55-64	65+	
□ per week per household							
Disposable Income	515.4	601.1	643.9	700.9	565.9	296.5	551.6
Expenditure on:-							
Food	99.3	112.1	137.6	153.4	118.1	71.4	117.7
of which: meals out	32.2	30.7	26.6	32.0	23.4	10.2	24.1
Alcohol	63.0	35.9	30.9	42.4	34.0	14.4	31.7
Tobacco	17.9	13.9	12.9	15.7	13.6	6.8	12.4
Clothing & Footwear	35.1	35.7	40.4	51.4	35.4	14.7	35.1
Fuel & Light	13.9	19.6	23.2	24.7	23.7	18.2	21.7
Rent & Other Charges	120.2	43.6	11.3	7.0	4.5	4.2	15.1
Mortgage Repayments & Home Insurance	10.9	54.4	57.3	31.4	13.8	4.9	30.2
Repair, Decoration & Maintenance	3.4	12.0	12.9	12.8	8.9	6.1	10.2
Household Non-Durable Goods	14.2	17.1	17.6	18.4	13.5	7.0	14.4
Furniture, floor covering etc.	2.9	6.6	7.1	5.4	5.6	2.9	5.3
Audio/Video Appliances	6.3	8.0	7.2	7.7	5.5	2.5	6.0
Electrical & Gas Appliances	1.7	2.7	2.4	3.5	2.3	1.4	2.4
Computer Equipment & Software	1.2	2.9	3.8	4.0	2.9	0.5	2.7
Other Household Durables	4.1	11.3	12.4	13.7	11.6	5.4	10.5
Vehicles	17.1	53.0	57.6	51.9	44.7	15.4	42.3
Travelling Expenses	26.5	9.9	7.7	15.1	11.8	3.4	9.8
Entertainment	12.6	8.1	8.6	13.9	8.1	2.6	8.3
Education & Training	7.1	4.6	8.3	20.3	9.1	1.7	9.0
Medical	5.2	10.4	12.4	12.9	10.9	8.6	10.9
Private Health Insurance	1.5	7.1	10.2	12.1	10.6	5.0	8.8
Pension Fund	1.8	11.4	15.3	17.5	10.6	1.4	10.8
Other Insurance	2.4	11.8	19.8	18.5	14.1	4.1	13.3
Telecommunications	14.2	14.8	15.0	17.5	14.9	7.6	13.8
Personal Services	2.9	3.7	4.3	5.6	5.2	2.9	4.3
Domestic Services	5.9	12.9	16.6	5.0	2.0	2.6	7.5
Hotels & Expenditure Abroad	23.9	28.0	28.6	30.6	27.2	10.1	24.2
Total Household Expenditure	574.9	648.9	692.6	745.6	569.7	282.8	577.7

Source: Central Statistics Office

their middle years and advance in their careers, and as families grow and children mature. The data also show that, as might be expected, beyond the middle years household spending tends to reduce, presumably as children move away from home and household size declines. Later, spending tends to reduce as income typically declines on retirement and as household size falls further.

Since the distribution of households is not even across the age profile of household heads, it is necessary to weight the information in Table 16 by the distribution of households to get an accurate picture of the relative importance of each broad age group in total income and spending. This is done in Table 17, where the average weekly income and spending numbers of Table 16 are multiplied by the number of households in each age cohort. Although the breakdown of income and spending is that for 1999/2000, the household numbers used to gross up the income and spending figures are those for 2002. The 2002 household numbers are used because they come from an actual census count rather than an intercensal estimate. The spending numbers are also grossed up from weekly to an annual basis to make the aggregates more meaningful in a macroeconomic context.

Table 17 and Chart 23 more clearly illustrate the bell-shaped distribution of spending across the age spectrum of heads of household, pointing up the importance of households whose heads are in the 25 to 54 age range. As may be seen from

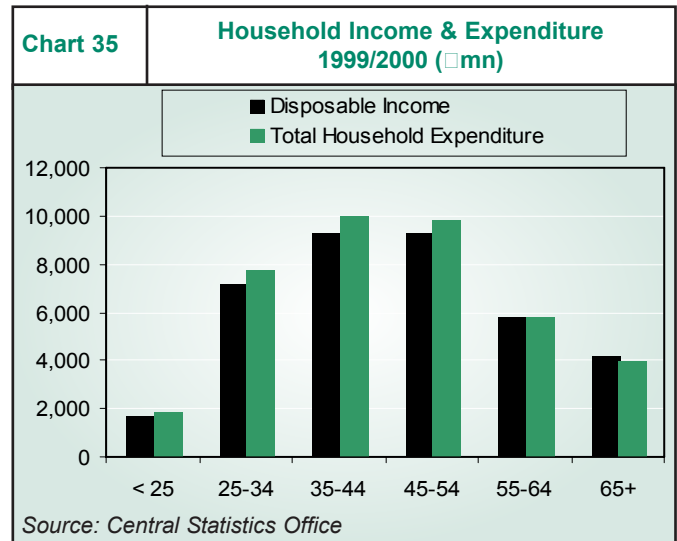


Table 17	Household Budget Survey, Annual Total Spending in Households Classified by Age of Head of Household *						
	Head of Household Age Groups						
Age	< 25	25-34	35-44	45-54	55-64	65+	State
No. Households 2002	62,003	228,332	277,087	253,952	196,574	270,010	1,287,958
₹mn per year							
Disposable Income	1661.8	7137.4	9278.2	9255.7	5784.5	4162.3	36942.8
Expenditure on:-							
Food	320.2	1330.4	1982.5	2025.6	1207.5	1002.4	7880.8
of which: meals out	103.9	364.3	383.3	422.7	239.4	143.8	1612.1
Alcohol	203.2	426.6	444.6	559.8	347.3	202.0	2119.7
Tobacco	57.6	164.8	185.1	207.2	138.9	95.1	833.2
Clothing & Footwear	113.1	423.9	582.7	678.5	362.2	205.8	2351.5
Fuel & Light	44.9	233.1	334.1	326.3	242.5	255.1	1452.0
Rent & Other Charges	387.4	517.1	162.2	92.6	45.5	58.3	1008.6
Mortgage Repayments & Home Insurance	35.0	646.4	825.8	414.4	140.9	68.7	2020.6
Repair, Decoration & Maintenance	11.1	142.8	185.6	168.6	91.1	84.9	681.1
Household Non-Durable Goods	45.6	203.4	253.6	242.3	137.6	98.8	965.1
Furniture, floor covering etc.	9.4	78.8	101.7	71.0	56.7	40.6	353.0
Audio/Video Appliances	20.2	94.6	104.2	101.8	55.8	35.2	401.2
Electrical & Gas Appliances	5.6	31.8	34.4	45.6	23.5	20.1	160.7
Computer Equipment & Software	3.7	34.2	55.2	53.4	29.8	6.6	182.2
Other Household Durables	13.2	134.2	179.1	180.4	118.9	75.3	701.9
Vehicles	55.1	629.0	829.4	684.8	456.7	215.5	2835.0
Travelling Expenses	85.4	117.4	110.4	198.7	120.2	47.0	657.0
Entertainment	40.6	95.6	123.6	183.4	83.0	36.6	555.9
Education & Training	22.8	54.9	119.7	267.5	93.1	24.4	601.4
Medical	16.7	123.1	178.8	170.6	111.4	121.2	728.7
Private Health Insurance	4.9	83.8	147.0	159.3	108.7	70.2	587.4
Pension Fund	5.9	135.1	220.7	230.8	107.9	20.2	722.0
Other Insurance	7.8	140.3	285.7	244.0	144.5	57.1	890.8
Telecommunications	45.8	176.2	216.6	231.0	152.1	107.3	920.9
Personal Services	9.4	44.3	61.4	74.5	53.3	40.0	286.6
Domestic Services	19.1	153.4	239.6	66.0	20.2	36.2	504.3
Hotels & Expenditure Abroad	77.2	332.3	412.2	403.6	277.8	141.8	1620.1
Total Household Expenditure	1853.6	7704.7	9979.2	9845.5	5823.2	3970.0	38692.1

Source: Central Statistics Office

* Average spending 1999/2000 by number of households in 2002

Table 18, where the distribution in Table 17 is converted into proportions of the national total for each expenditure category, those prime working age groups typically account for around 85% of spending. Indeed, households whose heads fall into the narrower 35 to 54 year age cohort account for over 50% of total spending. Likewise with the income breakdown, households whose heads are between 25 and 54 years of age account for just under 70% of all disposable income while the cohorts between 35 and 54 years account for 50% of total income. Tables 17 and 18 also put in context the anomalies, mentioned above, in spending patterns among households whose heads are under 25 years of age. Those households typically account for less than 5% of total income and spending. It is only in the area of spending on rent that under-25 households retain particular significance.

The key importance of the population between 35 and 54 over the next fifteen years is that the rate at which it is likely to grow is appreciably faster than the projected pace of growth in the population as a whole. This is especially the case over the period to 2015 when, on our central scenario, the total population will grow at an average rate of about 2% per year but the population between 35 and 54 will grow at an annual 3% rate. Between 2015 and 2020, our projections show a 1.8% average annual growth rate in the 35 to 54 age group compared with the 1.3% rate for the whole population. After 2020, however, the relativity is likely to swing in a less favourable direction, with the 35 to 54 year population growing

Households with heads aged 35-54 are particularly important....

....these key age groups are set to grow appreciably faster than the general population in the period to 2020

Table 18	Household Budget Survey, Relative Importance of Households by Age of Head of Household (%)						
	Head of Household Age Groups						
Age	< 25	25-34	35-44	45-54	55-64	65+	State
Age group relative to State Total (%)							
Disposable Income	4.5	19.3	25.1	25.1	15.7	11.3	100.0
Expenditure on:-							
Food	4.1	16.9	25.2	25.7	15.3	12.7	100.0
of which: meals out	6.4	22.6	23.8	26.2	14.9	8.9	100.0
Alcohol	9.6	20.1	21.0	26.4	16.4	9.5	100.0
Tobacco	6.9	19.8	22.2	24.9	16.7	11.4	100.0
Clothing & Footwear	4.8	18.0	24.8	28.9	15.4	8.8	100.0
Fuel & Light	3.1	16.1	23.0	22.5	16.7	17.6	100.0
Rent & Other Charges	38.4	51.3	16.1	9.2	4.5	5.8	100.0
Mortgage Repayments & Home Insurance	1.7	32.0	40.9	20.5	7.0	3.4	100.0
Repair, Decoration & Maintenance	1.6	21.0	27.2	24.8	13.4	12.5	100.0
Household Non-Durable Goods	4.7	21.1	26.3	25.1	14.3	10.2	100.0
Furniture, floor covering etc.	2.7	22.3	28.8	20.1	16.1	11.5	100.0
Audio/Video Appliances	5.0	23.6	26.0	25.4	13.9	8.8	100.0
Electrical & Gas Appliances	3.5	19.8	21.4	28.3	14.6	12.5	100.0
Computer Equipment & Software	2.1	18.8	30.3	29.3	16.4	3.6	100.0
Other Household Durables	1.9	19.1	25.5	25.7	16.9	10.7	100.0
Vehicles	1.9	22.2	29.3	24.2	16.1	7.6	100.0
Travelling Expenses	13.0	17.9	16.8	30.2	18.3	7.2	100.0
Entertainment	7.3	17.2	22.2	33.0	14.9	6.6	100.0
Education & Training	3.8	9.1	19.9	44.5	15.5	4.1	100.0
Medical	2.3	16.9	24.5	23.4	15.3	16.6	100.0
Private Health Insurance	0.8	14.3	25.0	27.1	18.5	12.0	100.0
Pension Fund	0.8	18.7	30.6	32.0	15.0	2.8	100.0
Other Insurance	0.9	15.8	32.1	27.4	16.2	6.4	100.0
Telecommunications	5.0	19.1	23.5	25.1	16.5	11.6	100.0
Personal Services	3.3	15.5	21.4	26.0	18.6	14.0	100.0
Domestic Services	3.8	30.4	47.5	13.1	4.0	7.2	100.0
Hotels & Expenditure Abroad	4.8	20.5	25.4	24.9	17.1	8.8	100.0
Total Household Expenditure	4.8	19.9	25.8	25.4	15.1	10.3	100.0

Source: Central Statistics Office

more slowly than the population in general. Beyond 2027, this will become more accentuated. At that point, the population between 35 and 54 will begin to decline as those born during the baby boom of the 1970s and early-1980s approach retirement.

However, in the period up to 2020 where numbers in the 35 to 54 age group will be rising strongly, growth in consumer spending should be solidly underpinned. The relatively rapid growth in households with the highest earning and spending power means that the domestic market for goods and services will be expanding in a structural way. The structural impact on spending is illustrated in Table 19. Here, we use the population projections of our central scenario to derive estimates for the number of households in each age cohort over the forecast time horizon, holding the headship rates for each cohort (i.e. the number of household heads per thousand of the population in each cohort) at their 2002 levels. The projected household numbers are combined with the spending data of Table 16 to derive the likely pace of growth in spending solely arising from growth in the population and its changing age structure.

This exercise shows that the projected growth in population alone should lead to a sustained expansion in the volume of spending over the forecast horizon. However, it also shows that this element of structural growth will be at its strongest in the next ten years. Between 2005 and 2010, the structural demographic developments are set to support growth in

Table 19	Impact on Volume of Household Spending from the changing age structure of the Population			
Annual % at Constant Prices	2010	2015	2020	2025
Meals Away from Home	2.7	2.1	1.4	0.8
Food	2.8	2.3	1.6	1.0
Alcohol	2.7	2.1	1.5	0.9
Tobacco	2.7	2.1	1.5	1.0
Clothing & Footwear	2.8	2.2	1.6	0.9
Fuel & Light	2.8	2.3	1.8	1.1
Rent & Other Charges	2.1	1.1	0.3	-0.2
Mortgage Repayments & Home Insurance	2.9	1.9	0.9	-0.2
Repair, Decoration & Maintenance	2.9	2.2	1.5	0.8
Household Non-Durable Goods	2.8	2.1	1.5	0.8
Furniture, floor covering etc.	2.9	2.1	1.4	0.7
Audio/Video Appliances	2.8	2.1	1.4	0.7
Electrical & Gas Appliances	2.8	2.2	1.6	1.0
Computer Equipment & Software	2.9	2.2	1.5	0.6
Other Household Durables	2.9	2.2	1.6	0.9
Vehicles	2.9	2.1	1.4	0.6
Travelling Expenses	2.6	2.1	1.6	1.1
Entertainment	2.7	2.2	1.6	0.9
Education & Training	2.8	2.5	1.9	1.2
Medical	2.8	2.3	1.7	1.1
Private Health Insurance	2.9	2.4	1.8	1.1
Pension Fund	2.9	2.2	1.5	0.6
Other Insurance	2.9	2.3	1.6	0.7
Telecommunications	2.8	2.2	1.6	0.9
Personal Services	2.8	2.3	1.8	1.2
Domestic Services	2.9	2.0	0.8	-0.4
Hotels & Expenditure Abroad	2.8	2.1	1.5	0.8
Total Household Expenditure	2.8	2.2	1.5	0.8

Source: NCB

household spending of almost 3% in real terms on an annual basis while the contribution between 2010 and 2015 will be between 2% and 2.5%. After 2015, the structural impact will slow somewhat. Later, it will begin to diminish more sharply as growth in those important age cohorts comes to a halt and numbers subsequently begin to fall.

The most interesting deviations from the general pattern shown in Table 19 are in spending on housing. In particular, the structural effect on expenditure on rent in the years ahead is relatively short lived. It loses considerable momentum after 2010 and is negligible after 2015. This is partly because growth in the number of households with heads under 25 years of age will be significantly slower than the rate of increase in all households and it is among the under-25 households that spending on rent is highest, as we saw earlier. Perhaps more important are likely developments among households whose heads are 25 to 34 years. They are also relatively high spenders on rent - not as high individually as the under-25s but there are about four times as many households with heads between 25 and 34 years of age so they account for about 50% of spending on rent, as Table 18 shows. After 2012, the number of households with heads in the 25 to 34 year cohort will level off and begin to decline and this will sharply curtail the structural impact on total spending on rent.

