

**MIGRATION AND THE IRISH
LABOUR MARKET**

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Introduction

When Ireland became independent in 1922 it still remained part of a common British Isles labour market with no restriction on movement between the two jurisdictions. With the exception of the years of the Second World War, this was to remain the case (for Irish citizens) right up to the present. By contrast, from the end of the 1920s tariffs were introduced in Ireland (and the UK) so that by the mid 1930s the goods market was subject to very considerable restrictions. The exceptionally high tariff barriers remained in place until the end of the 1950s, unlike the situation in most other European countries where trade barriers were rapidly reduced in the immediate post-war years. This combination of an open labour market and a closed goods market over a sustained period was most unusual in Europe.

In the second half of the 20th century Ireland is also unusual in Europe in the extent of outward labour mobility. For most other EU members in the last 30 years there has been little movement of their native population to seek work elsewhere in the EU. Instead most member states have seen substantial net immigration over this period from outside the EU. This lack of labour mobility between EU member states contrasts with the United States where there is considerable movement of working age population from one region to another, making the United States a truly common labour market. Borjas, Freeman, and Katz, 1997, show that this mobility of labour within the US has been a factor ensuring that local concentration of immigrants in particular states have not had a direct impact on the local labour market.²

Migration in Ireland has been a two way process with periods of extensive net emigration being followed by periods of extensive net immigration. The data also indicate that each year the gross flows of emigrants and immigrants have been very large in both directions so that the country simultaneously experiences substantial emigration and substantial immigration. It is estimated by Hannan, Sexton, and Walsh, 1991, that in the 1970s when gross inward migration amounted to nearly 270,000 there was still a sizeable gross outward flow of about 165,000. In the period 1992 to 1997 gross emigration each year averaged 0.9% of the population while gross immigration (primarily returning emigrants) has averaged 1.0% of the population. Generally young people leave in their late teens or early 20s and the returning emigrants are in their late 20s or 30s, often accompanied by young children. Cheaper travel costs and the gradual convergence of Irish living standards with our EU (especially the UK) neighbours has meant that the migration decision is no longer irreversible. Given reasonable employment prospects, Ireland is the preferred final location for former emigrants to spend the bulk of their working lives.

The economic implications of emigration have received much attention from Irish economists over the last 70 years. Geary in 1935 considered this issue in some detail, in particular considering the factors that drove emigration. (As part of this discussion he also considered the possible impact on the United

² Though immigration has had an impact on the unskilled wage rate at a national level.

States of changes in immigration policy.) However, there was somewhat less attention given to the potential impact of emigration specifically on the Irish labour market. Walsh, 1968, reviewed the factors driving Irish emigration, as well as discussing some of the wider implications for the economy, but many of the studies in the 1970s and the 1980s concentrated on modelling the migration decision on its own. In a series of recent papers O'Rourke and Williamson, 1995, modelled the effects of migration in the late 19th century and the early 20th century on the Irish (and other) economies.

In this paper we first consider the nature of the migration: who the migrants were, where they went? We then discuss the factors that drove this movement in the past and which continue to drive the substantial movement of population that is still continuing today. The model, which we derive, is then estimated using data from the post-war period. Finally, we consider the implications of these results for the labour market today.

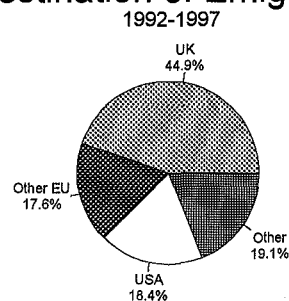
The Data

The History of Migration in Ireland

Going back to the 18th century, the tradition of emigration has been a continuing feature of the lives of all of the Irish population, rich and poor. It had a particularly important impact on the economy in the 19th century and the despair and the tragedy that it symbolised is still deeply ingrained in the public imagination. This importance is illustrated by recent research that examines the convergence in wage rates and living standards between the Irish and the British economies over the second half of the 19th century and the early years of the 20th century. O'Rourke and Williamson, 1995, show that migration, by reducing the supply of labour in Ireland and increasing it in Britain, played a key role in promoting this convergence.

Figure 1

Destination of Emigrants



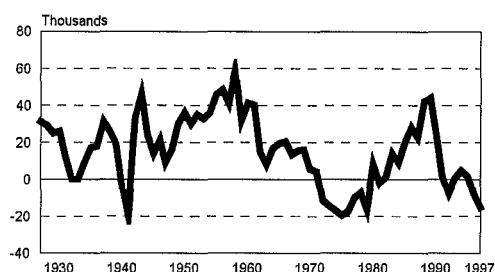
Source: CSO Population and Migration Estimates

In the years since independence in 1922 emigration has been a continuing fact of life in Ireland. Up to the 1930s a relatively high proportion of those who left went to the United States. However, in the 1930s the balance shifted (due to restrictions on US immigration) with the bulk of those leaving going to England and Scotland (Freeman, 1938-39 and Commission on Emigration, 1954). The destination of

emigrants in more recent years has seen further changes with a growing number going to other EU countries outside these islands (Figure 1).

Figure 2

Net Emigration

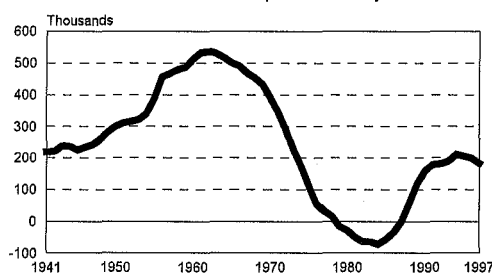


Emigration reached a post-independence peak in the 1950s (Figure 2) with the number going in 1958 being roughly equal to the number of births in that year. In the 1960s the numbers leaving fell quite rapidly so that by the early 1970s there was net immigration. The net flows hid a continuing gross outward flow of young labour market entrants, which was counterbalanced by a larger inflow, many of whom were emigrants of the 1950s. This pattern repeated itself in the 1980s when emigration again reached very high levels in 1988 and 1989, only to be followed by net immigration in the 1990s.

