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Is There a Wage Premium for Returning Irish Migrants?*

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Abstract: Higher rates of economic growth in recent years have led Ireland from being a country characterised by emigration to one where population inflows have become an important issue. This paper contains an analysis of one element of the current inflow. Drawing on data collected in 1998 on over 800 Irish individuals who had graduated from Irish colleges in 1992, we compare the wages of returned migrants with the wages of those who stayed in Ireland. In a recent paper, it has been argued that returned migrants accumulate skills and competencies while away that are rewarded on return to the home country. We find support for this argument for men. On average, returning males earn 10 per cent more than men who stayed in Ireland, controlling for a range of factors. However, men who say that they originally migrated for labour-related reasons earn 15 per cent more. No wage premium is found for female returning migrants relative to female stayers.

I INTRODUCTION

For most of its modern history, a dominant feature of Ireland's economic and social life has been emigration. A stark illustration of this point can be found in the following two data points: in 1841 the population of what is now the Republic of Ireland was 6.5 million; in 1961 it was 2.8 million. The

* The authors would like to acknowledge the comments of Denis Conniffe, Christian Dustmann and Rob Euwals, members of the TSER group on Labour Demand, Education and the Dynamics of Social Exclusion and two anonymous referees. The research was conducted under the EU's TSER programme, grant no. SOE2-CT97-3052.

1950s was a particularly bad decade from the perspective of population decline. The annual average rate of net outward migration was 14.1 per thousand, which amounted to a net loss of over 400,000 people between 1951 and 1961 from a population of around 3 million. Given that the outflow was the result of economic stagnation, the government responded in the late 1950s and early 1960s by beginning the process of the modernisation of the Irish economy. This was pursued through policies such as trade liberalisation and the attraction of foreign direct investment. In the 1960s and 1970s, the modernisation policies began to lift the economic stagnation of the earlier decades. The annual average rate of net outflow fell to 4.6 per thousand between 1961 and 1971; in the 1970s, the outflow was reversed and Ireland experienced net inflows of 3.2 per thousand per annum between 1971 and 1981.[1]

Many of those in the inflow of the 1970s were former emigrants returning and so in principle the issue under consideration in this paper could have been studied twenty years ago. To understand why this and other immigration-related issues did not become part of the research agenda in Ireland, it is necessary to take note of the economic and migration experience of the 1980s. With the return of a weak economic performance, net outflows resumed. Between 1981 and 1991, the rate of net outward migration was 5.9 per thousand; in such a context it is not surprising that the brief period of net inflows in the 1970s did not generate any volume of research.

In the 1990s Ireland is enjoying an exceptionally strong economic performance, with growth rates between 1994 and 1999 averaging 7.5 per cent (CSO, 1999). This has generated new net inflows; in the years ended April 1998 and 1999, the rate averaged over 5 per thousand. This inflow is made up partly of Irish emigrants returning and partly of non-Irish immigrants. Given the projected continued growth of the Irish economy, it is likely that the net inflows will continue. In order to understand how the inflows will impact upon the Irish economy, it is important that immigration-related issues begin to be explored in Ireland, just as they have been elsewhere for many years.

This paper represents one effort to generate some insights into the nature of the immigration currently affecting Ireland. The precise focus of the paper is on people who graduated from Irish colleges in 1992 who have lived outside Ireland for at least six months since graduating but who have now returned to Ireland to work. By using a dataset which includes information on these "returners" and information on others who remained in Ireland since graduation it is possible to compare the wages of "stayers" and "returners" in

[1]. For more on the economics of Ireland's migratory history, see Ó'Gráda and Walsh (1994); for a study focusing on the 1980s experience see NESC (1991).

1998 and to ask if there is a wage premium for returning Irish migrants.

The paper is structured as follows. In the next section, we discuss some reasons why we might expect the earnings of returning migrants to differ from the earnings of those who never leave their home country. We then go on to briefly discuss the characteristics of recent Irish emigrants and returning migrants, as a lead-in to our description of the data used in the analysis. We then present the results of our analysis. As differences in results by gender emerge, we look more closely at the stated migration motives of the men and women in the sample. We then summarise and offer some conclusions.

II REASONS FOR RETURN MIGRATION

Given the standard economic approach to modelling the migration decision, return migration might be viewed as an irrational pursuit. The standard model, as applied by Borjas (1987) and others, sees individuals comparing their expected lifetime earnings in their present and alternative locations and, adjusting for the cost of migration, moving to (or remaining) where their lifetime earnings will be maximised. In a sense, the costs of migration can be viewed as an investment, with the wage advantage being the return on this investment. By returning to the original location, migrants will not be able to reap the full return.

By introducing additional considerations into the standard model of migration, it is possible to model return migration as an economically rational decision or set of decisions (for example, see Stark, 1991). For example, if an individual puts a higher value on consumption in the home country relative to the host, he might be prepared to move to earn more for a period of time and then to return to spend the additional earnings in the home country. Migration could also be seen as an information gathering exercise. The individual will have imperfect information about opportunities elsewhere. In this case migration can be seen in a job search context; if after searching the individual realises they will be better off at home they will return.

Another motivation for return migration was originally proposed by Dustmann (1997) and has recently been explored further by Co, Gang and Yun (2000); it is their view that we will focus on here. Dustmann introduced the notion that working away from home can be part of the human capital accumulation process. By being exposed to different approaches to technical or management matters, emigrants may pick up skills and competencies that are then rewarded once they return to their home countries. Those who never left will then be observed to earn less relative to the return migrants, controlling for a range of factors. Co, Gang and Yun test the hypothesis with data on

Hungarians. They find that return migrants do indeed earn a wage premium relative to those who stayed. The premium varies according to which countries the migrants had worked in. In addition, the size of the premium was sensitive to selection corrections, a point we will return to below.