This is also the reason why Table 19 shows a slightly smaller than average structural impact in expenditure on mortgage

Growth in the population and its shifting age structure will underpin growth in household demand

payments between 2010 and 2020. Households with heads in the 25 to 34 year age group account for nearly a third of spending on mortgage payments.

Spending is responsive to growth in incomes

Spending and Income

The foregoing estimation of the structural impact on consumer demand from demographics is to some extent a static one in that it does not capture the dynamics of an economy that is growing in income and wealth. In an attempt to address this aspect of the economic outlook, we now assess the likely sectoral impact of growing income on household spending patterns.

The Household Budget Survey provides a breakdown of weekly household spending by income decile, i.e. the spending data are grouped by household income rather than by age of head of household and incomes are split into ten ranges of equal size. Table 20 summarises the survey findings on this basis. The general pattern revealed in this table is that the higher the income of the household, the higher is spending on all categories of goods and services. There are some minor exceptions but they are few and not systematic.

However, although the tendency for spending to increase with income is general, the degree to which spending responds to income is not uniform across the individual categories of goods and services.

All categories of spending rise as income grows but some are more responsive than others

Table 20	Average Weekly Household Spending by Income Decile										
	Income Decile										
□ per week	1st Decile	2nd Decile	3rd Decile	4th Decile	5th Decile	6th Decile	7th Decile	8th Decile	9th Decile	10th Decile	State
Average Income Range	<132.05	<214.46	<305.97	<411.84	<531.46	<664.19	<810.78	<1016.63	<1339.22	> 1339.22	
Disposable Income	106.2	174.4	249.4	331.8	423.0	515.9	617.8	743.5	925.5	1428.7	551.6
Meals Away from Home	3.4	4.6	9.0	13.9	19.2	24.2	28.8	34.9	42.7	60.0	24.1
Food	42.0	62.5	82.1	96.1	112.3	126.8	137.0	153.7	167.1	197.0	117.7
Alcohol	5.5	9.6	14.8	18.4	26.2	30.3	39.8	45.5	58.6	67.8	31.7
Tobacco	4.6	8.7	10.6	13.7	14.7	14.4	15.5	15.2	14.6	12.4	12.4
Clothing & Footwear	5.7	8.1	15.0	21.0	30.4	36.0	43.9	49.3	60.0	81.6	35.1
Fuel & Light	14.7	17.6	18.6	20.4	20.6	22.4	23.4	25.2	25.6	28.3	21.7
Rent & Other Charges	5.6	9.7	16.6	14.6	15.7	14.7	16.9	16.6	17.4	22.8	15.1
Mortgage Repayments & Home Insurance	3.9	5.3	9.8	17.5	25.4	33.2	38.2	44.0	54.5	69.9	30.2
Repair, Decoration & Maintenance	3.0	5.2	6.0	7.2	8.6	12.8	10.5	11.3	17.2	20.1	10.2
Household Non-Durable Goods	4.1	6.7	9.6	11.4	13.9	15.9	17.4	19.4	20.1	25.6	14.4
Furniture, floor covering etc.	1.5	1.7	2.9	2.7	3.6	5.3	7.3	6.9	9.9	11.1	5.3
Audio/Video Appliances	0.6	0.6	1.5	3.3	2.8	3.1	4.4	5.9	6.0	7.2	3.5
Electrical & Gas Appliances	3.0	3.9	4.3	6.5	8.9	12.1	10.4	14.2	14.3	19.0	9.7
Computer Equipment & Software	0.2	0.4	0.6	1.0	2.8	2.9	3.6	4.6	4.6	6.5	2.7
Other Household Durables	1.8	1.8	3.3	3.7	4.2	6.2	7.8	8.2	8.5	11.2	5.7
Vehicles	4.7	9.2	12.8	19.7	36.7	43.9	50.1	61.0	77.7	107.4	42.3
Travelling Expenses	1.1	2.7	4.3	5.9	7.8	9.1	11.4	14.3	17.7	23.9	9.8
Entertainment	0.6	1.4	2.6	3.8	6.4	8.3	10.5	13.0	17.3	19.1	8.3
Education & Training	1.0	0.9	2.4	3.3	5.5	8.5	11.6	11.8	15.6	29.2	9.0
Medical	2.3	3.3	7.2	7.2	8.1	13.4	11.9	16.3	16.6	22.6	10.9
Private Health Insurance	1.1	1.6	2.8	4.1	6.0	8.0	10.5	13.0	16.0	24.7	8.8
Pension Fund	0.0	0.0	0.3	1.2	4.1	7.3	11.7	14.8	23.5	44.7	10.8
Other Insurance	2.0	3.3	5.1	6.0	10.0	12.8	15.2	19.0	23.2	36.3	13.3
Telecommunications	4.6	6.8	8.6	10.4	12.9	15.1	15.2	17.5	19.6	22.0	13.3
Personal Services	1.5	1.7	2.5	2.9	3.0	4.6	4.4	5.5	6.5	8.8	4.1
Domestic Services	1.3	1.1	1.8	3.1	4.0	5.5	8.8	10.0	15.4	21.7	7.3
Hotels & Expenditure Abroad	2.8	3.4	6.7	11.9	15.7	23.1	25.6	35.1	45.3	72.2	24.2
Total Household Expenditure	144.1	214.6	306.8	386.2	497.6	603.5	681.8	789.5	939.9	1213.3	577.7

Source: Central Statistics Office

This is evident in Table 21 where the relative importance of the individual categories of spending within each decile is set out. It can be seen, for example, that spending on food represents 29% of total household spending in the lowest income decile but only 16% of the weekly spend in the highest income households. Equally, expenditure on fuel and light accounts for over 10% of the lowest decile's weekly outlay but only a little over 2% of the total at the high income end of the scale. In other words, spending on these items increases less than in proportion to the rate of increase in incomes. In contrast, expenditure on transport & travel, entertainment and financial products such as insurance and pension funds constitute noticeably larger percentages of the spending of the higher income deciles than of the lower, indicating such spending is more responsive to income growth.

The information in tables 20 and 21 represent a cross-sectional view at a particular point in time but it does not seem unreasonable to view them as indicating the way in which spending might be expected to vary with growth in income over time. We have, therefore, used the breakdown of spending by income decile to estimate the income elasticity of demand for each spending category. The income elasticity measures the responsiveness of demand for individual kinds of goods and services to growth in incomes and is defined as the percentage change in spending per one percent change in income. The estimated elasticities are set out in Table 22 and were obtained by regressing the percentage change in each spending

Spending on essentials responds less to income growth than spending on more discretionary items

The income elasticity of demand measures the degree of responsiveness

Table 21	Distribution of Household Spending within Income Deciles (%)										
	Income Decile										
% Breakdown in Each Decile	1st Decile	2nd Decile	3rd Decile	4th Decile	5th Decile	6th Decile	7th Decile	8th Decile	9th Decile	10th Decile	State
Meals Away from Home	2.4	2.1	2.9	3.6	3.9	4.0	4.2	4.4	4.5	4.9	4.2
Food	29.1	29.1	26.8	24.9	22.6	21.0	20.1	19.5	17.8	16.2	20.4
Alcohol	3.8	4.5	4.8	4.8	5.3	5.0	5.8	5.8	6.2	5.6	5.5
Tobacco	3.2	4.0	3.5	3.6	3.0	2.4	2.3	1.9	1.6	1.0	2.2
Clothing & Footwear	4.0	3.8	4.9	5.4	6.1	6.0	6.4	6.2	6.4	6.7	6.1
Fuel & Light	10.2	8.2	6.1	5.3	4.1	3.7	3.4	3.2	2.7	2.3	3.8
Rent & Other Charges	3.9	4.5	5.4	3.8	3.2	2.4	2.5	2.1	1.9	1.9	2.6
Mortgage Repayments & Home Insurance	2.7	2.5	3.2	4.5	5.1	5.5	5.6	5.6	5.8	5.8	5.2
Repair, Decoration & Maintenance	2.1	2.4	1.9	1.9	1.7	2.1	1.5	1.4	1.8	1.7	1.8
Household Non-Durable Goods	2.9	3.1	3.1	3.0	2.8	2.6	2.6	2.5	2.1	2.1	2.5
Furniture, floor covering etc.	1.0	0.8	0.9	0.7	0.7	0.9	1.1	0.9	1.1	0.9	0.9
Audio/Video Appliances	0.4	0.3	0.5	0.8	0.6	0.5	0.6	0.7	0.6	0.6	0.6
Electrical & Gas Appliances	2.1	1.8	1.4	1.7	1.8	2.0	1.5	1.8	1.5	1.6	1.7
Computer Equipment & Software	0.1	0.2	0.2	0.3	0.6	0.5	0.5	0.6	0.5	0.5	0.5
Other Household Durables	1.2	0.8	1.1	1.0	0.8	1.0	1.1	1.0	0.9	0.9	1.0
Vehicles	3.3	4.3	4.2	5.1	7.4	7.3	7.3	7.7	8.3	8.9	7.3
Travelling Expenses	0.8	1.2	1.4	1.5	1.6	1.5	1.7	1.8	1.9	2.0	1.7
Entertainment	0.4	0.7	0.8	1.0	1.3	1.4	1.5	1.6	1.8	1.6	1.4
Education & Training	0.7	0.4	0.8	0.9	1.1	1.4	1.7	1.5	1.7	2.4	1.6
Medical	1.6	1.6	2.4	1.9	1.6	2.2	1.7	2.1	1.8	1.9	1.9
Private Health Insurance	0.8	0.7	0.9	1.1	1.2	1.3	1.5	1.6	1.7	2.0	1.5
Pension Fund	0.0	0.0	0.1	0.3	0.8	1.2	1.7	1.9	2.5	3.7	1.9
Other Insurance	1.4	1.6	1.7	1.5	2.0	2.1	2.2	2.4	2.5	3.0	2.3
Telecommunications	3.2	3.2	2.8	2.7	2.6	2.5	2.2	2.2	2.1	1.8	2.3
Personal Services	1.0	0.8	0.8	0.7	0.6	0.8	0.7	0.7	0.7	0.7	0.7
Domestic Services	0.9	0.5	0.6	0.8	0.8	0.9	1.3	1.3	1.6	1.8	1.3
Hotels & Expenditure Abroad	1.9	1.6	2.2	3.1	3.2	3.8	3.8	4.4	4.8	6.0	4.2
Total Household Expenditure	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Statistics Office

category from decile to decile on the percentage change in disposable income between successive decile pairs.

The elasticity estimates so derived broadly conform to a priori expectations in that the categories of goods and services with the lowest elasticities are those that might generally be regarded as staples or necessities. All spending categories with elasticities less than unity - meaning that spending tends to increase by less than 1% for every 1% rise in income - can be taken as falling into this classification. As may be seen, obvious essentials such as food, fuel & light and rent costs are included here. This classification also includes items that might not be regarded in quite the same light - for example, household appliances, personal services (e.g. hairdressing), house repair & decoration as well as tobacco and alcohol.

There is an intermediate band of spending categories with elasticities either a little below or a little above 1 that might be regarded as near essentials. As the Table shows, this group includes some categories of household appliances that are seemingly in transition from being luxuries to becoming essentials. They also include categories such as medical services, clothing & footwear, mortgage payments and life insurance. Health insurance is also broadly in this group.

Categories of spending likely to be most responsive to income growth appear at the bottom of Table 22 with income elasticities well in excess of 1. These include obvious

Table 22	Income Elasticity of Demand
Fuel & Light	0.23
Tobacco	0.54
Telecommunications	0.57
Food	0.59
Personal Services	0.59
Electrical & Gas Appliances	0.63
Other Household Durables	0.63
Furniture, floor covering etc.	0.64
Household Non-Durable Goods	0.74
House Repair, Decoration & Maintenance	0.77
Rent & Other Charges	0.80
Alcohol	0.93
Medical Services	0.97
Clothing & Footwear	0.99
Audio/Video Appliances	1.02
Mortgage Repayments & Home Insurance	1.04
Life Insurance etc.	1.12
Private Health Insurance	1.13
Vehicles	1.25
Meals Out	1.30
Travelling Expenses	1.39
Domestic Services	1.41
Entertainment	1.44
Computer Equipment & Software	1.57
Education & Training	1.58
Hotels & Expenditure Abroad	1.61
Pension Fund	2.90
Total	0.77
<i>Source: NCB</i>	

discretionary categories such as domestic services, travel, entertainment and eating out. They also include spending on pension funds, which has the highest income elasticity of any expenditure category.

Prospects for Consumer Demand - Spending Categories with High Growth Potential

The income elasticities of demand derived from the Household Budget Survey data provide a basis on which we can tease out the likely scale of growth in demand for different kinds of goods and services in the period to 2020.

In order to do this, we use the estimates of Table 19 for the impact of population growth and its shifting age structure on demand and combine them with the income elasticities of Table 22 and an assumed annual growth rate for household disposable income.

In the past ten years, annual growth in personal disposable income has averaged around 10%. Allowing for a 2% to 2.5% annual rate of increase in the number of private households in the period, that implies income per household rose by around 7% per year. This is close to the longer-term average growth rate of about 6.5% in income per household recorded between 1985 and 2005. Given this general stability, we felt that an

assumed 6% annual increase in household income over the period to 2020 would not be unreasonable for the purposes of this exercise.

This procedure yields the pattern of annual growth in expenditure for each of the broad categories of goods and services set out in Table 23. It should, of course, be stressed that the results of the exercise are more a simulation than a forecast. They are, nonetheless, illustrative of the way in which the relative growth rates of different types of spending might be expected to develop in the years ahead if growth in incomes is sustained. In the Table average annual growth rates in the listed expenditure categories are shown for each five-year period between 2005 and 2020, with the expenditure categories ranked by rate of growth, from the fastest to the lowest.

As may be seen, spending categories with high income elasticities of demand yield dramatic potential rates of growth on the income assumption used in the exercise. Most dramatically, spending on pension fund provision seems set for very rapid rates of increase over the next fifteen years. The projected growth rates in Table 23 make no allowance for any increase in the extent of pension coverage in the state but only for the degree to which the combination of income growth and demographic change is likely to impact. A special module of the Quarterly National Household Survey on pension coverage

Table 23	Simulation of Growth in Household Spending by Category		
Annual % Change	2010	2015	2020
Pension Fund	20.8	20.0	19.1
Meals Away from Home	17.3	16.5	15.8
Hotels & Expenditure Abroad	12.7	12.0	11.3
Computer Equipment & Software	12.6	11.8	11.0
Education & Training	12.6	12.2	11.6
Entertainment	11.6	11.0	10.4
Domestic Services	11.5	10.6	9.3
Travelling Expenses	11.2	10.5	10.0
Mortgage Repayments & Home Insurance	10.7	9.7	8.5
Vehicles	10.6	9.8	9.0
Private Health Insurance	9.9	9.3	8.7
Clothing & Footwear	9.9	9.2	8.6
Other Insurance	9.8	9.2	8.4
Audio/Video Appliances	9.1	8.3	7.6
Medical	8.8	8.3	7.6
Alcohol	8.4	7.8	7.2
Rent & Other Charges	7.0	5.9	5.1
Furniture, floor covering etc.	6.8	6.0	5.3
Electrical & Gas Appliances	6.7	6.1	5.5
Other Household Durables	6.5	5.9	5.4
Food	6.4	5.9	5.2
Repair, Decoration & Maintenance	6.4	5.8	5.1
Tobacco	6.1	5.5	4.9
Household Non-Durable Goods	5.6	5.0	4.5
Telecommunications	5.2	4.6	4.0
Fuel & Light	4.2	3.7	3.1
Personal Services	2.8	2.3	1.8
Total Household Expenditure	7.5	6.9	6.2

published in January 2006 showed that 51.5% of employed persons had some form of occupational or personal pension. Given government initiatives aimed at encouraging people to make greater provision for retirement, it seems likely that this percentage will increase in the future, adding to the buoyancy of demand for pension products arising from population and income growth.