Figure 3

Net Emigration

Cumulative Total for previous 15 years

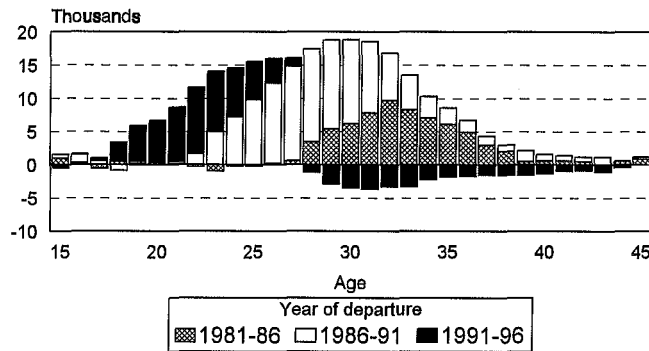


In Figure 3 we give a rough estimate of the stock of recent emigrants who left in the previous 15 years obtained by cumulating the net migration flows over the previous 15 years.³ This measure of the stock peaked at over 500,000 in the early 1960s and it fell to zero by the end of the 1970s. The emigration of the 1980s resulted by 1996 in a stock of around 200,000 emigrants living abroad.

³ Because there are substantial gross flows of migrants simultaneously in both directions, this is only a crude measure of the stock of emigrants abroad. In addition, while most emigrants are in their late teens or early 20s, a significant number of immigrants are the young children of former emigrants, further complicating the calculations

Figure 4

Stock of Emigrants, 1996 by age and year of departure



Source: Census of Ireland

A more detailed analysis was also carried out using the census data for each five-year period. When allowance is made for the small number of deaths, which can be expected in the population under 40, it is possible to derive an estimate of the net migration for each cohort by single year of age within each intercensal period (Figure 4). This crude estimate takes no account of gross immigration by non-Irish citizens which has been significant in the 1990s (Barrett and Trace, 1998). This means that the estimate of the stock of emigrants aged 15 to 40 living abroad, derived from this source, will be somewhat of an underestimate. While crude, these two independent methods of estimating the stock of emigrants aged under 40 living abroad in 1996 suggest figures of something over 200,000. Figure 4 shows that in 1996 the largest single cohort of emigrants living abroad were in their late 20s or early 30s, having emigrated in the late 1980s. The stock of migrants from the early 1980s was much smaller, either because the gross outflow in those years was smaller or because they had returned by 1996.

Figure 5

Education of Emigrants

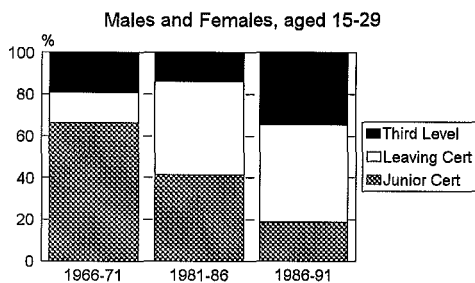
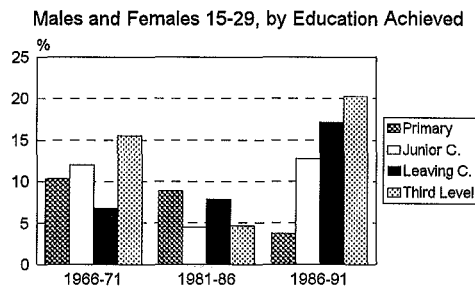


Figure 6

Proportion of Cohort Emigrating



Who Are the Migrants?

Traditionally those who emigrated were predominantly unskilled, many of them from an agricultural background. This continued to be the case until very recent times. Analysis of those who emigrated

during the war years showed that two thirds of them were labourers (Commission on Emigration, 1954). Set out in Figures 5 and 6 is an analysis of net emigration, classified by educational attainment, for selected years since 1966.⁴

In the late 1960s almost two thirds of emigrants had only a Junior (inter) Certificate level of education (Figure 5). The proportion with third level education was under 20%. By the early 1980s the balance between those with leaving certificates and those with lower (or no) qualifications had shifted but the proportion of emigrants with third level qualifications had actually fallen. The second half of the 1980s saw a big change in the educational attainment of the emigrants. Around a third of the emigrants had a third level education in the late 1980s compared to under 20% in the 1960s and in the late 1980s there was very little emigration by people with only a primary education, whereas they accounted for the bulk of emigrants in the 1960s.

Figure 7

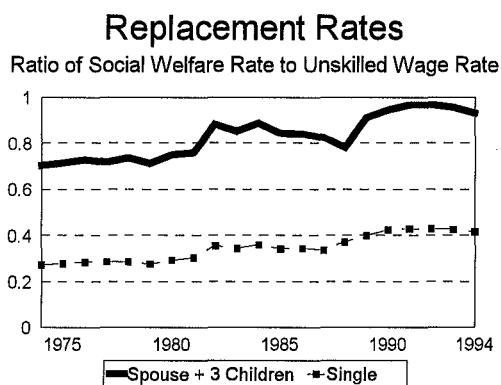


Figure 6 shows that the proportion of those getting third level qualifications that emigrated was already high in the late 1960s. By the late 1980s the proportion of the much larger cohort of 15 to 29 year olds with third level qualifications emigrating exceeded 20%. Barrett and Trace, 1998, use data from a survey of school leavers to show that the proportion emigrating peaked at 25% or more of graduates in the years 1987-89. Only a tiny proportion of those with only primary education emigrated permanently in the late 1980s.⁵ This reversed the position that had pertained since the last century.

⁴ This analysis is carried out by examining what proportion of each cohort at one census is still in the country at the time of the next census (but 5 years older). Some estimation is necessary to arrive at the likely final level of educational attainment of those still in the educational system at each census. This approximation was done by assuming that the proportion of each cohort (by single year of age) still in school in a census year who would be still in school one year later was the same as that for the next cohort (by age) in the census year. This analysis is likely to underestimate the final educational level attained. As a result, the Figure, if anything slightly underestimates the proportion of emigrants who had a leaving certificate or third level education.

⁵ Garvey and McGuire, 1989, and Hannan, Sexton and Walsh, 1991, discuss how some of the least qualified emigrants did badly on emigration and were forced to return relatively quickly.