While the story told by Dustmann (1997) is plausible, we would add some considerations. First, while some may migrate for "investment" purposes in an effort to add to their human capital, it is also possible that some migrate for largely "consumption" reasons. By this we mean that some may go and work abroad mainly out of an interest in seeing the world or experiencing different cultures. In this case, while those who remain at home may be accumulating additional human capital through work experience, the migrants may not be doing so, especially if they are working in casual jobs whose only purpose is to support the migrant while travelling. If this story is true, we would expect to see return migrants earning less than stayers at least soon after their return.

A second consideration relates to a signalling story of wage determination as opposed to a human capital story. It could be that returning migrants will be seen to earn more because employers take working abroad as a signal of higher productivity. Employers may believe that migrants have shown initiative and independence by going away and so may be willing to pay a premium to hire people with these perceived desirable qualities.

Finally, a self-selection story can also be told. If people who migrate are highly motivated risk-takers, it could be that any observed link between wages and migration is simply reflecting higher earnings for unobserved characteristics.

To summarise, there are reasons for believing that returning migrants will earn more than those who stay because: (a) they have accumulated additional human capital while away; (b) employers take time away as a signal for higher productivity; (c) those who migrate may have unobservable characteristics (such as initiative) which also lead them to be more productive.

It is, however, possible to reverse each of these stories and to suggest that returning migrants might be observed earning less than stayers. For example, their time away may have been for reasons of consumption and little or no human capital may have been accumulated during their time away. It may be that employers take migration and return as being a negative signal. It may also be that returners have unobservable characteristics (such as being fickle) which lead them to be less productive. Finally, if the timing of a return is related to family-formation or other such decisions, individuals may initially accept lower wages on return.

III IRISH EMIGRANTS AND RETURN MIGRANTS

Table 1: Educational Profile of Return Migrants and Non-Migrants by Age Category (Row percentages Shown)

Age		No. Quals.	Primary	Junior/ Inter	Leaving	Third Level/ Non-University	Third Level/ University	Higher University
20-24	R	0.5	4.0	11.0	36.5	22.5	22.5	3.0
	N-M	0.4	5.6	20.1	50.4	15.0	7.8	0.7
25-29	R	0.0	4.5	13.3	24.7	28.9	21.6	7.1
	N-M	0.5	7.5	25.8	37.1	16.3	10.7	2.1
30-39	R	0.2	8.6	19.8	21.8	23.7	20.9	5.0
	N-M	0.6	14.9	19.9	38.8	14.1	9.7	1.9
40-49	R	2.2	18.3	19.7	27.6	12.7	11.9	7.5
	N-M	0.6	29.4	28.4	24.0	8.9	7.1	1.5
50-59	R	1.2	32.5	20.0	17.8	13.6	10.4	4.5
	N-M	0.8	43.9	23.4	18.6	6.8	5.3	1.2
60-69	R	0.0	34.0	18.3	20.0	12.2	8.6	7.0
	N-M	1.2	58.9	17.3	14.2	4.2	3.4	0.7
70+	R	0.0	38.8	27.0	11.8	7.8	14.5	0.0
	N-M	2.2	70.8	12.1	9.3	2.8	2.4	0.4

Source: Labour Force Surveys 1994, 1995 and 1996.

R = return migrants, defined as Irish nationals who were born in Ireland but who were not resident in Ireland twelve months previously; N-M = non-migrants, defined as Irish nationals who were born in Ireland who were resident in Ireland twelve months previously. The percentages are based on 1,400 return migrants and 265,655 non-migrants.

No Quals = no educational qualifications.
Primary = completed primary.
Junior/Inter = a state exam taken approximately half way through second level schooling.
Leaving = state exam taken at the end of second level schooling.
Third Level/non-university = typically diploma and certificate courses in
Regional Technical Colleges and the Institutes of Technology.
Third level/university and higher university are self-explanatory.

Note: As almost 80 per cent of the return migrants are in the first three age categories, greater attention should be focused on the proportions in the upper part of the table.

Before describing the data used in the analysis below, we will briefly consider the characteristics of Irish emigrants and return migrants. Up until the 1980s, Irish emigrants were typically unskilled. The main reason for this was the low level of educational attainment in general and the greater likelihood of the more educated remaining in Ireland. In the 1980s, this feature of Irish emigrants was reversed and the outflow began to be more educated. This can be explained partly by the rising level of educational attainment but also by the increased likelihood of the more skilled emigrating relative to the less skilled. This in turn has been partly explained by changes in the relative generosity of the Irish social welfare system and the relative severity of the taxation system in the 1980s (NESC, 1991).

Given that the outflow of the 1980s was relatively more educated than both previous generations of emigrants and the domestic population, it would be expected that the returning migrants in the 1990s, who would be drawn from this pool, would also have relatively high levels of education attainment. Barrett and Trace (1998) have shown this to be the case. Table 1 (which is taken from Barrett and Trace) compares the educational profiles of migrants who have returned within twelve months of the survey date and the profile of the resident population aggregated over the years 1994 to 1996. The resident population includes people who returned earlier than twelve months previously so we do not get a strict comparison of returners and stayers. Nonetheless, the figures are interesting.

It can be seen in the table that the resident population has relatively higher proportions in the lower levels of the educational distribution while relatively higher proportions of the return migrants are found in the upper sections of the distribution. Barrett and Trace go on to present evidence that the returning migrants are not just more highly educated than the resident population; they also appear to be more highly educated than the group who emigrated in the 1980s.

IV THE DATA

In the preceding section, we have shown that returning Irish migrants are heavily drawn from the pool of third level graduates. For this reason, the data that we use are particularly useful for the analysis of return migration into Ireland.

The data come from a survey which was sponsored by the Irish Department of Education and Science and which sought to generate information on the labour market experiences of graduates from Irish third level colleges. Drawing on the records of colleges, a random sample of 3,400

individuals who graduated in 1992 was generated. In the summer of 1998, questionnaires were mailed to these individuals. About 1,350 responses were obtained. The comparatively low response rate of 40 per cent was largely due to the difficulty in tracing individuals using university administrative records of addresses which in some cases were over eight years old. We checked for biases in responses by comparing our sample with figures from the Higher Education Authority. We found that there was no bias as regards migration (HEA, 1993), gender and area of study (HEA, 1994). Further details of the survey and the sample can be found in Gash and O'Connell (2000) which contains a comprehensive analysis of the sample.