Apart from pension funds, Table 23 also suggests a variety of other financial services will benefit from strong growth in demand over the next fifteen years, especially mortgage and insurance products. Simulation of the structural effects of demographic change on mortgage spending in Table 19 suggested some tailing off in demand after 2010. However, the results in Table 23 imply that income effects could maintain relatively high rates of mortgage demand for longer. The Table also shows double-digit annual growth rates in a variety of other areas of demand, particularly in leisure activities, travel and entertainment.

In a general way, the results of this simulation point to the likelihood of continued strong growth in the services sector. The extent to which employment gains in services have dominated total employment growth in the last 10 years is, thus, very likely to continue in the foreseeable future. In turn, this implies that growth in the Irish economy will remain largely domestically driven.

Main Findings

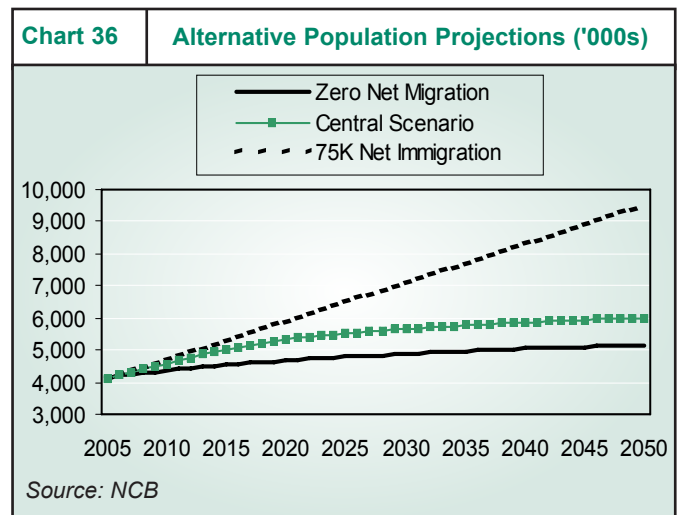
- The prime working age groups between 25 and 54 typically account for around 85% of spending and for just below 70% of all disposable income.
- More specifically, households whose head are between 35 and 54 years typically account for around 50% of income and spending.
- The population between 35 and 54 is that it is set to grow appreciably faster than the pace of growth in the population as a whole in the period to 2020.
- 3% per year versus 2% up to 2015 and 1.8% annually versus 1.3% in the five years to 2020.
- Between 2005 and 2010, demographic developments are set to support growth in household spending of almost 3% in real terms on an annual basis.
- Between 2010 and 2015 the contribution will be between 2% and 2.5%.
- After 2015, the structural impact will slow somewhat.
- Sustained growth in household income will also have important implications for the pattern of household spending.
- Categories of spending most responsive to income growth include discretionary categories such as domestic services, travel, entertainment and eating out where double-digit annual growth rates are likely in the next fifteen years.
- Spending on pension funds, which has the highest income elasticity of any expenditure category, seems set for very rapid rates of increase over the period to 2020.

Chapter 8

Alternative Scenarios

It is our judgement that the Irish economy turned a decisive corner in the mid-1990s when migration flows turned positive. Growing opportunities at home, which are inextricably associated with the positive impact of demographic change on the Irish economy, have meant that forced emigration ceased. The same buoyant economic conditions have made Ireland a favoured destination for migrants, especially from the newer EU member states. Because Ireland's economic prospects are so much better than those elsewhere in the EU, we believe the number of migrants coming to the country will continue to exceed the numbers leaving. We do not believe a return to net emigration is a realistic probability for the foreseeable future.

In the central scenario population forecast in this report, it will be recalled that we assume stabilisation in the net immigrant flow at around 53,000 for the next five years and a gradual fall to 25,000 by 2015, at which level it remains until 2020. After that net migration is assumed to fall to zero. It is certainly conceivable, however, that net immigration could be sustained at a higher level and last longer than the central scenario assumes. In a less likely possibility, net migrant inflows could be less than we have assumed.



In the accompanying tables, therefore, we present for comparison population projections on migration assumptions alternative to those used in our central scenario. We briefly examine their implications for labour force and GDP growth in the period to 2020 and look at their potential impact on household demand. The alternative scenarios assume, at the low end of the scale, that emigrant and immigrant flows balance one another, i.e. that there is zero net migration out to 2050. At the upper end, it is assumed that net migration is sustained at an annual 75,000 until 2050.

Table 24 shows the impact of the variation in migration assumption on the prospects for population growth to 2050. Sustained annual net inward migration of 75,000 would more than double the population by 2050, whereas our central scenario envisages population growth of around 45% and the population would grow by 24% in a zero net migration scenario.

Table 25 shows the projected labour force levels under the different migration assumptions and associated annual growth rates in each five-year period. As may be seen, the pace of growth slows early under the zero migration, the annual rate of increase falling below 1% after 2010 and to a fractional pace after 2015. With sustained, relatively high net inward migration, however, strong annual growth rates in the supply of labour would be maintained out to 2020.

Table 24	Population		
	Net Migration Assumption		
	Zero	Central Scenario	Sustained 75K
2005	4,130,722	4,130,722	4,130,722
2010	4,363,608	4,585,973	4,679,445
2015	4,533,641	5,008,431	5,278,765
2020	4,675,566	5,334,620	5,884,211
2025	4,786,979	5,522,083	6,483,679
2030	4,880,881	5,654,249	7,080,210
2035	4,968,053	5,767,356	7,681,832
2040	5,046,104	5,865,447	8,289,813
2045	5,106,350	5,946,894	8,898,956
2050	5,141,902	6,005,840	9,500,333

Source: NCB

Table 25	Labour Force		
	Net Migration Assumption		
	Zero	Central Scenario	Sustained 75K
2010	2,159,528	2,307,133	2,367,967
2015	2,220,637	2,531,125	2,707,039
2020	2,238,270	2,647,504	2,999,653
	Labour Force Growth (Annual %)		
	Net Migration Assumption		
	Zero	Central Scenario	Sustained 75K
2005-10	1.2	2.6	3.1
2010-15	0.6	1.9	2.7
2015-20	0.2	0.9	2.1

Source: NCB

The consequences of the different labour force projections for the potential GDP growth rate are shown in Table 26. As with our central scenario, the calculation assumes a sustained annual growth of 3% in productivity. The Table shows that high net immigration would maintain potential growth at around 6% out to 2015 instead of the slight cooling seen in our central scenario on that time horizon or the more pronounced slowing that would occur with zero net migration. Even with a net 75,000 immigrants annually, however, there would still be some slowdown in potential growth after 2015, though it would remain high on any international comparison.

The impact of population growth and its changing age structure on household demand in Table 27 again shows the extent to which sustained net immigration at a relatively high level would maintain buoyant volume growth whereas the positive effect would be more short-lived with zero net migration. Interestingly, however, when the effect of an assumed annual growth of 6% in household income is added to the demographic change (Tables 28 and 29), the differences in prospective growth rates for nominal household spending narrow between the three scenarios. This may, however, be an over-simplification in that annual growth in household income is not likely to be unaffected by the underlying pace of potential growth in the economy. It seems plausible to expect that potential growth in household income would be higher in a situation in which the high rates of growth in economic

Table 26	Potential GDP Growth (Annual %)		
	Net Migration Assumption		
	Zero	Central Scenario	Sustained 75K
2005-10	4.3	5.7	6.2
2010-15	3.6	4.9	5.8
2015-20	3.2	3.9	5.1

Source: NCB

Table 27	Structural Impact on Household Spending (Annual % Change in Volume)		
	Net Migration Assumption		
	Zero	Central Scenario	Sustained 75K
2005-10	1.8	2.8	3.2
2010-15	1.0	2.2	2.9
2015-20	0.7	1.5	2.5

Source: NCB

Table 28	Response of Household Spending to Growth in Population and Income (Annual % Change in Value)		
	Net Migration Assumption		
	Zero	Central Scenario	Sustained 75K
2005-10	6.4	7.5	8.0
2010-15	5.7	6.9	7.6
2015-20	5.4	6.2	7.2

Source: NCB

activity are maintained than in a situation where the underlying dynamism in the economy cools down earlier.

These comparisons, however, provide some broad parameters for the sensitivity of the population and economic projections to changes in the trajectory of migration flows. While assumptions about migrant flows must remain conjectural, we believe that those included in our central scenario are, if anything, more likely to turn out to be conservative so that there is probably more upside than downside potential to the economic implications sketched out in this report.

Table 29	Spending on Pension Fund Contributions (Annual % Change in Value)		
	Net Migration Assumption		
	Zero	Central Scenario	Sustained 75K
2005-10	19.5	20.8	21.3
2010-15	18.5	20.0	20.9
2015-20	18.0	19.1	20.4

Source: NCB

Chapter 9

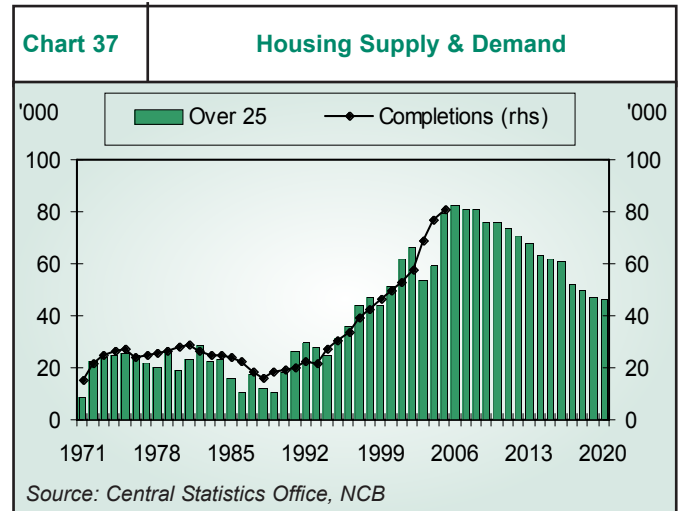
The Irish Housing Market

Growth in Population, Incomes and Second Homes

One of the most visible effects of demographic change in Ireland has been the enormous boom in housebuilding and the sharp rise in house prices in the past ten years.

The demographic sources for the ongoing strength of demand for housing are the continued rise in the population attaining the age of household formation and immigration. Moreover, incomes continue to rise and wealth is increasing, leading to upgrading of the housing stock, reductions in household size and the acquisition of second homes. In the early 1990s, the numbers in the over-25 age group began to accelerate (Chart 37) but house completions did not respond immediately. This may have been because of the effect on the confidence of builders and purchasers of high interest rates during the 1992 currency crisis. The rest of the 1990s saw housebuilding rise sharply but still lagging the growth in demand from the accelerating numbers in the over-25 age group. The shortage of supply led to sharp house price inflation.

In 2005, new house completions were almost 81,000 up from around 50,000 per annum four years earlier. The average rate of new house completions in the past three years was 75,500. This is well above earlier estimates of the sustainable pace of



The acceleration of the growth of the over-25 population in the 1990s and up to the present was the key influence on the housing market

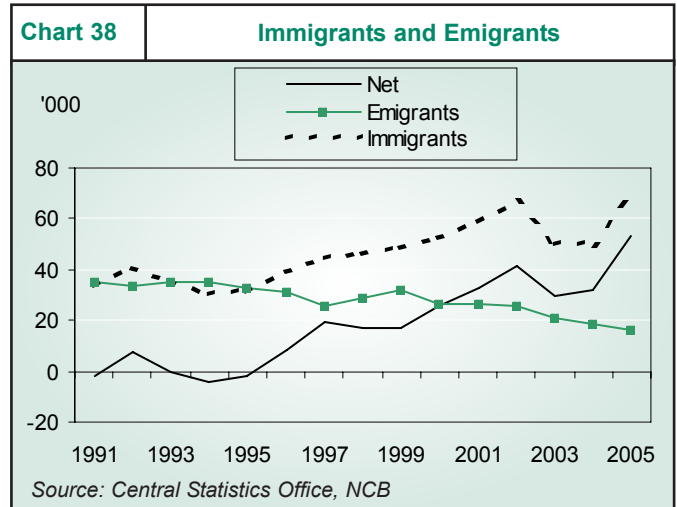
demand. The expectation was that house price inflation would moderate in the face of the rise in supply and, in fact, in the first half of 2005 house price inflation ran at an annualized pace not much above 4%, compared to 11% in 2004. In the second half of 2005, however, there was a re-acceleration to a 12% annualized pace. In the four months to January 2006 the pace was even faster. This is not indicative of oversupply nor indeed are data on private rents, which, having declined between late-2002 and April 2005, began to rise at a 2% year-on-year pace in August 2005 and accelerated to over 4% year-on-year in November 2005. There is no evidence of speculative building, since nearly all developments appear to be booked for purchase prior to commencement. To the extent that there is speculative purchasing, the rise in rents would indicate that there is no sign of oversupply in the rental market to date, though some large developments in Central Dublin will be completed this year.

Chart 37 also shows the projected annual change in the numbers in the population aged over 25 until 2020. These projections are based on the assumption of a net inflow of immigrants of 53,000 per annum in the years up to 2010 and then tapering off to a net inflow of 25,000 by 2020. (We explore the immigration issue in more detail below.) It is clear from this Chart that the large increase in new house completions from 30,000 per annum in 1995 to almost 81,000 per annum in 2005 was driven by the acceleration of the growth in the over-25 population from just above 30,000 per

The rate of increase in the over-25 population is projected to slow from its current level, implying a slowing of the growth in demand for housing, unless immigration accelerates

annum to above 80,000 per annum currently. Since the baby boom in Ireland peaked in 1980, the numbers in the over-25 age group will grow more slowly from here but, by 2010, the pace will still be above 70,000 per annum, if net immigration matches our assumptions. The projected slowing in the rate of growth of the over-25s from around this year implies that an increasing rate of immigration would be required to maintain the recent pace of housebuilding.

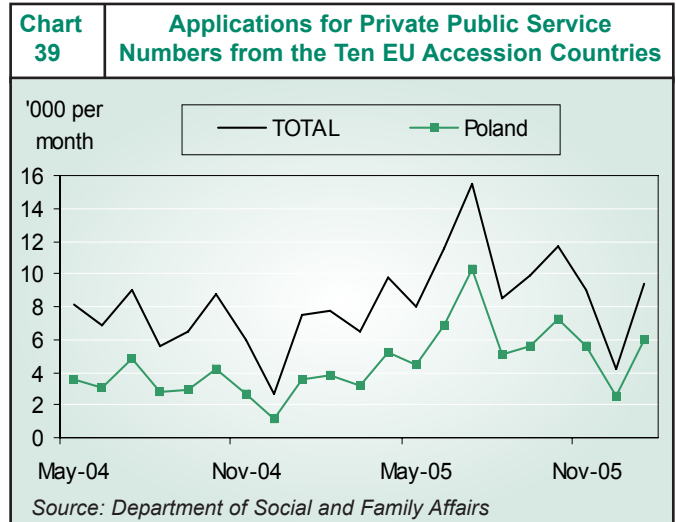
Thus, immigration will be an increasingly important variable determining the demand for housing from here. Net inward migration tends to fall or turn negative when the economy is performing relatively poorly and to rise when the economy is growing relatively strongly. The housing market tends to be strongly correlated with both economic growth and migration. Thus, in the 1980s there was poor growth, net emigration and, for most of the period, a weak housing market. House prices rose on average by less than 4% per annum between 1983 and 1988. Emigration averaged almost 30,000 per annum over that period. Since the mid-1990s, there has been the opposite experience. Economic growth has been strong. House prices began their ascent in earnest in 1996 when prices rose 12%. Perhaps not coincidentally, 1996 saw the beginning of the first sustained net inflow of migrants since the 1970s. Since then, net immigration has averaged 30,000 per annum. In the year to April 2005, net immigration was more than 53,000 and the last three years have averaged 38,000 per annum.