Part of the reason for this change in pattern lies with changes in the social welfare systems in Ireland and the UK. In the 1950s, at a time when the UK had developed a sophisticated social welfare safety net, no such protection was available in Ireland. As a result, unskilled labour in Ireland faced a choice between emigration to the UK, generally to take up employment there, or employment at any price in Ireland. However, over the period from 1960 to the early 1980s there were substantial improvements in the rates of social welfare payments in Ireland (Figure 7).⁶ By the early 1980s the rate of social welfare payments effectively set a minimum wage. However, the ultimate effect on numbers unemployed in the 1970s was probably small; the social welfare system in the UK was more attractive than that in Ireland and rates of pay for unskilled labour in the UK exceeded those in Ireland making emigration a feasible option. Over the course of the 1980s, as the Irish social welfare system was further improved, it became more attractive to be unemployed in Ireland than unemployed in the UK. In addition, there was a rapid rise in unemployment in the UK, especially among unskilled, which had a knock on effect in Ireland. Finally, the rates of pay for unskilled labour in Ireland approached, and in some cases exceeded, those in the UK. Hannan, Sexton and Walsh, 1991, show that unskilled emigrants faced major difficulties in the UK labour market in the late 1980s, difficulties they would not have faced in earlier periods. This contrasts with the earlier generation in the 1950s who faced very difficult circumstances at home and who could generally improve their living standard by leaving.

Figure 8

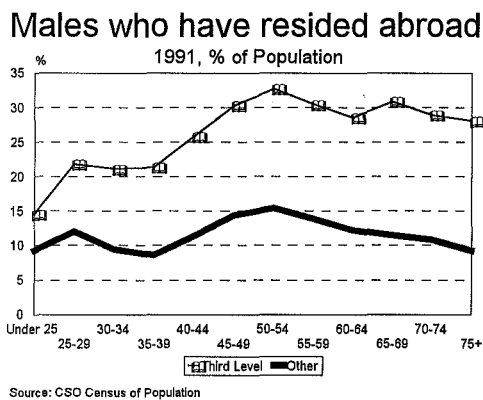
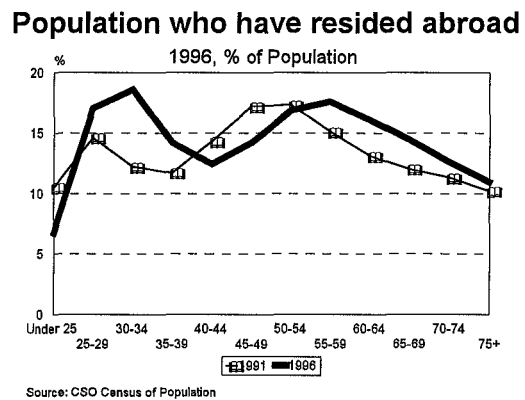


Figure 9



While those with a good education are now more likely to emigrate than those with only a primary education, they are also more likely to come back. As shown in Figure 8, in 1991 over a quarter of all those over 40 (males and females) with a third level education had lived abroad for at least a year. For all other educational categories the proportion was 10 or 15%. While the latter figure is exceptionally high by the standards of other EU countries, it still suggests a much lower return rate than for those with third level education. It means that even in the face of continuing substantial gross outflows, the fact that individuals return with additional experience from working abroad may actually enhance the

⁶ The unskilled wage rate is defined here as the wage rate in the clothing sector, a sector where the bulk of those working have limited educational attainment.

return from education. Barrett and Trace, 1998, show that for those who returned to Ireland in the year ended April 1996, aged 25 to 29, 57% of them had third level education and for the 30 to 39 cohort almost 50% had a third level education. Thus a much higher proportion of those who returned to Ireland in that year had a third level education than was the case for those who emigrated in the late 1980s.⁷

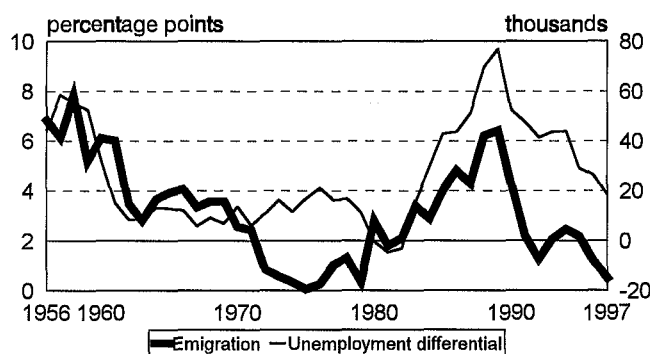
Figure 9 shows the corresponding figures for 1996, though the data are not yet available to break down the population by educational attainment. The increase in the proportion of 30-34 year olds who have lived abroad between 1991 and 1996 clearly reflects the impact of the return of the large numbers who emigrated in the late 1980s. However, as discussed above (Figure 4), there still remains a substantial stock abroad of those who left in the 1980s.

Causes of Emigration

Since mass emigration began from Ireland two hundred years ago the economic factors driving the flows have been fairly clear. Men and women have always found it difficult to leave their home but in spite of this cost (generally substantially greater than the direct travel cost) the greater labour market opportunities elsewhere have proved to be a major attraction. In the post war years the most important factor has been the greater employment opportunities, especially in the United Kingdom. The most obvious indicator of these greater opportunities has been the difference in the unemployment rates in the two jurisdictions. However, many of those who have left in recent years have not been unemployed but have rather seen the possibility to earn substantially more in other countries.

Figure 10

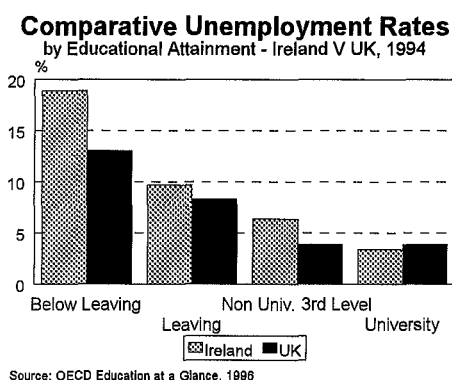
Emigration and Unemployment



⁷ These data include people who have moved frequently in and out of Ireland who may have a different level of educational attainment than the stock of all returned emigrants. In any one year these frequent movers will constitute a much higher share of the recent returned emigrants than they do of all returned emigrants.