The questionnaire asked for information on a range of individual characteristics and labour market matters. Hence, we have information on age, sex and level of educational attainment. We also have information on labour market experience and gross wages.

As regards migration, the respondents were asked if they "have ever lived outside Ireland for a continuous period of more than six months since completing third level education?" (italics included in the questionnaire); they were also asked if they are currently resident in Ireland. Combining these questions we define "returners" as those who answered "yes" to both and we define "stayers" as those who are resident in Ireland but who have not lived away for more than six months.

V RESULTS

We now present the results of our analysis. We included in our analysis Irish nationals who said that their "present usual situation with regard to employment" was working for payment or profit. After eliminating other observations because of missing values, we were left with 670 stayers and 158 returners who provided information on all variables that are used in the analysis. In Table 2 we present the means of the variables across the two groups, along with indications of statistically significant differences.

It can be seen from the table that the two groups are quite similar. The returners are more likely to be living in Dublin and less likely to work in education. As regards age, education, labour market experience, gender and marital status, there are essentially no differences between returners and stayers. The variable of greatest interest is wage; here we find a difference between the two groups with the returners being paid about IR£150 more per month. This is a wage advantage of about 9 per cent and the difference is statistically significant at the 5 per cent level. Below, we will see if the difference remains when we control for a range of factors. One question that

might arise from this observation is whether, a priori, returning migrants are more likely to overstate their earnings but we can see no reason why this might be so.

Before proceeding to the regression analysis, we present some additional information on the returners. A number of questions were asked of migrants

Table 2: Descriptive Statistics on Returners and Stayers

	Stayers		Returners	
	Mean	Std. Deviation	Mean	Std. Deviation
Age (in years)	28.32	2.76	28.19	2.0
Experience (in years)	4.72	1.62	4.82	1.26
Education dummy variables				
Certificate/diploma	0.27	0.44	0.24	0.43
Bachelor Degree	0.26	0.44	0.32	0.47
Masters Degree or Equivalent	0.43	0.50	0.38	0.49
Doctorate	0.037	0.19	0.063	0.20
Dublin	0.37**	0.48	0.49	0.50
Male	0.51	0.50	0.6	0.50
Partner	0.64	0.48	0.70	0.46
Sectoral dummy variables				
Computers	0.07	0.26	0.095	0.29
Manufacturing	0.20	0.40	0.24	0.43
Real Estate, renting and business	0.14	0.35	0.17	0.38
Education	0.19**	0.39	0.10	0.30
Health	0.05	0.21	0.06	0.24
Other sectors	0.35	0.48	0.33	0.47
Gross monthly wage (IR£)	1,675*	699	1,825	794
	N= 670		N=158	

* P<.05, ** P<.01

concerning their reasons for and feelings about migration. In Tables 3 to 5, we show the distribution of responses to these questions. Table 3 contains the distribution of responses to a question about how the returners felt when they were first leaving Ireland. The most striking point from the table is that almost three-quarters were either looking forward to going or delighted to leave.

The reasons for the optimism can be seen more clearly in Table 4 where the distribution of responses to a question on the reasons for leaving are

Table 3: How the Returners Felt about Leaving Ireland

	Frequency	Per Cent
Very Upset – Sad	6	4.0
Upset – Sad But Not Badly	14	9.3
Not Too Bad	19	12.7
Looking Forward to Going	90	60.0
Delighted to Leave	21	14.0
Total	150	100

Table 4: Reasons for Leaving

	Frequency	Per Cent
To Get a Job	22	13.9
To Get a Better Job	19	12.0
To Get Better Wages	9	5.7
Tax Rated Too High	4	2.5
To Continue Further Education	15	9.5
Family Was Leaving – Left With Them	2	1.3
Adventure, See the World	66	41.8
Other	21	13.2
Total	158	100.0

Table 5: Reasons for Returning

	Frequency	Per Cent
Became Unemployed Abroad	5	3.2
Returned to a Job in Ireland	45	28.5
Accompanied Spouse	3	1.9
Preferred to Raise Child in Ireland	6	3.8
Other Family Commitments	11	7.0
Preferred Lifestyle	47	29.7
Other Reason	41	26.0
Total	158	100.0

presented. Only 13.9 per cent answered that they left to get a job, implying that most emigration had a voluntary dimension. Of particular interest in this table is the fact that over 40 per cent left for reasons of "adventure". Referring back to the discussion above, we take this as evidence that emigration for some has a consumption element that might impact upon wages on return to Ireland. The absence (or at least lesser importance) of labour market considerations are also seen in Table 5 which presents the distribution of reasons for returning. Over a quarter of the returners said that their main reason for returning was because they preferred the lifestyle in Ireland. While it is almost certainly the case that this lifestyle response is conditional on a threshold level of success in the Irish labour market, it nonetheless points to considerations other than solely labour market outcomes.

We now move onto our regression analysis of the wage differential between stayers and returners. In order to consider the relative wages of the two groups, we estimate standard OLS wage equations in which the standard controls are included and the dependent variable is the log of the monthly wage. Initially, we include a dummy variable indicating if the individual is a returner or a stayer; in later regressions we differentiate between different lengths of time away and different types of returners. At this point we are taking a simple approach to the issue and in particular are ignoring selection effects; however, we do consider the selection issue below.