Whereas in the 1990s the pace of growth in the over 25 population was driven mainly by the rise in domestic population in those age groups and returning Irish immigrants, from now on the pace of immigration of foreign nationals will become an increasingly important influence

Our central medium-term view is that the Irish economy is likely to achieve its potential growth of close to 6% to 2010 and to moderate somewhat thereafter. This pace of growth is likely to be far above what will be achieved in most other EU countries. The unemployment rate is the lowest in the EU. Therefore, the net inflow of migrants should continue but the exact pace is hard to judge. The accession of the ten new countries to the EU in May 2004 added 75 million people, mostly on low incomes, to the pool of those with ready access to the Irish labour market, so we may see the surge in immigration from these countries continue in the next few years. Ireland, the UK and Sweden are the only countries to have allowed citizens of the ten new countries free access to their labour markets, without the necessity of a work permit. It seems likely that it will be 2009 or even 2011 before the labour markets of the other 12 members will be open to these countries, under the terms of their accession.

In the official data on immigration, the net inflow to Ireland in the year to April 2005 from the ten new countries was 26,200. In the same period, applicants for PPS numbers totalled 69,000 or almost 6,000 per month. Recently, the number of applicants for PPS numbers has been running at about 9,000 per month (Chart 39). The Quarterly National Household Survey shows that there were 73,000 people from the Accession States employed in Ireland at the end of 2005. This had risen from 20,000 in Q3 2004, the earliest date for which we have data. This would suggest that net immigration picked



Continuing economic growth and low unemployment in Ireland, should result in the surge of immigration to Ireland from the ten new countries in the EU continuing until perhaps 2011

up very strongly in the course of 2005.

A point to consider in relation to housing demand is that the gross immigration flow may be a more important influence than net immigration. The net inflow in the last three years represented the difference between an average 57,000 gross inflow and an average 19,000 gross outflow. It may well be the case that many of the Irish emigrants do not free up much accommodation for immigrants because they are mostly 15-24 year olds leaving family homes for perhaps a brief period abroad. A gross inflow of 57,000 per annum could result in demand for almost 20,000 housing units. This, together with the "second home" phenomenon would help explain why house prices have held up so strongly, despite an average rate of new house building of 75,500 per annum in the last three years.

It is reasonable to expect that the building of second homes is likely to be growing in importance as GDP per capita rises together with the equity built up in the existing housing stock. Rising incomes and wealth enable much greater "consumption" of housing in the form of second homes. Until recent years, Ireland's per capita income was below that of the EU and, as a result, we would presume that wealth per capita was and, is still, very much lower in Ireland. These income and wealth differences would probably have resulted in lower quality of family homes in Ireland and also a lower incidence of ownership of second homes relative to richer countries. Relatively faster income and wealth growth in Ireland is now tending to bring about a catch-up effect, possibly leading to

Rising income and wealth is driving an upgrading of the existing housing stock and the building of second homes

more rapid new household formation, improvements in the quality of the housing stock and increases in the consumption of housing generally, through growth in the ownership of second homes.

There are no data on how many house completions are accounted for by second homes and, thus, little means of estimating future demand. However, we have used the 2002 census information to compare the growth in population by county with house completions by county since 1996. (Table 30) This shows that there were nine counties, mostly on the west coast and in the midlands, where the increase in house completions was more than the increase in population. This is, a priori, an indication of the construction of second homes in counties where second home construction is likely to be large relative to total completions.

It is also noticeable that there is a range of counties where the relationship between new house completions and the increase in population is low and close to 1, suggesting second homes are also part of the picture there too.

If the relationship between population change and house building in all these counties had been the same as in the remainder of the country, about 10,000 fewer houses would have been built per annum between 1996 and 2002. We use this figure as our working assumption for the annual number of second homes built.

Table 30	Changes in Population & House Completions 1996-2002		
	A 1996-02 Change in Population	B 1996-02 House Completions	A/B
MEATH	24,204	9,679	2.5
KILDARE	29,003	11,805	2.5
TIPP S	3,699	1,684	2.2
DUBLIN	64,336	32,038	2.0
LAOIS	5,787	3,418	1.7
WICKLOW	12,036	7,118	1.7
KILKENNY	5,085	3,339	1.5
CLARE	9,327	6,908	1.4
OFFALY	4,585	3,408	1.3
WESTMEATH	8,713	6,617	1.3
CARLOW	4,229	3,326	1.3
WEXFORD	12,172	9,685	1.3
GALWAY	19,972	15,946	1.3
LOUTH	9,636	7,802	1.2
LIMERICK	10,487	8,597	1.2
CORK	27,671	22,701	1.2
WATERFORD	6,838	5,838	1.2
CAVAN	3,472	3,018	1.2
KERRY	6,294	7,337	0.9
ROSCOMMON	1,828	2,245	0.8
SLIGO	2,357	2,983	0.8
MONAGHAN	1,459	1,873	0.8
MAYO	5,904	8,373	0.7
DONEGAL	7,389	11,334	0.7
LONGFORD	961	1,841	0.5
TIPP N	3,047	6,170	0.5
LEITRIM	758	2,609	0.3
TOTAL	291,249	207,692	1.4

Source: Central Statistics Office, Dept. of Environment

Comparing the growth in population with house completions, we estimate that second homes account for perhaps 10,000 completions per annum

Projections of the Demand for Housing

In Table 31, we show estimates for the sustainable pace of house building in the years ahead assuming firstly that net immigration is zero, secondly that the gross immigration flow is 75,000 per annum and thirdly, the central forecast, in which net immigration is around 53,000 per annum until 2010, tapering off to 25,000 per annum by 2020. Finally, for the central forecast we estimate the implications of allowing household size for each age cohort to fall at the trend rate of decline between 1991 and 2002. The numbers in the Table include second home building based on the estimates outlined, a flat estimate of 10,000 per annum. In addition, we have allowed for replacement house building of 10,000 per annum, or about 0.8% of the existing stock.

Looking at the estimates in the first column, with net immigration at zero, we can see that less than 50,000 houses per annum would be the sustainable pace until 2010, dropping thereafter to around 40,000 per annum. Replacement and second homes would be about half of that requirement from 2010 onwards. For the 75,000 per annum gross immigration assumption, implying net immigration of about 55,000 per annum, the demand level would approach 70,000 per annum until 2020. In the central forecast, housing demand is about 60,000 per annum until 2015. It would then diminish to about 50,000 per annum until 2020.

Table 31		Potential Demand for New Housebuilding on Different Migration Assumptions			
000 pa		Unchanged HH size			Declining HH Size
Immigration		Zero	75,000	Central Forecast	Central Forecast
2006-10		47	66	61	64
2010-15		41	69	59	63
2015-20		38	69	52	56

Source: NCB

Our central estimate, including a trend decline in household size, suggests that the underlying demand for housing will be about 65,000 per annum until 2015

We would not exclude the possibility that housing output may remain above these estimates in the years immediately ahead since immigration flows, mainly from the 10 Accession Countries, could be more than we have assumed. This might support a rate of housebuilding close to the current pace of 80,000 per annum for a period. We also think it likely that household size will decline further.

Household Size

Household size in Ireland at 2.94 persons per household in the 2002 census is high compared to the 2.5 average in the EU-15 and 2.6 in the US. The number of persons per household in Ireland fell to 2.94 in 2002 from 3.22 in 1996. Most of this change came from changes in the age composition of the population, though there was some reduction in household size for given age cohorts. We know from the 2002 Census that the rate of reduction in household size for each individual five-year age group was small whether between 1991 and 1996 or 1996 and 2002. It is unlikely that the pace at which average household size is falling for individual age cohorts quickened in the period since 2002. In the final simulation, we have allowed household size to fall, for each age cohort, at its recent trend. This would add about a further 4,000 per annum to demand, as can be seen looking at columns three and four of Table 31 together. This would bring our central estimates up

Table 32		Persons Per Household	
Ireland	2002	2.9	
Sweden	2001	2.9	
Luxembourg	2001	2.5	
Greece	2001	2.6	
Finland	2001	2.1	
Austria	2001	2.4	
Denmark	2002	2.2	
Belgium	2001	2.4	
France	2001	2.4	
Germany	2001	2.2	
Italy	2001	2.6	
Netherlands	2001	2.3	
Spain	2001	2.9	
United Kingdom	2001	2.3	
United States	2000	2.6	
EU-15 Average	2001	2.5	

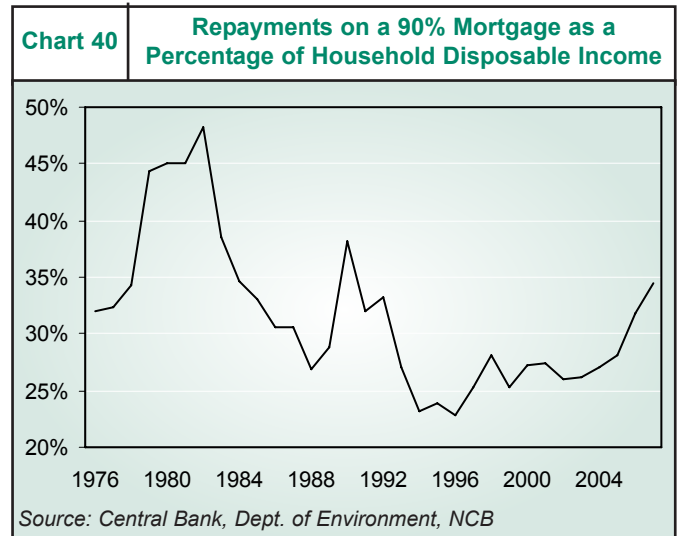
Source: EU Commission

A trend fall in household size would add about 4,000 per annum to demand for housing until 2020

to about 65,000 until 2015 and 55,000 until 2020. With 75,000 immigrants per annum and falling household size, more than 70,000 houses per annum would be needed until 2020. Household size, which was just over 2.9 persons in 2002 would fall to into the range 2.2-2.4 persons by 2020, in the majority of these simulations, but driven mainly by changes in the age composition of the population, rather than significant behavioural change for given age cohorts. At around 2.4, household size would be close to the level as in the UK at present.

Affordability

The above simulations suggest what the "required" rate of house building should be but will it be affordable? While house prices have risen significantly in Ireland in recent years, declining interest rates and rising incomes have offset most of the impact on the burden of servicing mortgage debt. In order to estimate the burden of mortgage repayments, we have taken the extreme case where the marginal buyer takes out a 90% mortgage, repayable over a twenty-year term, on a house of average price. (In fact, the average loan-to-value ratio for new mortgages in 2005 was about 70% and borrowers now go for longer term mortgage repayments implying an easier repayment burden.) We calculated household income by dividing national disposable income by the number of



households. Then, we expressed the repayments as a percentage of household disposable income. It should be stressed that this is not the average repayment burden but represents the burden for the marginal purchaser. The result in Chart 40 shows that the repayment burden has remained broadly stable in Ireland for most of the last ten years. It is estimated to have been in the range 27%-28% since 2000. However, as interest rates rise this year and next to bring the ECB financing rate perhaps to 4%, and as house prices rise by perhaps 11% this year and 6% next, we estimate that the repayment burden could rise to above 34% of disposable income for these marginal buyers. This would not seem likely to bring about a sharp squeeze on affordability by historical standards but would imply a more constrained budget for the marginal buyer than seen since the early 1990s. Each 1% rise in interest rates raises the repayment burden by over 2 percentage points of disposable income. This is built into the projections in Chart 40.

While it seems likely that the much-sought equilibrium between demand and supply in the housing market is closer, the market is not telling us that balance it is about to arrive in 2006, as prices are accelerating upwards. Equilibrium would mean that house prices would tend to rise in line with earnings and, barring interest rate increases above the assumed 4% level by 2007, the repayment burden as a percentage of disposable income would thus stabilise at below 35%.

The mortgage repayment burden for the “marginal” house buyer has been lowered in recent years by falling interest rates and rising incomes

While interest rates and house prices are forecast to rise in the next two years, the impact will be lessened by rising income and the repayment burden for the 90% borrower should not exceed 35% of disposable income by 2007

Summary

- The continuing rise in the over-25 population provides a strong base for housing demand.
- Rising immigration is now the key to sustaining house completions at anything close to the current pace.
- Immigration seems likely to remain high in the next few years because of the freedom of access granted to citizens of the ten new EU countries and the disparity in incomes between Ireland and many of these countries.
- Increasing income and wealth are supportive of investment in the existing housing stock and in second homes. We estimate that about 10,000 second homes are being constructed per annum.
- Mortgage repayments still appear affordable this year and next on our assumptions. Thereafter, the market may need to find an equilibrium so that prices rise more in line with incomes if affordability is to be preserved.
- Housing demand is projected to run at between 40,000 and 75,000 units per annum for the next 15 years depending on the pace of immigration, building of second homes and trends in household size. On our central population projection, allowing for declining household size, we put the pace of demand at 65,000 per annum to 2015 and 55,000 thereafter. In the immediate few years ahead up to 2010, the sustainable pace of housebuilding could be higher if immigration continues to rise.

Chapter 10

Demand for Cars

Vehicle Numbers

Another striking effect of the growth in population and prosperity in the last decade has been the worsening of the traffic situation, as the number of vehicles and vehicle usage have increased. Total vehicle numbers rose from 1.3 million to 2 million between 1996 and 2004. The number of private cars rose from 1 million to almost 1.6 million in over the same period. Table 32 shows the growth in population as well as the growth in vehicles and cars per 1000 population in the last decade. The average rate of growth since 1995 in the vehicle population was 5.4% per annum, made up of a 1.4% rise in the population and a 4.0% increase per annum in the number of vehicles per head of population. The picture was similar for private cars with the annual rate of growth averaging 5.2% per annum, of which 3.8% was the increase in cars per 1000 population.

In the remainder of this chapter we confine the analysis to the stock of private cars. At 374 cars per 1000 population in 2002, Ireland was well below the average in EU-15 countries. Table 33 shows rates of car ownership in 2002 for selected countries. At that time, based on EU Commission data, Ireland's rate of ownership was 84% of the UK rate and 76% of that in the EU-15. Since income per capita in Ireland now

Table 32		Vehicle Numbers			
	Population (million)	Vehicles per 000 population	Vehicles (million)	Private Cars per 000 population	Private Cars (million)
1996	3.6	369	1.3	292	1.0
2004	4.0	504	2.0	391	1.6
Av Annual Growth %	1.4	4.0	5.4	3.8	5.2

Source: Central Statistics Office, NCB

Vehicle numbers have grown by over 5% per annum mostly because of a 4% rise in the number of vehicles per head of population

Table 33		Cars per 000 Population - Selected EU Countries
2002	Cars per 000 Population - Selected EU Countries	
	Italy	591
	Germany	542
	Austria	496
	France	491
	EU15	491
	Belgium	464
	EU25	459
	Spain	459
	UK	447
	Netherlands	425
	Finland	422
	Ireland	374

Source: OECD, Central Statistics Office, Dept. of Environment

ranks above the EU average and the prospects for income growth are better than in most EU countries, it seems likely that the trend rise in the rate of car ownership will continue.

Ireland's rate of car ownership is well below the EU and GDP per capita is now above the EU average....

Trends in Rates of Car Ownership

In attempting to put some parameters on the possible growth in the car stock in Ireland we adopted an approach based on population projections and trends in rates of car ownership per 1000 population. This is a methodology that has worked well in the past. In 1998, we estimated, using this approach, that the car population in Ireland should increase from just over 1 million in 1996 to between 1.6 million and 1.8 million by 2006. The latest data available are for 2004 and show a private car population of almost 1.6 million. On the basis of the level of car registrations in 2005 and the estimated level of scrappage, we would put the car population at end-2005 at about 1.67 million.