A number of studies of the factors driving emigration in Ireland in the post-war period have found that it is significantly affected by the differential in unemployment rates between Ireland and the UK (Walsh, 1967, Honohan, 1992). Honohan found that the equilibrium gap in unemployment rates between Ireland and the UK was around 5 percentage points; at that difference in unemployment rates there would be no net flow of migrants out of (or into) the country. Figure 10 shows both emigration in recent years (left scale) and the actual gap in unemployment rates between Ireland and the UK (right scale), which reached a peak in the late 1980s, around the time that the latest bout of emigration was at its maximum.

Figure 11



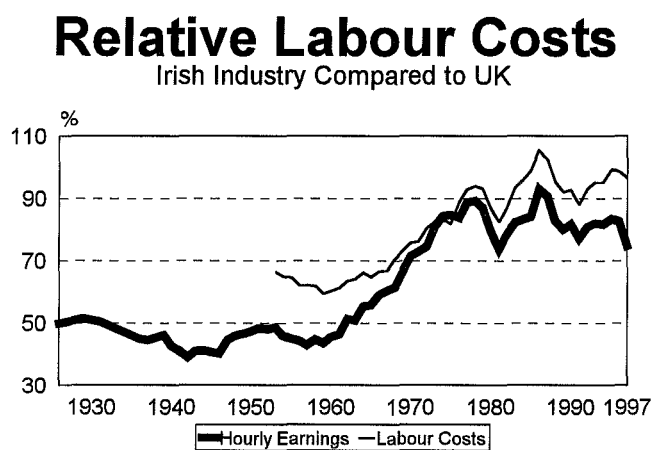
Looking to the future there must be some doubt about the stability of the relationship which held in the past where the Irish unemployment rate was 4 or 5 percentage points above the UK rate in equilibrium. Figure 11 compares Irish and UK unemployment rates for 1994 by educational attainment. It shows that for those with at least a Leaving Certificate, the gap in unemployment rates in 1994 was less than 4 percentage points and unemployment rates were lower in Ireland for graduates. With the proportion of the population who have reached at least Leaving Certificate standard of education continuing to rise, the result may be a reduction in the potential gap between unemployment rates in Ireland and the UK. Experience indicates that young skilled workers will not remain in Ireland unemployed, preferring to emigrate instead.

The change from unskilled emigration to skilled emigration may render the unemployment rate a less reliable indicator of the attractiveness of moving. It is only if the unemployment rate continues to reflect tensions in the market for skilled labour that it will be a good predictor of future migration. The improved educational attainment of the labour force appears to have made individuals more mobile, increasing the elasticity of labour supply. In addition, in recent years when there has been significant immigration, some of those entering the Irish labour market were not returning Irish citizens. Instead a significant minority were skilled workers from other EU countries and the factors driving their entry into the Irish labour market may well prove different from those that drove migration by Irish citizens in the past.

Migration and the Labour Market

As discussed above migration decisions are clearly affected by the relative economic circumstances in Ireland and the potential destination for emigrants, generally the UK. However, large-scale migration can also have a major impact on the labour market. The work of O'Rourke and Williamson, 1995, indicates that the huge migration from Ireland to the UK in the latter half of the 19th century affected wage rates in both jurisdictions. What has been the impact of the post-war migration?

Figure 12



So far the evidence is limited on the impact of the more recent migration on the Irish labour market. As shown in Figure 12, wage rates appear to have fallen compared to the UK at the beginning of the 1930s, when protection was introduced. The impact of the war, with a tightening of the labour market in the UK and restrictions on migration, led to an albeit temporary further fall to around 40% of those in the UK.⁸ They remained in the range 40% to 50% of the UK level until 1960.

Between 1960 and the late 1970s there was a very sharp rise in wage rates in Ireland relative to those in the United Kingdom. However, from the end of the 1970s wage rates in Ireland fluctuated around 80% to 90% of the UK level. The fluctuations around this trend were largely due to changes in the bilateral exchange rate rather than to changes in the rate of growth of wage rates from one year to the next.

The timing and pattern of the convergence of Irish wage rates to UK wage rates over the last 40 years raises a number of interesting questions about the Irish labour market. What are the economic forces that explain the convergence? What economic mechanisms could have given rise to the process and how can the timing of the convergence throw light on the underlying factors?

⁸ The first series in Figure 12 compares hourly wage rates in Ireland with those in the UK. This takes no account of labour taxes on employers and other costs of employment. This is the series used later in the paper when estimating a model of migration. The second series takes account of differences in non-wage labour costs by using national accounting series for the wage bill (divided by employment).

On the supply side there has been free movement of labour over a very long period so, on its own, it can not explain the convergence in factor prices. However, if the costs of migration had changed over time this factor could have resulted in a shift in the equilibrium gap in unemployment rates (or expected earnings) between Ireland and the UK.⁹ Falling travel and communications costs have undoubtedly made the decision to emigrate much less traumatic than in the era of the "American wake". In addition, the falling cost of labour mobility has made possible the situation where much of the emigration since 1960 has been temporary in character.

If the explanation for the convergence lay in reduced costs of migration it should be evident in the modelling of the migration decision or, equivalently, of the equilibrium difference in unemployment rates (Honohan, 1992). However, because of the restricted data sample, the study described later in this paper, can not test this hypothesis.

A second possible supply side explanation for the convergence is the effect of the opening up of the economy and society to the outside world from the late 1950s onwards, typified by EU entry in 1973. In earlier decades expectations in Ireland were much lower relative to those in the UK reflecting, among other things, a more closed society. The opening up of the economy, the impact of radio and television and foreign travel, may all have served to raise expectations of the labour force. If they could not get a satisfactory standard of living at home they had the option of moving.¹⁰

A third supply side factor might be the investment in human capital resulting in rising earnings per person. However, the investment began in the late 1960s, long after the convergence in wage rates had begun, and its full effects on the labour market are only maturing in the 1990s. As a result, the timing of this factor tends to rule it out as a major force in the convergence process.

The opening up of the goods market post 1960 provides a fourth possible mechanism whereby the convergence in wage rates took place. The rapid growth in wage rates in Ireland post 1960, commencing at the same time as the goods market was liberalised, may be a coincidence. However, prior to 1960 Irish firms were producing small production runs for a limited domestic market with a low marginal productivity of labour; the freeing of trade and the introduction of new technology in firms producing for a wider European market greatly increased labour productivity. As a result, foreign firms could afford to pay much higher wage rates than in the past (and higher rates than in existing domestic firms). The resulting upward pressure on wage rates undoubtedly contributed to the demise of much of the traditional manufacturing sector of the 1950s (see Barry and Hannan, 1996).