The first results are shown in the second column of Table 6, where the full sample (i.e. both males and females) are included and the dependent variable

Table 6: Wage Equations with Returner Dummy Variable (Dependent variable: log of monthly wage)

	All; N = 828		Men; N = 412		Women; N= 416	
	B	t-stat	B	t-stat	B	t-stat
Experience	0.07	8.24	0.08	6.07	0.06	5.08
Bachelor Degree	0.28	8.13	0.26	5.08	0.31	6.62
Masters Degree or Equivalent	0.30	9.33	0.28	5.26	0.32	8.42
Doctorate	0.51	7.55	0.46	4.65	0.56	6.04
Dublin	0.10	3.96	0.06	1.32	0.15	4.73
Male	0.16	6.23				
Partner	-0.05	-1.79	-0.08	-1.75	-0.03	-0.82
Returner	0.05	1.48	0.10	1.98	-0.01	-0.31
Constant	6.71	115.90	6.88	78.76	6.73	94.27
	Adj- R2 = 0.22		Adj- R2 = 0.18		Adj- R2 = 0.23	

Specification Tests

Full sample
Ramsey RESET test, F(3, 816) = 0.54, Prob > F = 0.6567
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.16, Prob > chi2 = 0.6846
Shapiro-Wilk W test for normal data, z = 7.335, Pr > z = 0.0000

Males
Ramsey RESET test, F(3, 401) = 0.99, Prob > F = 0.3991
Cook-Weisberg test for heteroscedasticity, chi2(1) = 1.92, Prob > chi2 = 0.1658
Shapiro-Wilk W test for normal data, z = 5.703, Pr > z = 0.0000

Females
Ramsey RESET test, F(3, 405) = 1.14, Prob > F = 0.3336
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.03, Prob > chi2 = 0.8524
Shapiro-Wilk W test for normal data, z = 5.391, Pr > z = 0.0000

is the logarithm of the gross monthly wage. Before looking at the returner wage premium we will consider the other variables in the regression. Experience, which is measured in years, is positive and significant, as would be expected. Typically, the square of experience is also included but this is unnecessary here because of the nature of the sample. As all individuals graduated six years prior to the survey, the length of their labour market experiences are short and similar. The next three variables represent education levels, with certificates/diplomas being the omitted category. Again, the coefficients are as expected. Those working in Dublin earn 10 per cent more and men earn 16 per cent more than women. The variable "partner" is one if the individual is living with a partner and zero otherwise; although the coefficient is negative, it is insignificant.

While this pattern of coefficients is broadly repeated in the separate regressions for men and women, the coefficients of Dublin differ significantly across the genders. What is surprising is that the Dublin-based premium is not statistically significant for the men in the sample. In samples of all employees, as opposed to just graduate employees, a premium for men would typically be observed (see, for example, Barrett et al., 2000). It would appear that graduate earnings for men are more equal across the country than the earnings of others. What is also surprising is that the men in this sample with partners earn less than men without partners, although this is only marginally significant. The point estimate for women with partners is also negative but it is not significant in any of the models.[2]

For the full sample, returners are found to have a wage premium of 5 per cent relative to stayers but the point estimate is statistically insignificant. By looking at the results for men and women separately, we can see that the full sample result hides an interesting distinction between men and women. For men, the returner wage premium is 10 per cent and is statistically significant. In contrast, women returners do not enjoy a wage premium.

A range of specification tests were run on the regressions in Table 6, and on the regressions in Tables 7-9. As the pattern of results of these tests are identical across all regressions, the following discussion for Table 6 applies for the later tables. We initially ran RESET tests for functional form but found no evidence of omitted variables in any of the regressions (test statistics are shown with the tables). We then tested for heteroscedasticity and again found no evidence of this difficulty. As a final specification test, we ran Shapiro-Wilk tests for non-normality and did find evidence of non-normality.

As is well known (e.g. Spanos, 1986, p. 447), relaxing normality assumptions when homoscedasticity can be retained does not upset most of

[2] The difference between the coefficients of partner for men and women is never significant.

Table 7: Wage Equations with Time Away (Dependent variable: log of monthly wage)

	All; N= 828		Men; N = 412		Women; N = 416	
	B	t-stat	B	t-stat	B	t-stat
Experience	0.07	8.21	0.08	6.10	0.06	5.11
Bachelor Degree	0.28	8.10	0.26	5.05	0.31	6.59
Masters Degree or Equivalent	0.30	9.26	0.27	5.16	0.32	8.43
Doctorate	0.51	7.47	0.45	4.54	0.56	6.02
Dublin	0.10	4.01	0.06	1.41	0.15	4.63
Male	0.16	6.15				
Partner	-0.05	-1.76	-0.08	-1.67	-0.03	-0.84
Time away	0.02	1.61	0.03	1.44	0.01	0.51
Constant	6.72	116.18	6.89	78.53	6.73	94.67
	Adj- R2 = 0.22		Adj- R2 = 0.18		Adj- R2 = 0.23	

Note: Time away for stayers is equal to zero.

Specification Tests

Full sample
Ramsey RESET test, F(3, 817) = 0.74, Prob > F = 0.531
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.31, Prob > chi2 = 0.5795
Shapiro-Wilk W test for normal data, z = 7.337, Pr > z = 0.0000

Males
Ramsey RESET test, F(3, 401) = 1.31, Prob > F = 0.2698
Cook-Weisberg test for heteroscedasticity, chi2(1) = 1.65, Prob > chi2 = 0.1983
Shapiro-Wilk W test for normal data, z = 5.667, Pr > z = 0.0000

Females
Ramsey RESET test, F(3, 406) = 1.69, Prob > F = 0.1692
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.08, Prob > chi2 = 0.7842
Shapiro-Wilk W test for normal data, z = 5.433, Pr > z = 0.0000

the desirable OLS criteria. Coefficient and variance estimates are still unbiased and consistent, although more efficient estimates taking account of the non-normality are theoretically obtainable. Usually, the practical difficulty with non-normality is that the assumed t-distributions of coefficient test criteria are no longer exact in small samples, although they are still asymptotically justified. With over 800 observations, we can appeal to asymptotic theory with considerable confidence. Furthermore, it is the relatively large number of observations that has made the test of normality sensitive enough to display the result it did. The degree of deviation from normality is actually quite slight, as demonstrated by a histogram (not shown, but available from the authors). For these reasons, the results of the tests are quite credible.[3]

In Table 7, we move from using a dummy variable to indicate returners. Instead we use a measure of length of time away and set it equal to zero for stayers. As the questionnaire included a question on when the individuals first emigrated and when they returned it is possible to construct such a variable. We have to concede that in cases where multiple moves were taken, our measure will overstate the length of time away and so measurement error is possible.