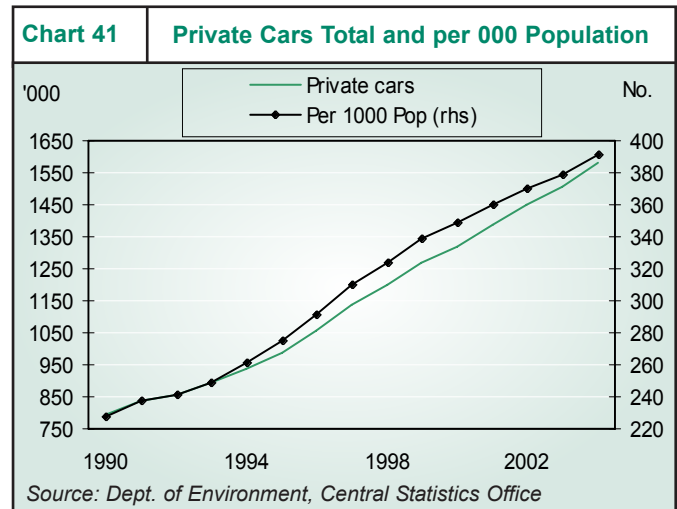


Chart 41 shows that there has been a steep rise in the number of private cars in the last decade and also that the number of cars per 1000 population has been rising more rapidly than growth in the total car stock. Our projections suggest that there will be a sustained rise in the total numbers of cars, at least until 2020, the period for which we carried out the simulations.

....This suggests that the trend rise in the rate of car ownership will continue

Simulations of the Increase in the Car Stock in Ireland

A number of simulations were carried out. The first was a base case in which it was assumed that the car stock would grow in line with the overall projected growth in the population, using the central projection for population growth. Obviously, in this case the number of cars per 1000 population remains unchanged throughout the period (Sim 1). Secondly, we simulated growth based on the slowest of recent trends in the growth in the rate of car ownership in Ireland per 1000 population, which was in the period from 1999 to 2004 (Sim 2). Nevertheless, this trend was just under 3% per annum. (The trend growth in the period 1995-04 was 4% per annum.)

We also carried out other simulations (not shown in the tables), as checks, which examined trends in ownership rates in the UK and the EU-15 and their relationship to Irish rates of ownership. Ireland is closing the gap with the EU-15 and UK rates of ownership but in 2004 the gap was estimated still to have remained wide with Ireland at about 80% of the EU-15 level and 86% of the UK level. However, these simulations resulted in increases in Irish rates of ownership by 2020 to well above current US levels of over 600 cars per 1000 population. We thought that an unlikely outcome.

The trend growth in car ownership is high in Ireland

In the end, we chose a central estimate for the car stock projection in Ireland that runs between the base (Sim 1) and the results from applying the 1999-2004 trend (Sim 2). The results are set out in Tables 34 and 35.

In the base case, the car population would rise to over 1.8 million by 2010 and to over 2.1 million by 2020, from 1.6 million in 2004. In this case, as Table 34 shows, ownership per 1000 population is assumed to remain unchanged so the only effect on the stock of cars is coming from the projected rise in the population. However, this is unlikely to be the outcome, since, as we saw in Chart 41, ownership rates are rising in Ireland and the overall rate of ownership is still low by international standards. In the second simulation, with the rate of ownership

Other simulations were carried out as checks but would have implied ownership per 1,000 population rising to well above 600 by 2020, the current US level

Table 34		Ireland - Simulations of Possible Path of Ownership Rates of Private Cars		
Per '000 Total Population	SIM 1	SIM 2	Central Estimate	
1996	292	292	292	
2004	391	391	391	
2010	391	465	449	
2015	391	536	501	
2020	391	619	558	
Sim 1	Based on unchanged vehicles per 1000 population in Ireland			
Sim 2	Based on Ireland's recent trends in cars per 1000 total population 1999-2004			
Central Estimate	Based on intermediate profile of Sim 1 and Sim 2			
<i>Source: NCB</i>				

rising at the trend pace, the car population could be more than 2.1 million by 2010 and over 3.3 million by 2020. Rates of ownership per 1000 population in 2010 would still be below what was the EU-15 average in 2002. The rate of car ownership per 1000 in 2020 in Ireland in this simulation would be over 600, which would be about the same level as in the US in 2003 and not significantly above the 591 level in Italy in 2002, the top of end of the EU-15 range at the time.

The simulations suggest that the number of cars could rise from the 2004 level of 1.6 million to 3.00 million by 2020. Our base case is a rise to 2.1 million by 2020, but this is judged an unlikely outcome

It should be stressed that these are simulations rather than forecasts but they do provide some parameters for the potential scale of the increase in car population. Clearly, as the car population rises there could be an increased reluctance to purchase cars because of the traffic problems implied by a car

Table 35		Ireland - Simulations of Possible Total Numbers of Private Cars				
				Average Annual Growth Rates		
Total number of Cars (million)	SIM 1	SIM 2	Central Estimate	SIM 1	SIM 2	Central Estimate
1996	1.0	1.0	1.0			
2004	1.6	1.6	1.6	5.2	5.2	5.2
2010	1.8	2.1	2.0	2.7	5.2	4.6
2015	2.0	2.7	2.5	1.7	4.7	4.0
2020	2.1	3.3	3.0	1.2	4.2	3.5
Sim 1	Based on unchanged vehicles per 1000 population in Ireland					
SIM 2	Based on Ireland's trend in cars per 1000 total population 1999-2004					
Central Estimate	Based on an intermediate profile of Sim 1 and Sim 2					
<i>Source: Central Statistics Office, NCB</i>						

density significantly larger than at present. Our central estimate is that a near doubling of the car population to 3 million by 2020 is a distinct possibility. The rate of car ownership would be 558 per 1000 population in 2020 on this basis, still below the 591 rate in Italy in 2002 and the US level of above 600 per 1000 population in 2003. This would mean that more than half the population would own a car by 2020, a not implausible situation.

Thus, we put our best estimate of the likely car population in 2020 at about 3 million on the basis of these simulations compared to less than 1.6 million in 2004.

The Importance of Other Forms of Transport

Clearly, the suggestion that the car population may almost double begs the question as to the role of other forms of transport. Table 36 shows the evolution of the means of travel to work since 1986. The striking development is that, since 1991, the percentage travelling to work as the driver of a car has risen from 39% to 55%. The percentage travelling as car passengers declined slightly over the period, to 7% in 2002, and a further 7% travelled in other types of vehicle in 2002.

Means of Travel - % of workers	1986	1991	1996	2002
	%	%	%	%
On foot	13	11	11	11
Bicycle	6	4	4	2
Bus	9	8	8	7
Train	1	2	2	2
Motor cycle	1	1	1	1
Car driver	37	39	46	55
Car passenger	8	8	9	7
Other (incl. lorry or van)	3	4	4	7
None	17	20	12	6
Not stated	5	3	3	2
Total	100	100	100	100

Source: Central Statistics Office

Cars dominate the means of travel to work at 62% compared to only 9% of workers who use bus and train

Thus, 69% of people travelled to work by car or other motor vehicle in 2002. The percentage travelling by bus fell slightly to 7% and by train was stable at 2%.

It seems unlikely, given the low base from which public transport is starting, that it will make serious inroads into the percentage of journeys to work made by car. While the introduction of bus lanes and the Luas in Dublin have had some impact, car sales continue to boom. Further public transport initiatives are planned but it is unclear whether they will reduce dependence on cars for travelling to work. Indeed, the motorway programme, which is well underway, seems likely to increase the car population as congestion is reduced or at least increases more slowly. It will facilitate longer journeys to work, which are already rising sharply. We, thus, do not think that our estimate that the car population may reach 3 million by 2020 will be threatened by a large increase in the use or availability of public transport.

Investment in public transport systems seems unlikely to alter the likelihood of the numbers of cars rising to 3 million by 2020

Table 37	Average Annual Car Registrations			
	2001-2005	2006-10	2011-15	2016-20
SIM 1	154	123	129	129
SIM 2	154	186	229	270
Central Estimate	154	171	202	229

Source: Central Statistics Office, NCB

The Outlook For Car Registrations

What are the implications for annual car registrations from a prospective large increase in the car stock? Table 37 sets out the potential annual rates of registrations on the basis of the

Annual car registrations would average 171,000 until 2010, 200,000 in 2010-15 and 230,000 in the final period to 2020 in our central scenario

assumptions in the different simulations outlined above and on our central estimate of the rise in the car stock. On the base simulation (Sim 1), in which no increase in the rate of car ownership per 1000 population is assumed, we estimate that car registrations would be about 120,000-130,000 per annum until 2020, compared to over 150,000 per annum on average in the last five years. The simulations are on the basis of an annual scrappage rate of 5% of the car stock. The average rate of scrappage in the last five years has been 6% so we feel this is a conservative approach. In the most recent four years, scrappage has been running at about 75,000-85,000 per annum. We estimate it will reach 100,000 per annum by 2010.

In Sim 2 and our central estimate car registrations would rise to a 170,000-190,000 annual pace until 2010. As the car stock increases replacement, obviously, becomes an increasingly important determinant of new registrations. Further increases in registrations to above 200,000 in the 2011-2015 and to a range centred on perhaps 250,000 per annum in the five years to 2020 are estimated on the basis of these two simulations.

Travel to Work - Time

Obviously, such a large increase in the car stock from a situation in which traffic is already congested is likely to have

Table 38 Travel to Work 2002	
Usual Residence	Minutes per mile
Dublin Co. and City	5.4
Limerick Co. and City	2.8
Waterford Co. and City	2.8
Cork Co. and City	2.8
Kildare	2.8
Wicklow	3.0
Clare	2.5
Galway Co. and City	2.5
Sligo	2.5
Kerry	2.4
Kilkenny	2.4
Donegal	2.2
Mayo	2.2
Tipperary	2.2
Meath	2.4
Louth	2.5
Monaghan	2.3
Leitrim	2.1
Wexford	2.2
Roscommon	2.1
Cavan	2.2
Carlow	2.2
Westmeath	2.2
Longford	2.1
Offaly	2.1
Laoighis	2.1
State	3.2

Source: Central Statistics Office

Table 39 Travel to Work 2002	
Usual Residence	Minutes per Journey
Meath	34
Wicklow	34
Kildare	33
Dublin Co. and City	31
Laoighis	26
Louth	25
Carlow	24
Offaly	23
Westmeath	23
Clare	23
Limerick Co. and City	23
Cork Co. and City	22
Galway Co. and City	22
Cavan	21
Wexford	21
Leitrim	21
Kilkenny	21
Tipperary	20
Roscommon	20
Longford	20
Mayo	20
Monaghan	19
Waterford Co. and City	19
Kerry	19
Sligo	18
Donegal	18
State	26

Source: Central Statistics Office

Journey time to work is highest in Dublin and its surrounding counties

significant adverse consequences for travel times. Table 38 shows average time per mile spent travelling to work in 2002. It is clear that Dublin has by far the biggest problem at over 5 minutes per mile on average. Limerick, Waterford, Cork, Kildare and Wicklow had much faster times at around 2.5 minutes per mile, or 24 miles per hour. On average in the State, the time per mile to travel to work was 3.2 minutes or less than 19 miles per hour.

Table 39 shows the total time taken to travel to work by county in 2002 (These are journeys one way). There are no comparable data for the earlier census. For the State on average, travel to work time was 26 minutes. Not surprisingly, Dublin and surrounding counties had the longest average travel times ranging up to 34 minutes.

Travel to Work - Distance

Data are not available on time taken to travel to work for earlier years but we can gain some impression of the change in the length of time taken to travel to work from Table 40. This shows the percentage of workers, by distance travelled to work. Those who lived where they worked, or very close (0 miles to work), have fallen as a percentage of total workers; those

Table 40		Distance Travelled to Work - Per Worker				
		% of total workers				
Miles	1981	1986	1991	1996	2002	
0 miles	15	19	17	11	5	
1 mile	14	14	14	14	13	
2 miles	9	9	9	9	9	
3 to 4 miles	14	14	13	14	13	
5 to 9 miles	17	17	17	19	19	
10 to 14 miles	7	7	8	9	11	
15 miles and over	7	7	8	11	18	
Not stated	17	12	14	13	13	
Total	100	100	100	100	100	
Average miles per worker	4.2	4.4	4.8	6.7	9.8	

Source: Central Statistics Office

Average distance travelled to work rose dramatically between 1996 and 2002

Table 41		Aggregate Miles Travelled to Work				
Miles '000	1981	1986	1991	1996	2002	% Of Total 2002
1 mile	162	155	155	181	214	2
2 miles	209	197	203	239	292	2
3 to 4 miles	545	523	532	613	740	6
5 to 9 miles	1321	1316	1380	1676	2115	16
10 to 14 miles	942	953	1050	1421	2118	16
15 miles and over	1749	1753	2144	4534	10294	57
Total	4928	4896	5464	8664	15773	100
Average Annual Growth %		-0.1	1.8	9.7	10.5	
Average Annual Growth in Miles per worker		81-86	86-91	91-96	96-02	
		1	2	7	7	

Source: Central Statistics Office, NCB

travelling up to 4 miles to work have remained broadly stable as a percentage, but those travelling longer distances, especially 15 miles or more, have risen significantly from 8% of the total in 1991 to 18% in 2002. From the more detailed breakdown in the 2002 census we know that, of the 18% travelling more than 15 miles to work in 2002, 6% travelled more than 30 miles to work. The average number of miles travelled to work each way rose by almost 50% from 6.7 miles in 1996 to 9.8 miles in 2002. This number had been stable from 1981 to 1996.

Aggregate Miles Travelled to Work Rising Sharply

We have estimated the aggregate number of miles travelled to work in Table 41. (Note this is only travel to work so total work travel per day would be twice as long.) The aggregate miles travelled to work almost trebled between 1991 and 2002 to 15.8 million miles each way. Between 1996 and 2002 miles travelled to work rose by over 80%, an average annual rate of over 10%. Most of the growth was because of a 7% per annum rise in the average miles travelled by each worker and the rest by the growth in numbers of workers.

The growth in aggregate miles travelled to work rose by 10% per annum between 1996 and 2002

Table 42	Aggregate Miles to Work Each Day by means of travel to work - one way				
	1996	2002	1996	2002	Contributions to 96-02 Change in Aggregate Miles Travelled to Work
	Million	Million	% of total	% of total	
On foot	0.2	0.2	1.8	1.2	0.4
Bicycle	0.1	0.1	1.5	0.7	-0.4
Bus	0.7	0.9	8.3	5.9	2.6
Train	0.3	0.6	3.5	3.7	3.9
Motor cycle	0.1	0.2	1.0	1.0	1.1
Motor car: Driver	5.8	10.8	67.0	70.2	74.4
Motor car: Passenger	0.9	1.1	10.9	6.9	1.7
Other means	0.5	1.8	5.9	10.4	16.3
Total	8.7	15.3 ⁽¹⁾	100	100	100

(1) Note: The aggregate miles in the breakdown in this table is 15.3 million, not 15.8 million, as in Table 41, because this tabulation excludes those not present on Census night.

Source: Central Statistics Office, NCB

Travel to Work by Car Increasingly Dominating

The means of travel to work are dominated by cars to an increasing extent. Table 42 shows the breakdown of aggregate miles by means of travel to work. We can see that, of the 15.3 million miles travelled to work each day, 10.8 million, or 70%, were by car drivers, up from 67% in 1996. A further 1.1 million miles were journeys by car passengers accounting for 7% of total miles in 2002. Thus, cars accounted for 77% of miles travelled to work in 2002 and 78% in 1996, though there was a shift down in passenger travel and a shift up in miles travelled to work by drivers, implying an increase in cars on the road.

The column on the right in Table 42 shows the percentage contributions of the different means of transport to the total change in miles travelled to work. Of the rise in aggregate daily miles of 6.6 million between 1996 and 2002, 74% was accounted for by the increase in miles travelled by drivers of cars. Bus and train combined accounted for only 7% of the increase. The contribution from “other means” to the growth in miles was largely other private vehicles.