⁹ The differential in expected earnings between Ireland and the UK at which emigration would be expected to be zero. See Harris and Todaro, 1970, for a model of migration decisions.

¹⁰ Another aspect of this convergence was the development of the Irish social welfare system, from a situation where it was very much inferior to that of the UK in 1960, to one where benefit rates are more generous in Ireland in the 1990s (Callan and Sutherland, 1997).

In examining the factors driving the convergence in wage rates Fitz Gerald, 1998, suggests that probably the single most important explanation for the convergence was the opening up of the goods market from 1960 onwards. Up to that point production for a small domestic market involved short production runs, a lack of competition, and low productivity. With freeing of restrictions on trade there was a gradual growth in the number of (generally) foreign firms producing in Ireland for a wider European market. Bradley and Fitz Gerald, 1988, model the decision on the share of world output produced in Ireland as a function of Ireland's competitiveness compared to competing locations, especially compared to the UK. In such a model the UK wage rate appears in firms' demand for labour function, with firms choosing Ireland as a location while Irish labour costs were lower than the UK – gradually bidding up wage rates in Ireland.

However, the free movement of labour has undoubtedly also played a significant role in the process. In particular, expectations of wage earners were affected, both directly through migration, and indirectly through hearsay concerning the UK labour market.

To determine more precisely the role of the different factors will require further research using a more fully specified model of the economy.

Modelling the Process of Migration

The discussion above highlights the openness of the Irish labour market via the migration mechanism and, in particular, its integration with the UK labour market. Indeed Krugman (1997) has recently argued that the Irish economy is best characterised as a regional economy because of the openness of its labour market. Several empirical studies of net migration dating back to the 1970s have attempted to estimate the extent of this integration between the Irish and UK labour markets (see Barrett (1998) and O'Grada and Walsh (1994) for an overview of these studies) using a simple model of net migration. In these models the decision to migrate is, *ceteris paribus*, driven by relative employment prospects in the two economies and the relative return to employment. All of these studies revealed that there are significant links between net migration and changes in both relative employment and relative wages variables, however there was strong evidence of out-of-sample parameter instability.

This instability is not surprising. Firstly the model implicitly assumes that all migration is to the UK. This assumption is likely to be most problematic for the period of the early 1980s when only 60% of all emigration was to the UK with 14% going to the USA¹¹. Secondly it assumes that the characteristics of the average migrant have not altered over our sample period. However, as detailed earlier in this paper, both the educational profile and to a lesser extent the sex composition of emigrants altered in the period from the 1950s to the 1980s. In particular there was a sharp increase in the proportion of emigrants with third level education in the 1980s. Thirdly the model does not include any demographic variables

¹¹ More recent estimates indicate that the share of migrants going to the UK has fallen to 45% of the total (Figure 5).

(e.g. the natural increase in the population, the fertility rate) which determine the absolute stock of potential emigrants at any given point in time. Fourthly the model does not allow for the fact that the migration decision, and especially return migration, is likely to have been significantly affected by the falling real cost of international transport over our sample period. And finally there are difficulties in the data used in estimation. Net migration flows relate to the year beginning in April while unemployment and wage data refer to the calendar year, and there are frequently very large revisions in the net migration data particularly at the time new Census data become available.

In Kearney (1998) we estimate this basic model over the post-war period, specifically 1951-1995. In contrast to previous studies we do not impose a dynamic structure. Instead we embed this basic equation within a general dynamic framework and test from this general model to find a more parsimonious specification that is congruent with the data. Because of a history of instability in net migration equations we also test for evidence of parameter instability.

Based on this simple model our general equation specifies that net migration is driven by two measures of labour market conditions, the relative wage gap between Ireland and the UK and the probability of finding employment in Ireland relative to the UK. We specify a simple linear single equation model where net migration is modelled as a function of relative employment and relative wages.

$$NMA_t = m_0 + m_1 relemp_t + m_w relw_t$$

Our preferred equation models net migration in the current year as a function of relative wages (*relw*) and relative employment (*relemp*) in Ireland and the UK in the previous year. We identify two sub-periods that fully parameterise the instability detected over the full sample. In the sub-period 1978-1989 (*s1978*) the average propensity to migrate rose while in the more recent sub-period, 1990-1995 (*s1990*), the average propensity to migrate fell.

$$NMA = + 800.6 - 730.8 relemp(-1) - 134.4 relw(-1) + 21.95 s1978 - 35.1 s1990$$

(101.7) (105.5) (9.0) (3.6) (5.4)

This estimated equation is in the form of a leading indicator model. Net migration in the current year is determined by relative wages and relative employment in the previous year. This formulation allows for no feedback from migration to relative wages or relative employment¹². Of course net migration in the current year will feed into the size of the current year's labour force and hence the relative employment variable. However for our purposes this leading indicator formulation, while clearly partial equilibrium in nature, is useful in determining a stable causal link between changes in relative labour market conditions between Ireland and the UK on the one hand and consequent changes in net migration flows on the other.

¹² This is probably capturing the mis-match in the data series. Net migration in the current year refers to migration from April in the previous calendar year to April in the current year while the relative wage and relative employment data refer to the calendar year.