The time away variable is measured in years so the coefficient point estimate for the full sample in Table 7 indicates that returners earn almost 2 per cent more relative to stayers for each additional year they were away. However, this estimate is insignificant, as are the corresponding estimates for men and women. It could be that the insignificance is a result of measurement error, as discussed in the preceding paragraph. If a number of graduates moved multiple times they will not have had a chance to move upwards along a wage/tenure profile even though the measure of time away in our data would incorrectly suggest that they did have the time.

Our next set of estimates is presented in Table 8. Given that Dustmann (1997) discusses return migration in terms of it representing an investment in human capital, it is of interest to consider if the wage premium differs according to the initial reason for emigration. Referring back to Table 4, we can see that the first five reasons can be viewed as indicating that emigration was for career advancement purposes. As such we group the returners who gave this response into a category who "left for labour reasons"; the other group, which is made up of those who left with family or for adventure, is then

defined as those who left for "non-labour reasons". In the regressions the coefficients on these dummy variables are measured with respect to stayers.

3. We are grateful to Denis Conniffe for advice on this point.

It might be argued that combining the five reasons into a single variable is invalid if there is a belief, for example, that migrating "to get a job" is

Table 8: Wage Equations with Reasons for Leaving (Dependent variable: log of monthly wage)

	All; N = 828		Men; N = 412		Women; N = 416	
	B	t-stat	B	t-stat	B	t-stat
Experience	0.07	8.22	0.08	6.15	0.06	5.09
Bachelor Degree	0.28	8.15	0.26	5.15	0.31	6.61
Masters Degree or Equivalent	0.30	9.29	0.28	5.25	0.32	8.42
Doctorate	0.51	7.45	0.45	4.55	0.56	6.04
Dublin	0.10	3.96	0.05	1.29	0.15	4.71
Male	0.16	6.08				
Partner	-0.05	-1.79	-0.08	-1.74	-0.03	-0.79
Left for labour reason	0.08	1.93	0.15	2.47	-0.01	-0.24
Left for other reason	0.01	0.13	0.002	0.03	-0.01	-0.24
Constant	6.71	115.90	6.88	78.76	6.73	93.85
	Adj- R2 = 0.22		Adj- R2 = 0.18		Adj- R2 = 0.23	

Note: Returning migrants categories are measured relative to stayers.

Specification Tests

Full sample
Ramsey RESET test, F(3, 816) = 0.57, Prob > F = 0.632
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.14, Prob > chi2 = 0.71
Shapiro-Wilk W test for normal data, z = 7.366, Pr > z = 0.0000

Males
Ramsey RESET test, F(3, 400) = 1.07, Prob > F = 0.361
Cook-Weisberg test for heteroscedasticity, chi2(1) = 1.89, Prob > chi2 = 0.1687
Shapiro-Wilk W test for normal data, z = 5.727, Pr > z = 0.0000

Females
Ramsey RESET test, F(3, 405) = 1.13, Prob > F = 0.3376
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.03, Prob > chi2 = 0.8601
Shapiro-Wilk W test for normal data, z = 5.409, Pr > z = 0.0000

qualitatively different from migrating "to get a better job". In truth, there is a degree of arbitrariness in the combination we chose but we believe it to make sense, especially when compared with the contrast category. That category is largely made up of those who left for reasons of adventure and this seems to us to differ qualitatively from the first five reasons. If the concern over amalgamating the first five reasons relates to possible differences in the human capital across individuals in the different cells, we would argue that controlling for human capital differences by including education and experience in the regressions counters this.

It can be seen in Table 8 that for the full sample there is evidence of a difference in the wage premium across the two groups of returners. While those who left for non-labour reasons earn the same as stayers, the wage advantage for the labour-related migrants is 8 per cent (as the p-value is .054, we take this as being significant). The gap is particularly large in the case of men; the wage advantage for men who migrated for labour reasons is 15 per cent. For women we find no difference between the two types of migrants, who in turn earn the same as women who stayed in Ireland. For men, this would appear to indicate that the wage advantage is restricted to those who had explicit human capital motives for going. The question arises of why the female experience should differ from the male experience and we return to this below.

Our next regressions are shown Table 9 in which we introduce the sector in which the individuals work. Our primary reason for doing this is to see if the premium is related solely to a particular sector, namely computers. As this sector has been growing particularly strongly and skill shortages are believed to have lead to large wage rises, we wanted to see if the premium was simply the result of a large inflow of computer scientists. Once again, the returner categories are measured relative to all stayers.

Looking initially at the "all" column in Table 9 we see that although those working in computers have the largest wage advantage (the point estimate is not significant, however), those in manufacturing also enjoy a wage premium. In general, little of statistical significance emerges from this set of regressions. This is likely to be because of the small number of observation in the sectoral cells. The important point is that high wages in the computer sector do not seem to be driving our results.