Of the rise in the aggregate miles travelled to work between 1996 and 2005, 74% was accounted for by drivers of cars and only 7% by bus and train

Longer Journeys to Work Led to the Large Rise in Aggregate Miles Travelled to Work

Table 43 shows the total daily miles travelled to work, distinguishing between cities, towns and rural areas by length of journey. Of the 8.7 million miles in 1996, 2.5 million originated in Dublin and the main cities. By 2002, this had only risen to 3.4 million miles, from a total of 15.3 million miles travelled to work in 2002. Travel to work from towns (excluding cities) accounted for 4.3 million miles in 2002 compared to 1.9 million in 1996. The rural areas were the source of 7.6 million miles of journeys to work in 2002 and 4.3 million in 1996.

Thus, in the rise of 6.6 million miles travelled to work between 1996 and 2002, travel from towns (excluding cities) accounted for 2.4 million miles and the rural areas 3.3 million miles. Journeys of over 15 miles to work accounted for most of the increased work travel from towns and rural areas.

From the population changes in the cities, towns and rural areas between 1996 and 2002, shown in Table 44, we can begin to see why this happened. The population of Dublin and the other four main cities, including suburbs and environs, rose by 77,000 between 1996 and 2002 while the population of the towns, including suburbs and environs, rose by 135,000 over

Miles - million	1996			2002		
	Total	1-14 miles	15 miles plus	Total	1-14 miles	15 miles plus
Greater Dublin Area	1.9	1.5	0.4	2.6	1.8	0.8
Cork City	0.3	0.2	0.1	0.4	0.3	0.2
Limerick City	0.2	0.1	0.1	0.2	0.1	0.1
Galway City	0.1	0.04	0.03	0.1	0.1	0.1
Waterford City	0.0	0.03	0.02	0.1	0.0	0.0
Total Cities	2.5	1.9	0.6	3.4	2.2	1.2
Towns (ex cities)	1.9	0.6	1.3	4.3	1.0	3.3
Rural Areas	4.3	1.6	2.7	7.6	2.1	5.5
Total	8.7	4.1	4.5	15.3	5.3	10.0

Source: Central Statistics Office, NCB

Towns (ex cities) and rural areas were the source of most of the rise in travel to work miles 1996-02. Most of the increase was due to journeys over 15 miles

('000)	1996	2002	Change
Greater Dublin Area	953	1005	52
Cork City	180	186	6
Limerick City	79	87	8
Galway City	57	66	9
Waterford City	44	47	3
Total Cities	1313	1391	77
Towns	809	944	135
Rural Areas	1504	1583	79
Total Population	3626	3917	291

Source: Central Statistics Office

the same period. Meanwhile, the population of the rural areas rose by 79,000.

Table 45 shows the percentage breakdown of total miles travelled to work in the cities, towns and rural areas in 1996 and 2002 by length of journey. The most significant change has been the rise in the percentage of total miles travelled to work originating in towns, from 22% in 1996 to 28% in 2002 and the more or less corresponding reduction in the percentage accounted for by miles to work originating in cities of 7 percentage points to 22%.

Journeys of over 15 miles to work accounted for 65% of miles travelled in 2002 compared to 52% in 1996. From the towns, such journeys rose to 21% of total miles, compared to 15% in 1996. There was a similarly large rise in the importance of journeys over 15 miles from rural areas from 31% in 1996 to 36% of total journeys to work in the state in 2002.

The fact that the rise in total miles travelled to work came mainly from the towns and rural areas and was mainly associated with longer individual journey distances, helps partly to explain the rising rate of car ownership. The 2002 Census, shows that the areas of the country where over 30% of the workforce travel more than 20 miles to work are

There was a large rise in the population of towns (ex cities) between 1996 and 2002

Table 45	Percentages of Aggregate Miles by Cities, Towns and Rural Areas - 1996 & 2002					
	1996			2002		
	Total	1-14 miles	15 miles plus	Total	1-14 miles	15 miles plus
Greater Dublin Area	22.1	17.8	4.3	16.8	11.7	5.2
Cork City	3.4	2.3	1.1	2.9	1.7	1.2
Limerick City	1.7	0.8	1.0	1.5	0.6	0.9
Galway City	0.9	0.5	0.4	0.8	0.4	0.4
Waterford City	0.5	0.3	0.2	0.5	0.3	0.2
Total Cities	28.6	21.7	6.9	22.4	14.7	7.8
Towns (ex cities)	21.6	6.9	14.6	28.0	6.6	21.4
Rural Areas	49.8	19.0	30.7	49.6	13.5	36.1
Total	100.0	47.7	52.3	100.0	34.8	65.2

Source: Central Statistics Office

The rise in aggregate miles travelled to work was dominated by journeys over 15 miled and most of these originated in the rural areas and towns

concentrated mainly in circles around Dublin and Galway. Across a significant area of the country, 20%-30% of the workforce travel more than 20 miles to work each day. This helps explain why the traffic congestion problem is now country-wide and not just acute in the main cities. This change in travel to work patterns is probably being driven by the more rapid rise in house prices in cities. This may have motivated people to undertake longer journeys to work to avail of lower housing costs outside the cities.

On our population projections, the pressure for accommodation in the main urban areas is likely to continue to be significant. The premium on property prices in or close to the main city centres seems likely to remain high against this background. This will be driven by the balance between the cost of time and running expenses of travelling long distances to work and the price of centrally-located property compared to remote locations.

Rates of Car Ownership by Area

Table 46 shows the estimated rates of car ownership in the main cities and counties. (A more detailed table by county is in the Appendix 2, Table 12). In view of the above analysis it is not surprising that the car ownership rates per thousand

	1996	2002	Annual % Change 1996-02
Dublin city	224	270	3.1
Cork City	253	305	3.1
Limerick City	206	268	4.5
Waterford City	399	312	-4.0
Galway city	241	311	4.4
Total Cities	239	281	2.8
Total counties	306	392	4.2
State	292	374	4.0

Source: Central Statistics Office, Dept. of Environment, NCB

The rising rate of car ownership would seem to be associated with the large rise in journey length and aggregate miles travelled to work in the towns and rural areas

population were much higher in the counties than in the cities in 2002, at 392 per 1000 compared to 281 in the cities. In Kildare and Wicklow car ownership per 1000 population was more than 400. The average for the state was 374 per 1000. Moreover, the rate of increase in ownership per 1000 population was much faster in the counties at 4.2% per annum over the 1996-02 period compared to 2.8% per annum in the cities. These data are consistent with the larger rise in miles travelled to work in the towns and rural areas compared to the cities outlined above.

Projected Car Ownership by Region

Since Dublin and surrounding counties of Kildare, Louth, Meath and Wicklow (Dublin KLMW) is the largest area of traffic congestion in the country, we thought it would be interesting to estimate in broad terms how the car stock might expand in this region compared to the rest of the country. To do this we split the projected growth rate for the total car population, in our central estimate, according to the relative growth of the car population in the Dublin KLMW area compared to the rest of the country (RoC) since 1996. The result is shown in Table 47. Historically the counties around Dublin tended to have much faster rates of growth in their car stock than occurred in the city

Million	Car Stock Projections			
	2004	2010	2015	2020
Dublin KLMW	0.6	0.8	1.0	1.1
RoC	0.9	1.3	1.5	1.8
State	1.6	2.1	2.5	3.0
Annual Growth Rates %		2004-10	2010-15	2015-20
Dublin KLMW		4.1	3.7	3.2
RoC		4.9	4.2	3.7
State		4.6	4.0	3.5

KLMW - Kildare, Louth, Meath, Wicklow
 Source: Dept. of Environment, NCB

The car stock in Dublin and surrounding counties may rise more slowly than in the rest of the country. It could still be 1.1 million by 2020 compared to 0.6 million at present

itself. When we aggregate the city and KLMW the rate of growth in the car stock tends to be lower than in the rest of the country because of the dampening effect of slower growth in the city.

While the total car stock in the State, on our central estimates, is projected to rise by 89% to almost 3 million by 2020, the Dublin KLMW car stock would rise by 78% to over 1.1 million from 0.6 million in 2004. This would be a very large increase in a relatively small and already crowded area of the country and could mean a worsening of congestion problems. A very significant increase in the availability of public transport would be essential to dampen this possible large increase in the car stock. However, the speed with which the car stock is projected to grow suggests there could be a 28% rise in cars in the Dublin area to over 0.8 million by 2010. This is a very short span in which to put in place new public transport initiatives in the region.

The assumptions made by the NRA, that the car population will reach 2.4 million by 2040, seem low to us

National Roads Authority (NRA) Estimates for Traffic Appear Conservative

The NRA, in its "Future Traffic Forecasts 2002-2040", published in 2003, projected the number of cars to rise by 44%

by 2020. This would make the car stock 2.1 million in 2020 similar to our Sim 1 base projection. On our central estimate, which includes a trend growth in car ownership by 2020 to rates slightly above the 2002 rate in Germany, the car population would rise by 89% by 2020, which would bring it up to about 3 million. The NRA model assumed a saturation level for car ownership of 80 per 100 adults, which it was expected would be approached by 2040. On our central estimate for the car stock in 2020, the number of cars per 100 of the adult population would have reached only 63 by 2020, still leaving room for growth towards the NRA assumed saturation level.

On our simulations, the stock of private cars would rise by 89% by 2020 compared to the NRA projection for a 44% rise by 2040

Summary

- The number of private cars in the state rose from 1 million in 1996 to 1.6 million in 2004, a growth rate of over 5% per annum. Most of this reflected an increase in the number of cars per 1000 population.
- The rate of car ownership in Ireland, at 391 per 1000 population in 2004, remained well below the level in the UK (447 in 2002) and the EU 15 (491 in 2002).
- Since income per capita in Ireland is now above that of the EU 15, it is to be expected that the trend rise in rates of car ownership will continue.
- In simulating the possible size of the car stock by 2020, we calculate the rise that, were there to be no change in ownership per head of population, car numbers would rise to a total in 2020 of 2.1 million.
- If we project that the rate of ownership rises at the 1999-2004 pace, the car stock would reach 3.3 million by 2020. This would, however, result in a level of ownership per 1000 population of over 600, which would be above the current levels in the US.
- Our central estimate is that the numbers of cars could reach 2 million by 2010 and 3 million by 2020.
- Car numbers in Dublin and surrounding counties could rise from 0.6 million in 2004 to 0.8 million in 2010 and 1 million by 2015.
- The rate of ownership in 2020 would be 558 per 1000 on this basis, above that of Germany but below the level in Italy in 2002, which was then at the top of the range for the EU 15.
- Annual car registrations would be about 170,000 to 200,000 per annum until 2015, on this basis and about 230,000 per annum until 2020.
- We doubt increased use of public transport will materially affect this prospect. The 2002 Census shows that train and bus were used by only 9% of workers as a means of travelling to work, compared to 69% who used cars and other vehicles.
- Aggregate miles travelled to work rose by over 10% per annum between 1996 and 2002, of which about 7% was accounted for by a rise in individual journeys. About 86% of the aggregate increase originated in towns (excluding cities) and rural areas. These journeys are unlikely to be much affected by the proposed public transport initiatives in the immediate years ahead.
- The National Roads Authority projections are for the number of cars and light goods vehicles to rise by 44% by 2020. Our estimates suggest that the number of cars could rise by 89% by 2020. If correct, this could have significant consequences for infrastructure relative to that in the NRA provisions.

Appendices

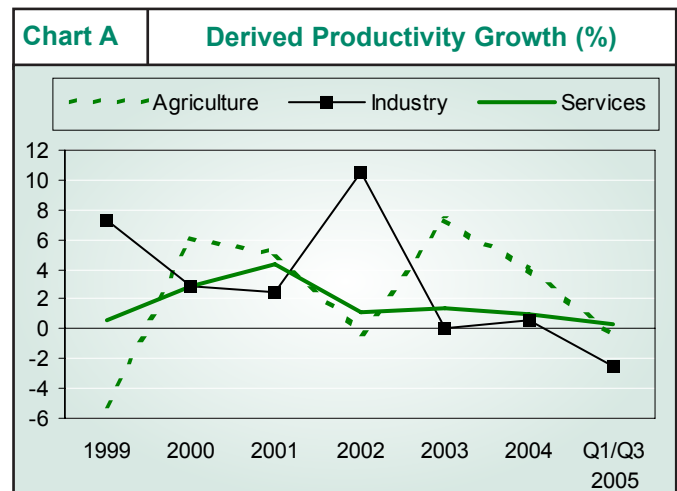
Appendix 1 - Underestimating Irish GDP Growth

In 2002, total employment in Ireland grew by 1.8% on the previous year. In the same year, real GDP is estimated to have grown 6.1%. Since that year, the rate of increase in employment has accelerated, rising by 1.9% in 2003, 3% in 2004 and 4.7% for all of 2005. However, growth in real GDP has slowed down. It averaged 4.4% in 2003, 4.5% in 2004 and 4% in the first three quarters of 2005 - the latest period for which data are available at time of writing.

The diverse trajectories of GDP and employment growth in this recent period is not what might normally be expected and the oddness of the development is pointed up by the implied movement in productivity growth. During the 1960s, 1970s, 1980s and 1990s, productivity - measured as GDP per person employed - grew by 3% to 4% annually. This pace was maintained between 2000 and 2002 but in 2003 and 2004 it averaged only 2%. More alarmingly, in the first three quarters of 2005 productivity fell by 0.7%. Chart A shows that the deterioration was primarily in the productivity of the industrial sector, i.e. in manufacturing, construction and the utilities. There, productivity growth slumped from 10.5% in 2002 to 0.1% in 2003 and 0.6% the following year before falling 2.5% in the first three quarters of 2005. The chart shows that productivity growth in the services sector has been a lot more stable (albeit low, of which more below). It also shows some odd swings in productivity in agriculture but these need not concern us here since agriculture accounts for less than 3% of GDP.

The initial slump and subsequent precipitate fall in industrial productivity seems inherently implausible. It is conceivable that

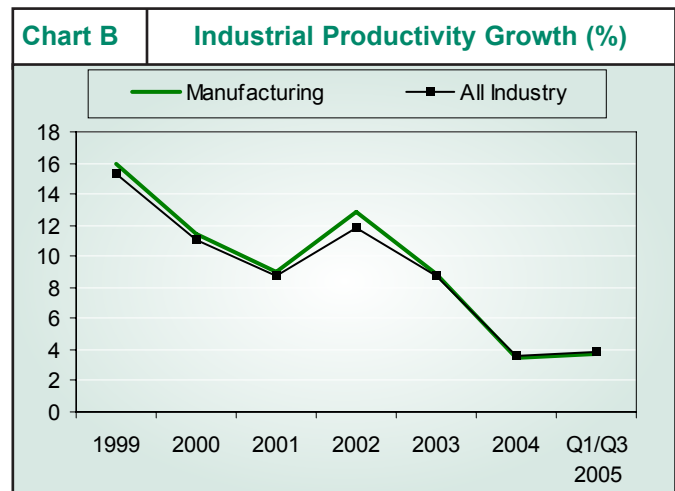
productivity growth could stop short in a period in which demand for industrial products slows temporarily. An outright fall in productivity, especially one as large as that implicit in the Q1 to Q3 2005 period, is much more improbable in the sense that total employment would be likely to be cut in a situation where poor demand persists. However, it must be pointed out that these productivity numbers are not figures published explicitly as such by the Central Statistics Office but are derived from two separate CSO publications, viz. the national accounts releases for the GDP data and the Quarterly National Household Survey (QNHS) for the employment numbers. Thus, it is possible - and likely, in our view - that there are inconsistencies between the two basic sources rather than that productivity growth actually plunged in the way the calculation suggests.