Implications for Labour Market

Figure 13

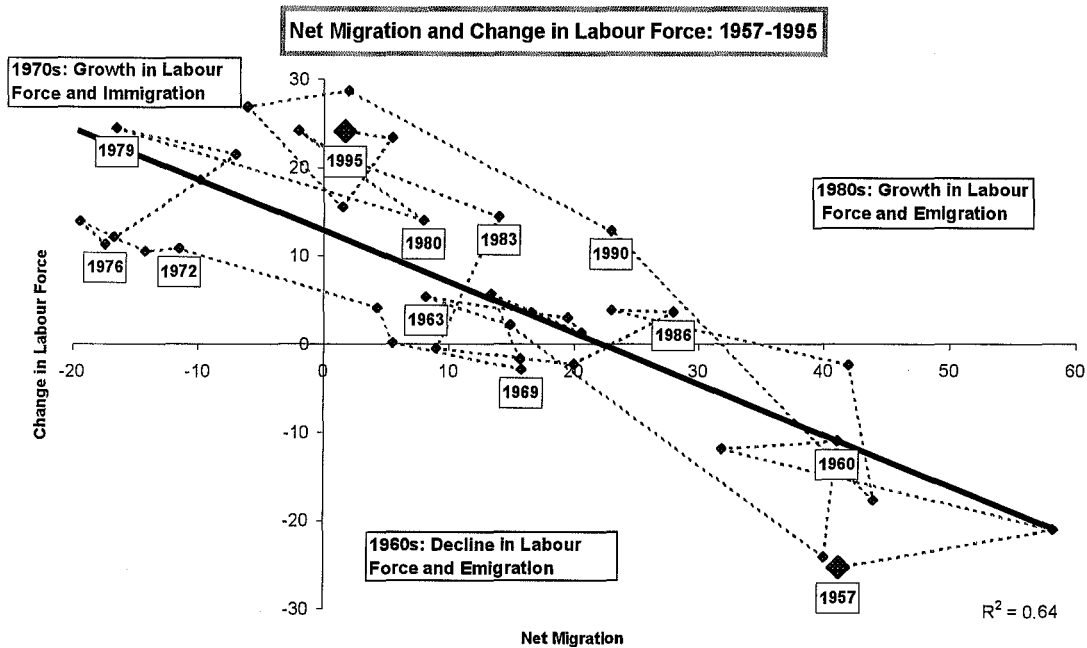


Figure 13 illustrates that there is a strong negative relationship between net migration and changes in the labour force. This relationship is central to our understanding of the determinants of labour supply. A simple linear regression fit to this relationship indicates that a unit increase in net migration is associated with a 0.58 unit decline in the labour force. This high elasticity of labour supply, operating through the migration mechanism, has played a key role in the trade-off between inflation and unemployment in Ireland over the past 30 years.

Changing characteristics of the average migrant and the onset of significant flows of inward migration over the past thirty years make it difficult to model migration behaviour. In our model we identify two structural breaks over the sample - the sub-periods 1978-1989 and 1990-1995. In the first sub-period the average propensity to migrate increases by an annual average of 1.71% of the labour force. In the second sub-period the average propensity to migrate falls by an annual average of 0.96% of the labour force.

In the first sub-period there was a significant increase in average levels of educational attainment among those of working age. This increased the supply of skilled labour to the Irish labour market at a time when the demand for labour was generally low (even though the demand for labour was itself also shifting in favour of more skilled labour, (Kearney, 1997)). This change is reflected in the shift towards more highly educated migrants in this period with a higher average propensity to migrate. During this period there was also a weakening of the migration flows between Ireland and the UK with a significant increase in emigration to the USA in the early 1980s. These changes occurred against a backdrop of a rise in the population in the 25-44 age group.

The fall in the average propensity to migrate in the 1990s is largely due to the significant increase in the demand for labour in recent years. In addition Fahey, Fitz Gerald, and Maitre (1998, p15) argue that the change in educational profile of migrants makes them more likely to return. The dominant outflow of migrants in the 1980s was in the 15-24 age cohort¹³. In the early and mid 1990s these emigrants were still young enough to be highly mobile. However it is also likely that this estimated decline in the average propensity to migrate is capturing a general weakening of the links between the Irish and UK labour markets. In recent years (1994-1997) around 40% of the gross inflow of migrants were non-Irish nationals (Barrett, 1998).

Table 1

<i>Marginal Effect on Net Migration of One Percentage Point Increase In:</i>		
	Irish Unemployment Rate	Relative Irish-UK Wages
1956-1977	7,480	-1,344
1978-1989	7,964	-1,344
1990-1995	7,998	-1,344
1956-1995	7,695	-1,344
<i>% of Actual Labour Force</i>		
1956-1977	0.66%	-0.12%
1978-1989	0.62%	-0.10%
1990-1995	0.59%	-0.10%
1956-1995	0.64%	-0.11%

Table 1 shows the estimated marginal effect on net migration of a one percentage point increase in the Irish unemployment rate, given the *actual* UK unemployment rate in each sub-period. In the period 1951-1977 a one percentage point increase in the Irish unemployment rate would have increased net migration on average by 7,467 migrants. This marginal impact increased in subsequent periods, in 1990-1995 it was close to 8,000. However when we take into account the growth in the labour force¹⁴ between 1951 and 1995 we find that in proportionate terms this marginal effect of the unemployment rate on net migration is declining. In 1951-1977 the increase in migration caused by a one percentage point increase in the unemployment rate was equivalent to 0.66% of the actual labour force. This fell to 0.59% in the later 1990-1995 period.

The marginal effect of relative wages on migration is -134.4. Thus a one percentage point increase in the ratio of Irish wages to UK wages will, other things being equal, cause a fall in net migration of 1,344 which is equivalent to 0.11% of the labour force. The convergence of Irish wages towards UK

¹³ The 15-24 age group accounted for 79% of total net migration in the 1986/1991 intercensal period (Barrett, 1998).

¹⁴ The labour force here refers to the actual labour force rather than the pre-migration labour force.

wages during the 1960s and 1970s thus forms an important part of the explanation for migration patterns in those decades.

The high level of net migration flows in Ireland means that the trade-off between inflation and unemployment (the so-called Phillips Curve effect) is very weak. We use our estimated migration equation to infer the relationship between wages and unemployment in Ireland in the absence of migration.