We ran an additional set of regressions, aimed at establishing whether the returner wage premium was the result of a selection process. It could be that

Table 9: Wage Equations with Sectors (Dependent variable: log of monthly wage)

	All; N= 828		Men; N = 412		Women; N = 416	
	B	t-stat	B	t-stat	B	t-stat
Experience	0.07	8.25	0.08	6.14	0.06	5.18
Bachelor Degree	0.28	8.08	0.26	5.03	0.31	6.44
Masters Degree or Equivalent	0.30	9.48	0.28	5.36	0.33	8.45
Doctorate	0.54	7.79	0.50	4.95	0.58	6.10
Dublin	0.11	4.03	0.06	1.40	0.15	4.54
Male	0.15	5.92				
Partner	-0.05	-1.87	-0.08	-1.87	-0.03	-0.94
R-computer	0.16	1.70	0.11	0.76	0.21	1.70
R-manufacturing	0.13	2.16	0.13	1.56	0.09	1.06
R-Real estate etc.	-0.02	-0.27	-0.03	-0.23	-0.04	-0.45
R-education	-0.16	-1.68	-0.27	-1.13	-0.15	-1.61
R-health	0.09	0.78	0.40	1.00	0.06	0.51
R-other	0.04	0.80	0.15	1.84	-0.07	-1.01
Constant	6.71	115.39	6.88	78.28	6.73	93.73
	Adj- R2 = 0.22		Adj- R2 = 0.18		Adj- R2 = 0.24	

Note: R-(sector) indicates returning migrants in each sector; stayers are the omitted catergory.

Specification Tests

Full sample

Ramsey RESET test, F(3, 811) = 0.57, Prob > F = 0.6356
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.00, Prob > chi2 = 0.9902
Shapiro-Wilk W test for normal data, z = 7.351, Pr > z = 0.0000

Males

Ramsey RESET test, F(3, 396) = 0.58, Prob > F = 0.6289
Cook-Weisberg test for heteroscedasticity, chi2(1) = 2.63, Prob > chi2 = 0.1047
Shapiro-Wilk W test for normal data, z = 5.734, Pr > z = 0.0000

Females

Ramsey RESET test, F(3, 400) = 2.48, Prob > F = 0.0608
Cook-Weisberg test for heteroscedasticity, chi2(1) = 0.00, Prob > chi2 = 0.9468
Shapiro-Wilk W test for normal data, z = 5.314, Pr > z = 0.0000

more able individuals migrate and return, and so would be observed to earn more whether they had migrated or not. We estimated a Heckman selection correction model in which we used the unemployment rate in each individual's county of residence in 1992 (i.e. the time the individuals were graduating) as a predictor of migration that would not affect the individuals' wages in 1998. As the coefficients on the lambda terms in the wage regressions were insignificant, we could conclude that selectivity was not driving our results but we are reluctant to overstate the point. Our identifying restriction is weak so we cannot be confident of having successfully controlled for selection. Clearly, more powerful identifying restrictions would be desirable but our data do not include such variables and it is difficult to obtain them from other sources. Hence, we must remain cautious on this point.

VI DIFFERENCES BY GENDER

Our analysis has uncovered differences in migration outcomes for men and women. In particular, the differences by gender in the coefficient estimates for "return" in Table 6 and "left for labour reasons" in Table 8 are statistically significant. Before concluding, we will look again at the migration motives of the men and women in the sample to see if they help explain the observed patterns.

We should first point out that it is not a complete surprise that these differences emerged. Mincer (1978) developed a model in which migration decisions are made by families and not by individuals. In such a setting, migration occurs if there is a positive net gain to the family, even if one member suffers a net loss. As long as those gaining through migration can compensate anyone who loses, the family will find it optimal to migrate. Those suffering loses are called "tied migrants" by Mincer and empirical work has shown women more likely to be tied migrants than men (Sandell, 1977). If such a process is at work among the graduates in our sample, it could be that women do not reap the benefit of working away because they move at a time that is sub-optimal for them as an individual yet optimal in a family sense.

In order to see if there is any evidence of this type of process underlying our results, we went back to Tables 4 and 5 on migration motives and looked at the reasons for leaving and returning by gender. As regards leaving, there did appear to be differences in the pattern of motivation. Over half the men said they left for labour reasons while a third left for adventure; the exact opposite pattern arises for women. The distributions of reasons for returning are more similar, with one notable exception. While 8.2 per cent of men returned for what can generally be labelled "family reasons", 16.5 per cent of

women stated this as their reason for returning.

The biggest difference between men and women arose with regard to the wage premium for those who left for labour-related reasons. For this reason we also looked at the motivations for leaving and returning for this group only. Very little difference is seen in the distributions of reasons across men and women falling into this cell. While this would appear to reduce the likelihood that a Mincer-type process is at work, we would suggest that it might still hold. While someone may state that their reason for returning was getting a job in Ireland, this may be a primary reason. However, secondary factors may be at work and if these factors, such as family considerations, differ across the genders they may explain the lack of a wage premium for women.

One additional piece of analysis that we conducted on this point was to run a regression for women in which we included an interaction term for returners with partners. The result was to produce a coefficient for women returners without partners of 0.035 and a corresponding coefficient for women with partners of –0.07. Neither of these coefficients are significant and neither is the difference between them. However, as the cells get smaller achieving significance is more difficult so we would argue that this result is at least suggestive of a possible Mincer process.

VII CONCLUSION

Although Dustmann (1997) and Co, Gang and Yun (2000) hypothesise that return migrants will earn more than non-migrants due to human capital accumulation, we have pointed out that there are reasons to believe that the positive wage premium could exist for other reasons, or alternatively that returners could earn relatively less. Our empirical analysis has shown that among graduates of Irish colleges, returning males do indeed earn more than males who stayed in Ireland although no effect is found for returning women. Given our alternative explanations for the wage premium the question arises of whether this is a human capital effect, a signalling effect or a self-selection effect.

Given our data, it is not possible to be definitive on this point. We have been able to show that the premium is restricted to those men who migrated for what we have described as labour market reasons but even this could be the result of the three possible explanations. Having said that, we would argue that the signalling story is the least likely explanation. Return migration could be the result of success or failure abroad. People may return because they know they are equipped with new skills or because they have done badly while away. Employers may not know precisely why someone is

returning and so it seems unlikely that they would offer a 15 per cent wage premium on the basis of an uncertain signal. Even though our test for self-selection was weak, we found no evidence for selection. For these reasons our preferred explanation is the human capital story although this requires further investigation.