Indeed, there is some corroboration for this view in an independent source of productivity data for the industrial sector. Separately from the national accounts figures and the QNHS, the CSO publishes data for industrial production and for numbers engaged in industry. These data cover output and employment in manufacturing, mining & quarrying and electricity, gas and water. In other words, they include most but not all of the "industry" aggregate in the national accounts - the main omission being construction. Chart B, shows the development of industrial productivity derivable from these data. As may be seen, there has been a significant slowing in the rate of productivity growth in recent years and this would not be inconsistent for a period in which growth in Ireland's trading partners has been slow. However, the data do not show any outright decline in productivity such as is implied by the combination of national accounts and QNHS data.

The judgement that must be made in this situation is on which of the elements of the overall productivity calculation we can place more trust, the national accounts numbers or the QNHS employment data. It is our view that the QNHS employment numbers are likely to prove more robust since they are derived from a large-scale direct enquiry. The national accounts estimates are necessarily based on a variety of different sources not all of which are as statistically reliable as the employment survey. For this reason alone, it seems very plausible that current estimates for real GDP growth understate the true position. Certainly, anecdotal evidence and indicators such as the pace of tax revenue growth in 2005 are more in keeping with the accelerating trend shown by the employment data rather than the slowing pace of GDP growth shown in the national accounts publications.

In addition to this, there may be an inbuilt bias towards slower GDP growth in the way in which the national accounts are constructed. This is associated especially with the estimation of services sector output. In many service industries the only the basis on which output can be measured is by reference to employment. But basing output calculations on employment implicitly sets productivity at zero. It is for this reason that the implicit growth in productivity in the services sector evident in Chart A is so consistently low. This is unlikely, however, to be a true reflection of actual conditions. Computer technology has enhanced productivity in the services sector just as well as it has increased the efficiency of industrial processes. The services sector's importance in the economy has quite clearly increased. In 1990, service sector employment amounted to a little less than 57% of the total at work. In 2005, the services sector accounted for almost 67% of total employment. With the rising importance of the services sector, it is possible that the inherent margin of error in the calculation of growth in the economy under current methodologies has increased.



Appendix 2 - Statistical Appendix

Table 1	Immigrants and the Irish Born Population 2002			
% Of Total	Born Ireland	Immigrants	Immigrant Number '000	Immigrants % of cohort
0-9	14	10	27	5
10-19	16	12	34	6
20-29	16	20	57	9
30-39	14	27	74	13
40-49	13	15	40	8
50-59	11	8	23	5
60-69	8	5	13	5
70-79	5	2	7	3
80+	3	1	3	3
Total	100	100	278	7

Source: Central Statistics Office

Table 2	Average Annual Percentage Changes in Population in Intercensal Periods					
AV Ann %	Born Ireland		Immigrants		Total Population	
	1996-02	1991-96	1996-02	1991-96	1996-02	1991-96
0-9	0.1	-2.5	4.9	9.1	0.3	-2.1
10-19	-2.2	-0.3	7.8	-6.9	-1.8	-0.5
20-29	2.0	1.7	4.4	-0.4	2.2	1.5
30-39	1.5	0.7	9.2	7.1	2.2	1.2
40-49	1.4	2.3	8.0	3.9	1.8	2.4
50-59	3.7	2.4	5.6	5.3	3.8	2.6
60-69	1.2	-0.2	3.1	1.8	1.2	-0.1
70-79	0.4	0.3	-0.3	-0.3	0.3	0.3
80+	1.8	2.8	-0.3	1.2	1.7	2.8
Total	0.8	0.4	6.3	2.1	1.2	0.5

Source: Central Statistics Office

Table 3		Immigrants by Year of Taking up Residence			
Born Ireland	Year of taking up residence				
	Before 1991	1991-1995	1996-2002	Total	
Dublin Co. and City	21,582	8,965	47,893	78,440	
Rest of Country	57,957	28,499	91,969	178,425	
Total	79,539	37,464	139,862	256,865	
As % of Total by year					
Dublin Co. and City	28	11	61	100	
Rest of Country	32	16	52	100	
Total	31	15	54	100	
As % of Total by region					
Dublin Co. and City	27	24	34	31	
Rest of Country	73	76	66	69	
Total	100	100	100	100	

Source: Central Statistics Office

Table 4		Participation in Education by Age - 2002			
%	Born In Ireland		Immigrant		
	1996	2002	1996	2002	
15 years	97	95	97	93	
16 years	91	92	91	92	
17 years	83	86	85	84	
18 years	65	72	70	72	
19 years	48	59	54	63	
15-19 years	78	81	78	81	
20 years	37	51	49	56	
21 years	28	43	44	48	
22 years	18	32	32	39	
23 years	10	20	25	30	
24 years	6	14	16	25	
20-24 years	20	33	32	37	

Source: Central Statistics Office

Table 5		Households by Place of birth of Reference Person - 2002				
% Of Total	Born In Ireland			Immigrant		
	Households	Persons	HH Size	Households	Persons	HH Size
Married With Children	40	59	4.3	36	52	4.2
One person	22	7	1.0	19	7	1.0
Husband and wife	13	9	2.0	15	10	2.0
Lone parents	12	12	3.0	9	9	3.0
Non-family households	7	6	2.7	11	11	2.9
Cohabiting couples	6	5	2.8	10	9	2.8
Other	0.5	1	5.7	0.4	0.8	5.8
Total	100	100	3.0	100	100	2.9
Numbers '000	1186	3503		99	284	

Source: Central Statistics Office

Table 6		Percentage of Households by Nature of Occupancy - 2002							
% Of Total	Born in Ireland			Immigrant			Total		
	Total	Dublin	RoC	Total	Dublin	RoC	Total	Dublin	RoC
Owner Occupied With Mortgage	38	42	37	34	30	36	38	41	37
Owner Occupied Without Mortgage	37	28	41	21	13	25	36	27	40
Rented	18	21	16	41	52	36	20	24	18
Other	7	9	6	4	5	3	6	8	6
Total	100	100	100	100	100	100	100	100	100
Number '000	1179	344	834	98	33	65	1277	378	900
Town Areas									
Owner Occupied With Mortgage	41	42	40	32	30	34	40	40	39
Owner Occupied Without Mortgage	29	28	30	13	13	14	28	27	28
Rented	23	22	24	50	53	47	25	24	25
Other	8	9	7	5	5	5	8	8	7
Total	100	100	100	100	100	100	100	100	100
Number '000	716	337	379	64	33	32	781	370	411
Rural Areas									
Owner Occupied With Mortgage	35	46	35	38	41	38	35	46	35
Owner Occupied Without Mortgage	50	40	51	35	24	35	49	39	50
Rented	10	10	10	25	33	25	11	11	11
Other	5	5	5	2	2	2	5	5	5
Total	100	100	100	100	100	100	100	100	100
Number '000	463	7	456	34	0	33	496	7	489

Source: Central Statistics Office

Table 7												
Quarterly National Household Survey - Over 15 Population by Nationality and Sector												
Q3 2004	Agric	Prod Ind	Constr	Whole & Ret	Hotel & Rest	Trans	Fin & Oth	Public	Educ	Health	Other	Total
Irish	117.4	286.3	209.5	255.2	98.2	110	227.3	92.5	106.6	169.8	106.4	1779.1
Foreign nationals	2.5	19.4	12.3	15	17.8	4.7	15.8	1.1	5.8	12.5	8.1	114.4
of which:												
United Kingdom	0.5	5.9	4.3	4.8	1.9	1.6	5.5	0.7	2.9	3.7	3.3	34.8
EU15 excl. Irl. & UK	0.3	2.6	1.8	1.7	2.8	1	5	0.2	1.4	0.9	1.6	19.4
Other European	1.2	6.3	4.8	3.9	4.1	0.9	1.6	0	0.3	1.2	1.2	25.4
of which Accession states												
EU-15 to EU-25	1	5.2	3.9	3.1	3.3	0.6	0.8	0	0.2	0.7	0.8	19.5
Other	0.5	4.6	1.4	4.6	9	1.2	3.7	0.2	1.2	6.7	2	34.8
Total	119.9	305.7	221.8	270.2	116	114.7	243.1	93.6	112.4	182.3	114.5	1893.5
Q4 2005	Agric	Prod Ind	Constr	Whole & Ret	Hotel & Rest	Trans	Fin & Oth	Public	Educ	Health	Other	Total
Irish	111.2	258	227.9	263.9	91.2	110.9	240.3	99.3	121	174.8	111.1	1809.5
Foreign nationals	4	30.3	25.3	21	24.3	7.4	22.6	1.3	6.9	16.8	10.9	171.1
of which:												
United Kingdom	0.7	6.2	5	5	2.3	2.5	6.4	1	3.2	5.1	3.2	40.7
EU15 excl. Irl. & UK	0.8	2.4	0.8	1.8	3	1.2	6.3	0.1	1.8	1.4	1.8	21.6
Other European	2.4	16.8	16.9	9.1	9.9	2.5	5.3	0.1	0.6	1.7	4	69.2
of which Accession states												
EU-15 to EU-25	2.2	15.9	15.2	8	8.6	1.9	4.5	0.1	0.4	1.3	3.6	61.6
Other	0.1	4.9	2.6	5.1	9.1	1.2	4.6	0.1	1.3	8.6	1.9	39.6
Total	115.2	288.3	253.2	284.9	115.5	118.3	262.9	100.6	127.9	191.6	122	1980.6

Source: Central Statistics Office

Table 8		NCB Population Projections								
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1-4 Years	297,365	306,613	317,702	323,813	330,036	338,373	344,080	348,962	352,945	355,824
5-9 Years	281,210	286,166	288,447	295,497	301,927	307,284	316,617	327,685	333,461	339,245
10-14 Years	274,715	271,994	273,202	277,459	284,465	291,029	295,950	297,946	304,742	310,796
15-19 Years	296,004	298,194	297,581	295,019	293,203	290,775	287,819	288,376	291,791	297,924
20-24 Years	341,343	334,171	329,583	325,360	323,570	322,846	325,561	324,467	320,583	316,966
25-29 Years	351,412	366,744	376,645	383,068	381,434	374,277	366,106	360,220	354,217	350,398
30-34 Years	330,226	338,914	349,145	359,708	374,039	390,679	406,140	414,947	419,410	414,791
35-39 Years	306,373	318,603	331,341	345,582	356,262	366,878	375,173	384,539	393,791	406,686
40-44 Years	290,670	300,219	310,485	318,868	329,556	339,870	352,132	364,343	377,701	386,733
45-49 Years	263,776	272,956	280,394	289,638	299,713	311,474	320,850	330,768	338,491	348,408
50-54 Years	242,498	246,351	251,870	256,451	261,713	266,763	275,899	283,171	292,188	301,962
55-59 Years	222,039	226,731	230,364	234,894	238,404	243,235	247,006	252,365	256,724	261,702
60-64 Years	172,385	182,758	193,739	203,316	211,930	219,791	224,413	227,923	232,277	235,560
65-69 Years	141,407	144,060	147,185	153,207	159,469	165,923	176,058	186,723	196,004	204,300
70-74 Years	116,934	118,794	121,238	123,230	126,288	129,799	132,504	135,632	141,438	147,472
75+ Years	202,365	206,451	211,080	216,106	221,255	226,976	232,932	239,324	245,543	252,711
Total	4,130,722	4,219,720	4,310,003	4,401,215	4,493,265	4,585,973	4,679,241	4,767,393	4,851,305	4,931,477

Table 8 Continued

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1-4 Years	357,571	358,240	357,635	356,202	354,179	351,697	348,875	344,794	340,285	335,709
5-9 Years	347,123	352,233	356,404	359,801	362,203	363,557	363,902	362,476	360,233	357,411
10-14 Years	315,673	324,568	335,129	340,394	345,781	353,391	358,255	361,679	364,322	365,952
15-19 Years	303,540	307,517	307,857	313,570	318,843	323,192	331,873	339,371	342,037	345,418
20-24 Years	312,263	306,705	304,441	305,766	310,269	314,495	317,215	313,835	315,851	317,368
25-29 Years	347,342	347,626	343,501	337,043	331,382	324,987	317,969	312,722	310,957	312,249
30-34 Years	404,044	392,241	382,745	373,943	368,097	363,524	362,821	355,646	346,195	337,684
35-39 Years	421,700	435,040	440,749	442,585	435,551	422,678	409,201	396,107	383,935	374,942
40-44 Years	395,400	401,320	407,913	415,034	426,504	440,603	453,283	455,558	453,827	443,078
45-49 Years	357,631	368,419	379,114	391,156	398,861	406,384	411,196	416,880	422,532	431,892
50-54 Years	313,367	322,316	331,722	339,011	348,565	357,486	368,017	378,155	389,618	396,747
55-59 Years	266,429	275,189	282,029	290,678	300,126	311,240	319,952	328,847	335,642	344,668
60-64 Years	240,113	243,579	248,569	252,660	257,397	261,946	270,485	276,927	285,136	294,108
65-69 Years	211,817	216,190	219,515	223,730	226,913	231,353	234,747	239,579	243,542	248,055
70-74 Years	153,684	163,303	173,396	182,244	190,205	197,462	201,812	205,147	209,350	212,564
75+ Years	260,734	268,189	276,360	286,813	298,277	310,624	325,522	341,321	357,912	374,560
Total	5,008,431	5,082,672	5,147,078	5,210,630	5,273,154	5,334,620	5,395,124	5,429,044	5,461,373	5,492,405

Table 8 Continued

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1-4 Years	331,083	326,411	322,248	318,781	315,991	313,837	312,245	311,167	310,633	310,457
5-9 Years	354,142	350,549	346,466	341,959	337,386	332,767	328,104	323,954	320,503	317,730
10-14 Years	366,523	366,082	364,658	362,418	359,601	356,338	352,753	348,677	344,173	339,602
15-19 Years	351,569	355,575	358,904	361,450	363,001	363,517	363,044	361,611	359,383	356,591
20-24 Years	317,949	322,730	329,885	332,329	335,468	341,305	345,072	348,207	350,615	352,076
25-29 Years	313,115	312,350	309,078	311,012	312,442	312,997	317,685	324,767	327,142	330,208
30-34 Years	328,544	318,904	313,830	312,265	313,773	314,846	314,266	311,135	313,210	314,757
35-39 Years	367,352	363,740	356,765	347,518	339,202	330,236	320,744	315,808	314,366	315,995
40-44 Years	426,583	409,722	396,864	384,941	376,188	368,822	365,427	358,614	349,472	341,231
45-49 Years	443,178	452,214	454,627	453,064	442,494	426,224	409,566	396,887	385,117	376,468
50-54 Years	403,686	407,922	413,585	419,225	428,550	439,800	448,819	451,262	449,770	439,325
55-59 Years	353,063	363,035	373,106	384,483	391,590	398,518	402,779	408,466	414,140	423,465
60-64 Years	304,696	312,918	321,726	328,495	337,451	345,811	355,732	365,762	377,074	384,207
65-69 Years	252,370	260,470	266,911	275,064	283,941	294,391	302,563	311,290	318,066	326,971
70-74 Years	216,968	220,384	225,286	229,404	234,011	238,456	246,463	252,921	261,009	269,778
75+ Years	391,262	407,498	423,809	441,609	458,460	476,386	492,856	510,732	529,187	547,048
Total	5,522,083	5,550,503	5,577,747	5,604,017	5,629,550	5,654,249	5,678,119	5,701,260	5,723,858	5,745,910