Figure 14

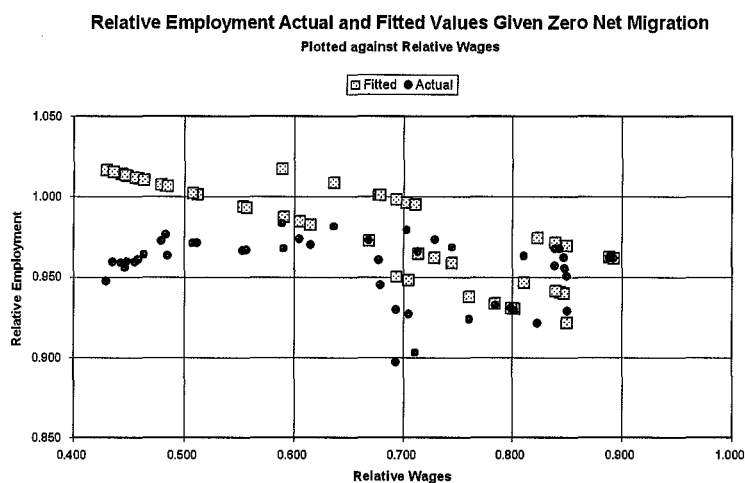
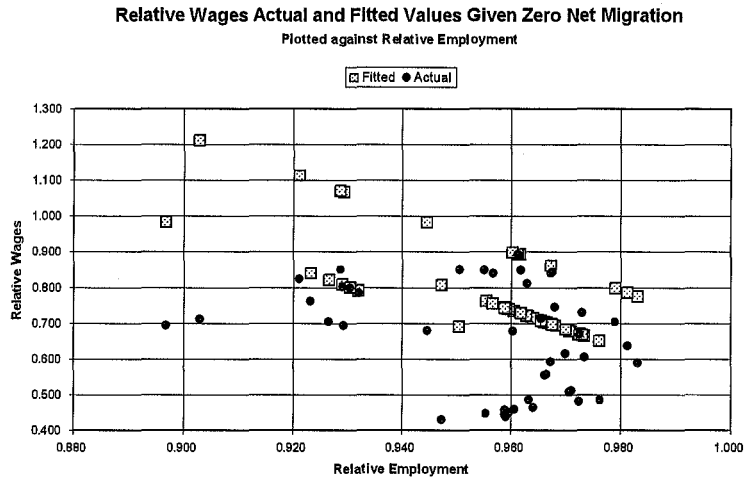


Figure 14 plots the fitted 'no migration' values of the relative employment variable implied by the net migration equation against the actual values of relative wages over the period. In addition the chart includes the actual values of relative employment. There are three distinct sub-periods corresponding to the shifts in the estimated relationship in 1978 and 1990.

By comparing the actual and fitted values of relative employment we can get an indication of the weakening of the Phillips Curve effect attributable to migration. The widest divergence between the actual and fitted values occurs in the area of low relative wages (the interval [0.4, 0.6] on the x-axis). Over this entire interval the actual values for relative employment are equal to or above the 0.95 equilibrium unemployment gap estimated by Honohan (1984). However notice the much higher *fitted* values for relative employment. The trade-off between wages and unemployment was clearly dampened via the migration mechanism.

Figure 15 plots the fitted 'no migration' values for relative wages against actual relative employment. Note that the fitted relative wage values never fall below 0.60. This implies that as long as relative wages were below 0.60 net migration would be positive. If we accept Honohan's estimate of a 5% equilibrium unemployment gap then the implied relative wage given zero net migration is of the order of 0.80. The relative wage is lower than one because Ireland is the preferred location.

Figure 15



Our estimated migration equation is partial equilibrium in nature. It does not allow for feedback effects. This is compounded by the fact that we are modelling *net* migration flows where there are different push and pull forces in operation for different cohorts in driving the decision to migrate or stay vis-à-vis the decision to remain abroad or to return. Nonetheless it captures key features of the Irish labour market. Our results indicate that the supply of labour in Ireland is very sensitive to labour market conditions. This means that the trade-off between wages and unemployment is weaker than in more closed labour markets. Significant changes in the profile of the average migrant over the period have weakened traditional links with the UK labour market in the post-war period. This weakening is likely to continue as we face into a period of substantial flows of non-Irish migrants.

Conclusions

The experience of the Irish economy over the period 1930 to 1960 shows that free movement of labour is not sufficient to ensure convergence in wage rates (and living standards) even where there is substantial movement of labour. However, the mobility of labour both into and out of Ireland has had an important impact on the performance of the economy in recent years. It has made the supply of labour in Ireland significantly more elastic than it would be in a closed economy. At times when the economy is growing rapidly, such as today, it has helped to relax capacity constraints allowing more rapid growth than would otherwise have been possible.

The increased elasticity of labour supply arising from the possibility of migration has also provided some insulation when the economy has been hit by specific shocks. When the Irish economy has performed poorly in the past while other EU economies, especially the UK, have performed well, many Irish people have chosen emigration instead of unemployment. This has reduced the purely domestic impact of shocks, as in the 1980s, when the unemployment rate was lower than it would otherwise have been due to the outflow. However, as discussed above, the impact of emigration on unemployment is much less than one for one; those who leave are not necessarily those who would be unemployed.

The availability of the migration mechanism has meant that adjustment to shocks to the economy has tended to come more through migration than through wage flexibility. The failure to identify a significant Phillips curve effect may be due to the fact that labour market pressures have always been relieved at an early stage through migration. If the labour market had been closed wage rates would eventually have been forced to adjust to restore equilibrium after shocks. This is reflected in the small impact of unemployment as measured in wage rate equations (Fitz Gerald, 1998). When economic circumstances are particularly unfavourable in Ireland this may not be reflected in unemployment if there are simultaneously good job opportunities outside the country. As a result, the Irish unemployment rate may not be the appropriate variable to include in a wage rate equation. The UK unemployment rate may prove at least as good an indicator of domestic labour market tensions in Ireland if, as Honohan and others suggest, it ultimately drives the Irish rate through the migration mechanism.

The long-term impact of migration by skilled labour on the economy can not be measured without a more formal model of the economy. However, there is evidence that skilled labour is complimentary to capital in the manufacturing sector (Kearney, 1998). As indicated above, migration has increased the elasticity of labour supply so that wage rates for skilled labour in the private sector have probably risen more slowly than they might otherwise have done. Thus the availability of additional skilled labour through the migration mechanism has probably been good for business. In allowing firms to expand their activities more rapidly it has facilitated more rapid growth. The higher level of output made possible by the outward shift in the supply of labour has probably also benefited unskilled labour. There is little evidence that unskilled labour can be easily substituted for skilled labour. However, the rapid growth in incomes has seen, as a corollary, a rapid growth in expenditure on certain kinds of services, which employ unskilled labour. As a result, there now appears also to be a tightening in the market for unskilled labour.