If the human capital story is correct, these results have a number of implications. From a national labour market perspective, the return of people with high levels of education, as observed by Barrett and Trace (1998), is a benefit given the competitive requirements of a modern economy. That these highly educated people also appear to have accumulated additional human capital is a further benefit to the Irish economy. From a micro-perspective, the wage advantage enjoyed by returners points to the benefits that individuals can enjoy through working abroad at least for a period of time.

Finally, the different results for men and women suggest another source of difference in the labour market experiences of each. Drawing on Mincer's (1978) terminology, it could be that the women we observed are "tied-migrants" in the sense that their moves are determined by family considerations, possibly as part of a family formation process. While this is likely to be a small component in overall differences in the earnings of men and women, it nonetheless points to another dimension of the gendered labour market roles.

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Devaluation Expectations and Fundamentals: Some New Evidence For Ireland 1979-1994

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Abstract: This paper uses a Probit model to link economic fundamentals with devaluation expectations for the Irish pound over the period 1979-1994. The estimates relate to both the probability as well as the size of an expected devaluation. The model performs well in predicting the size and timing of actual realignments and estimates of devaluation expectations are consistent with previous estimates based on UIP. While the Maastricht Treaty stipulated the need for exchange rate stability prior to joining EMU, the results here show that economic variables other than those referenced in the Maastricht Treaty can lead to exchange rate instability.

I INTRODUCTION

The purpose of this paper is threefold. First, we empirically estimate devaluation expectations for the Irish pound during the EMS. The methodology employed differs from much of the previous work on exchange rate expectations (for example, Bertola and Svensson (1993), Svensson (1991)) which invokes the assumption of uncovered interest rate parity (UIP) to estimate the expected rate of depreciation of the exchange rate. In using a Probit model previously applied by Edin and Vredin (1993) and others, we gain an additional insight into the expected rate of devaluation regarding the probability of that devaluation, a feature not captured in the UIP model which generates estimates only of the size of an expected devaluation.

Second, both Eichengreen (1993) and De Grauwe (1994) note that a speculative attack may precede, rather than follow, imbalances in domestic policies; Gerlech and Smets (1994) also document how there may be no evidence of budget deficits or rapid monetisation, for example, in the period leading up to an attack. The implication is that certain fundamentals may not be reliable indicators of speculative pressure on a currency. In the context of European Monetary Union (EMU), economic variables other than the Maastricht convergence criteria may be important in the formulation of devaluation expectations which can ultimately lead to currency realignments. Thus, a government's fundamentals may satisfy the Maastricht criteria but violate the currency stability requirement and so not be admitted to such a monetary union. Here, the methodology used allows us to see how the probability of a devaluation is related to certain economic variables, or "fundamentals", other than those specified in the Maastricht criteria and so indicate the extent to which these factors lead to exchange rate instability.

Third, by comparing results from the Probit and UIP models, this allows us to establish how consistent estimated devaluation expectations from both models are. While it has been noted by Kaminsky and Peruga (1990) that there is weak support empirically for UIP, similar devaluation expectations from the two different methodologies should indicate that UIP is a reasonable assumption for Ireland over the period 1979-1994. The fact that a fundamental factor such as the Stg£/£IR exchange rate emerges as a significant influence on devaluation expectations is a by-product of the analysis rather than a conclusion in itself. The benefit of consistent results with other studies, both domestic and international, is that the application of the probit model in an Irish context appears justified. In this regard, the key contribution of the paper is centred around the methodology employed rather than establishing the key drivers of devaluation expectations. The analysis which seeks to relate the probability and, ultimately, the continuous expectation of a devaluation, to fundamentals using a probit model has not been carried out for Ireland before.

The layout of this paper is as follows. In Section II, we present the Probit model used to estimate devaluation expectations. The empirical estimates of this model are presented and discussed in Section III. Section IV compares the results with others obtained for Ireland using UIP as well as with Probit results for other currencies estimated using Edin and Vredin's (1993) methodology. Finally, Section V summarises the main points of the paper and concludes.

II METHODOLOGY AND DATA

Assuming rational expectations (RE), the expectation of a future devaluation is equivalent to the mathematical "expected value" of the future increase in the IR£/DM central rate, conditional on all available information. Forming a rational expectation of the exchange rate involves, as a prerequisite, forecasting the fundamentals. Thus, the rational expectations assumption is critical in that it amounts to assuming that economic agents know the true structural model linking the exchange rate to fundamentals. This allows us to conclude that the same structure will link expectations of these variables. We begin by setting out how we select the dependent variable for the Probit regression, based on a shadow floating exchange rate. Following this we specify the regression model and address the specification problems which arise due to selection bias. Finally, we outline exactly how the devaluation expectations are calculated.

Selection Mechanism

Following Baxter (1987) and Edin and Vredin (1993), the central parity is treated as a censored variable, in that it is only observed when the equilibrium floating exchange rate deviates far enough from the prevailing peg, i.e. only immediately after devaluations.[1] Although we wish to examine what variables drive the floating exchange rate, we are only interested in observations in which changes in the floating exchange rate are large enough to cause a devaluation. Specifically, the central parity at time "t"(c_t) is set as follows:

$$c_t = \begin{cases} s_t + \gamma_t & \text{if } s_t + \gamma_t > c_{t-1} + x \\ c_{t-1} & \text{if } s_t + \gamma_t \leq c_{t-1} + x \end{cases} \qquad (1)$$

where s_t is the "shadow floating exchange rate".

The floating exchange rate is a "shadow" in the sense that it is not observed unless it deviates far enough from the prevailing central rate to yield a new central parity. Therefore, we only observe the change in the shadow floating exchange rate if it is large enough to cause a change in central parity, i.e. large enough to cause a devaluation. How large the deviations of the

[1] Realignment Dates of the Irish pound are given in Appendix B.

floating rate have to be before the central parity is changed, is determined by the threshold x and by a stochastic policy disturbance[2] term γ.