Table 8 Continued

	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
1-4 Years	310,677	311,370	312,490	313,708	314,923	316,232	317,520	318,740	319,780	320,608
5-9 Years	315,595	314,023	312,964	312,446	312,285	312,519	313,225	314,355	315,581	316,801
10-14 Years	334,982	330,313	326,156	322,698	319,919	317,778	316,199	315,133	314,608	314,439
15-19 Years	353,368	349,838	345,820	341,380	336,883	332,344	327,767	323,697	320,319	317,614
20-24 Years	352,552	352,097	350,729	348,609	345,963	342,916	339,587	335,795	331,601	327,350
25-29 Years	335,988	339,711	342,819	345,215	346,685	347,187	346,770	345,462	343,417	340,860
30-34 Years	315,401	320,181	327,354	329,758	332,833	338,619	342,311	345,363	347,689	349,080
35-39 Years	317,162	316,633	313,512	315,617	317,165	317,780	322,541	329,693	332,033	335,046
40-44 Years	332,308	322,822	317,899	316,468	318,101	319,245	318,663	315,456	317,502	318,987
45-49 Years	369,202	365,885	359,121	350,002	341,757	332,828	323,350	318,428	316,988	318,603
50-54 Years	423,243	406,770	394,241	382,618	374,084	366,932	363,700	357,045	348,039	339,900
55-59 Years	434,705	443,736	446,252	444,884	434,646	418,857	402,670	390,376	378,980	370,623
60-64 Years	391,168	395,506	401,262	407,013	416,364	427,612	436,688	439,340	438,176	428,254
65-69 Years	335,331	345,214	355,205	366,439	373,616	380,636	385,093	390,960	396,840	406,235
70-74 Years	280,054	288,175	296,811	303,612	312,451	320,798	330,618	340,553	351,681	358,925
75+ Years	565,619	586,023	606,000	627,821	649,506	673,162	696,460	719,919	743,417	768,814
Total	5,767,356	5,788,298	5,808,634	5,828,288	5,847,180	5,865,447	5,883,162	5,900,313	5,916,652	5,932,141

Table 8 Continued

	2045	2046	2047	2048	2049	2050
1-4 Years	321,178	321,376	321,154	320,613	319,762	318,531
5-9 Years	318,113	319,401	320,621	321,659	322,485	323,053
10-14 Years	314,664	315,363	316,490	317,712	318,929	320,239
15-19 Years	315,538	314,012	312,989	312,502	312,364	312,611
20-24 Years	323,055	318,716	314,864	311,676	309,131	307,183
25-29 Years	337,911	334,678	330,992	326,907	322,767	318,580
30-34 Years	349,502	349,007	347,621	345,502	342,881	339,880
35-39 Years	340,790	344,433	347,437	349,716	351,068	351,458
40-44 Years	319,537	324,262	331,393	333,693	336,681	342,424
45-49 Years	319,721	319,109	315,877	317,935	319,433	319,983
50-54 Years	331,080	321,720	316,889	315,524	317,195	318,367
55-59 Years	363,645	360,542	354,048	345,211	337,226	328,561
60-64 Years	412,883	397,100	385,137	374,060	365,955	359,215
65-69 Years	417,506	426,624	429,435	428,527	419,016	404,226
70-74 Years	366,021	370,641	376,641	382,662	392,085	403,334
75+ Years	795,751	823,691	852,002	881,552	909,210	938,195
Total	5,946,894	5,960,675	5,973,589	5,985,451	5,996,189	6,005,840

Table 9		NCB Labour Force Projections							
	2005	2006	2007	2008	2009	2010	2011	2012	
15-19	83,861	84,499	84,306	83,608	83,086	82,410	81,571	81,758	
20-24	255,393	250,032	246,690	243,589	242,320	241,766	243,836	242,975	
25-34	580,120	600,797	618,133	632,749	643,700	651,874	658,061	660,682	
35-44	478,541	499,749	522,199	544,538	566,059	587,583	608,973	631,080	
45-54	385,808	398,207	410,702	424,073	438,818	454,915	472,638	489,462	
55-59	134,969	138,490	141,287	144,625	147,439	151,109	153,984	157,973	
60-64	74,528	78,970	83,735	87,970	91,660	94,959	97,025	98,489	
65+	36,943	37,747	38,685	39,842	41,127	42,518	44,166	45,960	
Total	2,030,162	2,088,490	2,145,736	2,200,996	2,254,208	2,307,133	2,360,253	2,408,380	
	2013	2014	2015	2016	2017	2018	2019	2020	
15-19	82,722	84,461	86,039	87,157	87,210	88,821	90,314	91,563	
20-24	240,100	237,365	233,849	229,669	228,003	228,974	232,336	235,470	
25-34	659,302	652,202	640,239	630,375	618,697	605,729	595,897	586,436	
35-44	654,342	676,935	701,472	718,068	728,531	736,080	739,746	740,623	
45-54	506,123	525,342	545,518	561,785	578,308	594,189	608,376	622,038	
55-59	161,284	165,106	168,767	174,366	178,664	184,252	190,312	197,509	
60-64	100,280	101,694	103,674	104,992	107,079	108,682	110,686	112,571	
65+	47,849	49,710	51,568	53,440	55,309	57,329	59,258	61,293	
Total	2,452,002	2,492,815	2,531,125	2,559,852	2,581,800	2,604,055	2,626,925	2,647,504	

Table 10		Percentage of workers in each town by distance travelled to work - 1996																	
	Total	0 miles	1 mile	2 miles	3 miles	4 miles	5-9 miles	10-14 miles	15 miles and over	1996	Total	0 miles	1 mile	2 miles	3 miles	4 miles	5-9 miles	10-14 miles	15 miles and over
Balbriggan	100	6	17	4	3	3	6	15	46	Carlow	100	10	45	21	4	1	3	5	12
Greystones	100	7	9	3	3	4	16	14	46	Thurles	100	8	56	13	2	1	5	5	11
Maynooth	100	4	14	4	5	7	9	14	44	Dungarvan	100	8	53	15	5	2	3	2	11
Rush	100	7	10	4	2	3	14	17	44	Killarney	100	12	44	18	7	3	3	3	11
Naas	100	5	21	10	4	1	9	9	40	Limerick City	100	6	23	19	17	9	11	4	10
Wicklow	100	9	34	7	3	2	4	6	35	Enniscorthy	100	13	42	15	5	1	4	9	10
Tuam	100	10	40	11	3	1	3	2	30	Letterkenny	100	10	43	18	8	2	3	7	10
Celbridge	100	4	11	3	2	5	14	36	25	Portmarnock	100	4	5	3	5	5	34	34	10
Navan (An Uaimh)	100	7	31	19	6	2	5	5	25	Cavan	100	10	44	23	5	1	3	3	10
Cobh	100	7	32	12	4	2	7	12	24	Castlebar	100	8	59	13	3	1	2	5	9
Mallow	100	9	38	17	5	2	4	2	22	Longford	100	13	46	14	4	1	6	5	9
Ennis	100	8	30	15	6	2	4	14	22	Ballina	100	9	47	18	4	1	8	3	9
Towns with population 1,500 - 2,999	100	12	32	6	3	3	13	10	21	Kilkenny	100	8	44	23	7	1	2	6	9
Youghal	100	12	44	17	3	1	2	1	21	Aggregate Town Area	100	6	22	14	11	8	22	9	9
Drogheda	100	7	37	19	7	2	6	3	20	Dundalk	100	6	33	26	14	5	4	3	8
Droichead Nua	100	6	31	10	9	5	16	4	20	Tralee	100	10	50	23	4	1	2	2	8
Towns with population 3,000 - 4,999	100	10	35	8	3	2	10	11	20	Shannon	100	6	35	25	13	3	4	6	8
Aggregate Rural Area	100	23	8	6	7	5	21	14	18	Clonmel	100	9	40	24	7	2	4	6	8
Carrick-on-Suir	100	11	34	6	4	3	8	15	18	Carrigaline	100	7	12	4	5	5	40	18	8
New Ross	100	14	43	12	3	1	3	5	18	Athlone	100	9	34	26	13	4	5	2	8
Midleton	100	9	33	7	2	2	11	18	18	Towns with population 5,000 and over	100	6	21	15	12	8	23	8	8
Arklow	100	8	45	14	5	2	4	6	17	Monaghan	100	8	48	20	6	1	7	4	7
Athy	100	5	47	15	2	1	4	8	16	Tramore	100	7	16	3	1	1	50	17	7
Portlaoighise	100	7	46	17	3	1	7	4	16	Wexford	100	9	52	18	5	2	2	5	6
Mullingar	100	8	42	22	5	2	3	4	15	Cork City	100	6	19	18	16	10	21	5	5
Nenagh	100	13	52	13	2	1	3	2	14	Galway City	100	8	30	24	16	7	8	2	5
Bray	100	5	22	11	4	2	16	25	14	Sligo	100	8	45	25	8	3	4	2	5
Leixlip	100	4	11	6	4	4	16	41	13	Greater Dublin Area	100	4	13	12	14	11	33	9	4
Tullamore	100	7	53	17	3	1	4	3	13	Waterford City	100	7	34	25	17	6	6	1	3
Ballinasloe	100	12	43	22	6	0	2	2	13										
State	100	13	16	11	9	7	21	11	13										

Source: Central Statistics Office

Table 11	Percentage of workers in each town by distance travelled to work - 2002																
	Total	0 miles	1 mile	2 miles	3 to 4 miles	5 to 9 miles	10 to 14 miles	Over 15 miles	2002	Total	0 miles	1 mile	2 miles	3 to 4 miles	5 to 9 miles	10 to 14 miles	Over 15 miles
Skerries	100.0	2	10	2	4	7	15	60	Nenagh	100.0	4	48	14	5	4	3	21
Laytown-Bettystown-Mornington	100.0	3	5	3	6	21	5	58	Tullamore	100.0	3	43	19	6	7	3	20
Balbriggan	100.0	2	15	4	4	6	15	54	State	100.0	5	15	10	15	22	13	20
Navan (An Uaimh)	100.0	2	19	13	7	4	5	49	Thurles	100.0	5	42	12	5	9	7	20
Wicklow	100.0	3	25	8	4	6	6	48	Leixlip	100.0	2	9	6	7	17	40	19
Trim	100.0	3	22	4	2	14	8	47	Dunboyne	100.0	2	7	4	7	22	40	18
Maynooth	100.0	2	12	4	8	13	15	47	Buncrana	100.0	4	43	14	6	5	10	18
Rush	100.0	3	9	4	5	13	19	46	Bray	100.0	2	18	11	7	19	24	18
Greystones	100.0	4	9	3	7	16	14	46	Dungarvan	100.0	3	47	17	8	5	3	18
Naas	100.0	2	18	10	5	10	10	45	Longford	100.0	4	41	17	6	8	6	18
Tuam	100.0	3	34	13	4	4	2	40	Castlebar	100.0	2	45	19	6	4	7	16
Ashbourne	100.0	2	11	4	3	7	33	39	Cavan	100.0	2	35	25	12	6	4	16
Athy	100.0	4	35	11	3	4	7	38	Dundalk	100.0	2	29	23	20	6	4	16
Drogheda	100.0	2	26	16	8	6	4	37	Killarney	100.0	5	40	20	11	5	4	16
Bandon	100.0	4	30	9	8	7	6	36	Malahide	100.0	3	6	4	9	30	34	15
Cobh	100.0	2	23	8	5	11	15	36	Aggregate Town Area	100.0	2	20	13	17	22	11	15
Kildare	100.0	1	20	8	9	18	8	36	Kilkenny	100.0	3	37	23	10	4	7	15
Mallow	100.0	3	29	17	9	6	2	35	Ballina	100.0	3	43	20	8	7	4	14
Droichead Nua	100.0	2	25	10	9	14	6	35	Clonmel	100.0	3	36	23	10	6	8	14
New Ross	100.0	3	38	10	4	4	7	34	Letterkenny	100.0	3	38	23	14	5	5	14
Youghal	100.0	4	39	16	4	3	2	33	Portmarnock	100.0	3	6	3	9	30	35	13
Midleton	100.0	2	24	7	5	10	18	33	Towns with population 5,000 and over	100.0	2	19	14	19	22	11	13
Arklow	100.0	3	34	14	6	4	6	33	Wexford	100.0	3	44	18	10	6	6	13
Towns with population 3,000 - 4,999	100.0	4	27	7	5	12	12	33	Limerick City	100.0	2	21	19	26	14	5	13
Carrick-on-Suir	100.0	3	31	5	6	7	17	31	Tralee	100.0	3	43	26	9	3	3	13
Gorey	100.0	4	37	7	5	7	11	30	Athlone	100.0	3	30	24	20	8	3	12
Towns 5,000 - 9,999 population	100.0	3	28	11	6	10	11	30	Swords	100.0	2	13	9	13	26	26	12
Towns with population 1,500 - 2,999	100.0	5	26	6	6	14	14	29	Carrigaline	100.0	2	10	4	9	37	25	12
Celbridge	100.0	2	9	3	7	16	33	29	Monaghan	100.0	3	46	16	9	10	5	12
Aggregate Rural Area	100.0	10	8	5	11	22	15	29	Shannon	100.0	2	31	27	19	5	6	10
Carlow	100.0	3	31	19	8	4	6	28	Westport	100.0	5	48	15	5	5	13	9
Portlaoighise	100.0	2	34	18	6	6	4	28	Tramore	100.0	2	16	4	2	49	19	8
Ennis	100.0	3	26	16	8	5	13	28	Sligo	100.0	2	43	27	12	6	2	8
Mullingar	100.0	3	34	20	8	4	4	28	Cork City	100.0	2	17	16	25	25	8	8
Ballinasloe	100.0	4	35	22	8	4	3	25	Galway City	100.0	2	26	22	27	14	3	7
Towns 10,000 population and over	100.0	2	26	15	10	11	12	24	Greater Dublin Area	100.0	2	13	13	23	32	11	6
Enniscorthy	100.0	4	39	14	6	5	11	22	Waterford City	100.0	2	29	25	28	9	2	5

Source: Central Statistics Office

Table 12		Rates of Car Ownership per 1000 Population - sorted in descending order by county		
	1996		2002	Annual % Change 96-02
Dublin city	224	Dublin city	270	3.1
Cork City	253	Cork City	305	3.1
Limerick City	206	Limerick City	268	4.5
Waterford City	399	Waterford City	312	-4.0
Galway city	241	Galway city	311	4.4
Total Cities	239	Total Cities	281	2.8
Cork County	337	Meath	428	4.2
Meath	334	Cork County	427	4.0
Dublin County	332	Limerick County	408	3.7
Limerick County	327	Kildare	407	5.5
Tipperary, N.R.	315	Waterford Co	407	13.3
Roscommon	315	Leitrim	403	4.5
Kilkenny	311	Wicklow	398	4.4
Cavan	311	Roscommon	398	4.0
Leitrim	309	Dublin County	397	3.0
Wicklow	308	Clare	395	4.5
Clare	303	Kilkenny	393	4.0
Monaghan	302	Tipperary, N.R.	391	3.6
Tipperary, S.R.	299	Wexford	391	4.6
Laoighis	299	Galway County	386	4.9
Longford	299	Cavan	385	3.6
Wexford	298	Laoighis	383	4.2
Westmeath	295	Monaghan	381	4.0
Kildare	295	Westmeath	378	4.2
Galway County	289	Tipperary, S.R.	376	3.9
Carlow	287	Offaly	374	4.5
Offaly	287	Sligo	372	4.5
Sligo	286	Carlow	372	4.4
Kerry	282	Longford	370	3.6
Mayo	277	Mayo	368	4.9
Louth	268	Kerry	365	4.4
Donegal	252	Louth	344	4.3
Waterford Co	192	Donegal	342	5.2
Total counties	306	Total counties	392	4.2

Source: Central Statistics Office



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Dermot O'Brien has worked with NCB Stockbrokers since 1987. As Chief Economist, he is responsible for the forecasting and analysis of the Irish and major international economies with a particular focus on the implications for financial markets.

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Acknowledgements

NCB wishes to acknowledge the Central Statistics Office as the source of the population and other Irish economic data quoted in this report. NCB gratefully acknowledges the assistance of the CSO in the provision of detailed tables from the Household Budget Survey and special tabulations from the 2002 Census.

The authors wish to acknowledge the invaluable assistance of colleagues in NCB who read the report in draft. They wish to acknowledge and thank especially their colleague Deirdre Meehan who was primarily responsible for the design and production of this report and without whose calm efficiency it would not have been accomplished.



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