The significant net immigration is also having an indirect effect on the economy through increasing the pressure on the physical infrastructure. The most notable example of this is the housing market. Because most of the gross inflow are in their late 20s and early 30s they need independent accommodation while those who go are probably leaving from their parents' homes. The result is that even with net immigration of only 15,000 to 20,000 there is a very significant impact on housing demand. Using a demographic model of the Irish economy we estimate that the net immigration of the last year has added almost 6,000 to the demand for additional dwellings. This is a very significant increase, even in the context of the current rate of new building of 40,000 a year. This increment to demand is a major factor in the current increase in house prices. The additional immigration by people taking up relatively well paid jobs has also added to the congestion costs consequent on inadequate urban transport infrastructure.

The changing structure of the economy, the tightening labour market and the impending reduction in the supply of labour in the next decade (Fahey, Fitz Gerald, and Maitre, 1998) all suggest the need to re-examine current industrial and labour market policies. In the past when making decisions on

subsidies to attract foreign firms it was considered appropriate to assign a very low shadow price to labour reflecting the high level of unemployment. More recently it has been suggested that the shadow price should be close to or equal to one (Honohan, 1996). However, if many of the new jobs are going to returning emigrants (or immigrants) when the economy is already booming there may be a need to reconsider policy. Each additional family living in Ireland puts further pressure on the housing stock and on the overburdened urban infrastructure. As a result, it may be more appropriate in project appraisal to consider a shadow price of labour greater than one reflecting the negative externalities that each additional job imposes on the economy.

In the longer term, now that the fertility rate has fallen below natural replacement, an argument could be made for immigration in promoting long-term balance in the population. It could help maintain a balanced age structure in the future, avoiding the "greying" problems currently faced in a quite acute form by Germany and Japan. In the shorter term, as the population ages, immigration may be important in providing an additional stimulus of new energy. However, it is much too early yet to make any assumptions about the long-term trends in fertility and a very high proportion of the population is currently in the young adult age groups.

Finally, in considering what is the "optimal" policy on migration, from an economic point of view, the situation is rather different from other countries, such as the United States. Because so many of the immigrants are in fact returning emigrants the attitudes and expectations of the citizens living in Ireland is rather different from those of citizens of other countries faced with immigrants with no strong connection with the country. While it may be reasonable to assume that in many countries the objective function to be maximised is the welfare of the existing inhabitants, in the Irish case there is considerable satisfaction among parents and friends living in Ireland in the face of a substantial influx of returning emigrants.

References

- Barrett, A. (1998) "European Migration: What Do We Know? The Case of Ireland", ESRI, mimeo.
- Barrett, A. and F. Trace (1998) "Who is coming back? The educational profile of returning migrants in the 1990s", *Irish Banking Review*, forthcoming.
- Barry, F. and A. Hannan, 1996, "On Comparative and Absolute Advantage: FDI and the Sectoral and Spatial Effects of Market Integration", University College Dublin, Working Paper No. 96/19.
- Borjas, G., R.B. Freeman and L.F. Katz (1997) "How Much Do Immigration and Trade Affect Labour Market Outcomes?", *Brookings Papers on Economic Activity*, Vol. 1.
- Bradley, J. and J. Fitz Gerald, 1988, "Industrial Output and Factor Input Determination in an Econometric Model of a Small Open Economy", *European Economic Review*, 32, pp. 1227-1241.
- Callan, T. and H. Sutherland, 1997, *Income Support and Work incentives: Ireland and the UK*, The Economic and Social Research Institute, Dublin, Policy research series, No. 30.
- Commission on Emigration and Other Population Problems (1954). Stationery Office, Dublin.
- Curtis, J. and J. Fitz Gerald (1996) "Real Wage Convergence in An Open Labour Market", *Economic and Social Review*, July.
- Fahey, T., J. Fitz Gerald and B. Maitre (1998) "The Economic and Social Implications of Population Change", Paper Presented to the Statistical and Social Inquiry Society of Ireland, ESRI, 26th March 1998.
- Fitz Gerald, J., 1998, "Wage Formation and the Irish Labour Market", The Economic and Social Research Institute, Dublin, Working Paper No. 95.
- Freeman, T.W. (1939) "Migration Movements and the Distribution of Population in Eire" *Journal of the Statistical and Social Inquiry Society of Ireland*, 1938-1939.
- Garvey, D., and M. McGuire, 1989, "The Structure of Gross Migration Flows (Labour Force Survey Estimates)", The Economic and Social Research Institute Seminar, Dublin.
- Geary, R.C., 1935, "The Future Population of Saorstát Eireann and Some Observations on Population Statistics", *Journal of the Statistical and Social inquiry Society of Ireland*, 1935-36.
- Hannan, D., J. Sexton and B. Walsh, *The Economic and Social Implications of Emigration*, National Economic and Social Council, Dublin.

- Harris, J. and M. Todaro, 1970, "Migration, Unemployment and Development: A Two Sector Analysis", *American Economic Review*, Vol. 60, pp. 126-142.
- Honohan, P., 1992, "The Link Between Irish and UK Unemployment", *Quarterly Economic Commentary*, ESRI, Spring.
- Honohan, P., 1996, "Methodological Issues in Evaluation of Irish Industrial Policy, The Economic and Social Research Institute, Dublin, Working Paper No. 69.
- Kearney, I., 1998, "Is There a Stable Migration Equation for Ireland?" ESRI, Working Paper.
- Kearney, I., 1997, "Estimating the Demand for Skilled Workers, Unskilled Labour and Clerical Workers: A Dynamic Framework", ESRI Working Paper No. 91, December.
- Krugman, P., 1997, "Good News from Ireland: A Geographical Perspective", in A. Gray (ed.) *International Perspectives on the Irish Economy*, Dublin, Indecon.
- O'Grada, C. and B. Walsh, 1994, "the Economic Effects of Emigration: Ireland" in B.J. Asch (ed.) *Emigration and Its Effects on the Sending Country*, Santa Monica, California: Rand.
- O'Rourke, K. and J. G. Williamson, 1995, "Around the European periphery 1870-1913: Globalization, Schooling and Growth", University College Dublin Working Paper WP95/17.
- Walsh, B.M., 1968, *Some Irish population Problems Reconsidered*, The Economic and Social Research Institute, General Research Series Paper No. 42.