The (log of the) equilibrium floating exchange rate s_t is assumed to be proportional to some fundamental variable or vector of fundamental variables:

$$s_t = k + \beta' H_t \qquad (2)$$

where Ht is a vector of fundamental variables.

It is assumed that H_t follows a first order autoregressive process:

$$H_t = \theta_1 + \theta_2 H_{t-1} + v_t \qquad (3)$$

Under weak rationality, the information set on which to base an expectation of next periods exchange rate is simply this period's fundamentals plus a random error v_t. The error arises from the mistakes made by economic agents in forecasting the future fundamentals, which, if we can assume rationality, must be attributable to newly-arrived information or 'news' for short.

Let us define a devaluation, $d_t = c_t - c_{t-1}$. From Equation (1), the probability that $d_t > 0$ is equal to the probability that $s_t + \gamma_t > c_{t-1} + x$. Using Equations (1) to (3) and by substitution, the probability of a devaluation occurring at time t+1 based on information at time t is

$$\text{Prob}\ (d_{t+1} > 0) = \text{Prob}\ (\alpha + \beta\theta_2 H_t - c_t + \eta_{t+1} > x) \qquad (4)$$

where, α is $k + \beta\theta_1$, and $\eta_{t+1} = \gamma_{t+1} + \mu v_{t+1}$.

This is equivalent to

$$\text{Prob}\ (\eta_{t+1} > - I_t) \qquad (5)$$

where $I_t = \alpha + \mu\theta_2 H_t - c_t - x$.

Assuming that η is normally distributed, the parameters of Equation (5) can be estimated as a Probit model by the "Maximum Likelihood" method

[2] Such policy disturbance may include Central Bank intervention in the foreign exchange market, to prevent the shadow floating rate from actually emerging.

of estimation. The estimated coefficients are then multiplied by the independent "fundamental" variables to yield predicted values of I_t. The predicted values are then converted to probabilities using the standard normal distribution function as follows

$$\text{Prob}\ (d_{t+1} > 0) = \Phi(\hat{I}_t) \tag{6}$$

where Φ is the standard normal cumulative distribution and $\hat{I}_t$ is the predicted value of I_t based on the Probit regression.

Equation (6) yields a time series of probabilities which can then be plotted.

Specification of OLS regression model

Having established a mechanism for calculating the probability of observing a change in central parity, the next step is to specify the actual regression model with the dependent variable being a vector of these observed central parities. These observed central parities are regressed on "H", a vector of fundamental variables. The regression model takes the form:

$$d_t = \delta H_t + \varepsilon_t \tag{7}$$

where d_t is the change in the log of the central parity, or the expected rate of devaluation. The vector of coefficients, "δ", can be used to generate predicted values of the expected change in central parity or the expected size of devaluation.

Again, using Equations (1) to (3) and by substitution, the expected change in central parity, given that a change has taken place, can be written as

$$E(d_{t+1} / \ d_{t+1} > 0) = \alpha + \beta\theta_2 H_t - c_t + E(\eta_{t+1} / \ d_{t+1} > 0) \tag{8}$$

From Equations (4) and (5) we know that:

$$E(\eta_{t+1} / \ d_{t+1} > 0) \ = \ E(\eta_{t+1} / \ \eta_{t+1} > - I_t) \tag{9}$$

Because we are omitting all observations where $\eta_{t+1} \leq - I_t$, the mean of the residuals in η_{t+1} is non-zero which produces a sample selection problem. Recall that the central rate is treated as a censored variable. We are only observing changes in the £IR/DM central rate despite the fact that the exchange rate also moves around freely. Thus, we are only observing part of the £IR/DM distribution. As a result, the mean of the normal distribution is

no longer zero which gives rise to a specification problem for the OLS regression.

We address this problem using the Heckman procedure. This two-step estimation procedure involves:

1. Estimating the Probit equation (Equation (5)), over the entire sample, by maximum likelihood to obtain estimates of It. For each observation in the selected sample, compute:

$$\lambda = \phi\ (I/\sigma)\ /\Phi\ (I/\sigma) \tag{10}$$

where Φ is the standard normal cumulative distribution function, ϕ is the associated density function, and σ is the standard deviation of the residual η.

2. Re-writing Equation (8) using the formula for the mean of a truncated normal distribution[3] to give:

$$E(d_{t+1}\ /\ d_{t+1} > 0) = \alpha + \beta\theta_2 H_t - c_t + \sigma\lambda_{t+1}$$

(11)

The correction term λ, calculated in the first step, is used as an additional variable in Equation (11). Using only positive values of d_t, we then estimate (11) by ordinary least squares (OLS).[4]

Calculation of Devaluation Expectations

As mentioned earlier, only part of the normal distribution is being observed due to the fact that the central parity is treated as a censored variable. As such, a continuous distribution of devaluation expectations is calculated as a product of two separate entities; namely, (1) the probability that the central parity is in the selected part of the distribution, and, (2) the expected changes in central parity within that part of the distribution. For example: a devaluation probability of 0.4 is interpreted as a 40 per cent chance of a change in central parity; an additional value of 0.1 indicates an expected change in the central rate of 10 per cent. Thus, the unconditional expected devaluation rate is calculated as the product of (1) and (2), in this example, 4 per cent (0.40 x 0.10). In terms of the methodology outlined

[3] See Appendix C.

[4] The entire Econometric analysis(Probit, OLS, "Heckman" Procedure) is carried out using the Shazam 7.0 statistical package.

above, this represents the product of Equation (6) and Equation (11) which can be specified as a continuous distribution of devaluation expectations as follows:

$$E(d_{t+1}) = Prob\ (d_{t+1} > 0) * E(d_{t+1} / \ d_{t+1} > 0) \qquad (12)$$

The estimates of Equation (12) can be interpreted as devaluation expectations over time.

Which Fundamentals?

Hitherto, the discussion of the econometric model did not include an examination of the fundamental vector "H". There is little agreement in the literature as to what variables should be included in such a vector. Even allowing for differences in definitions, there is considerable heterogeneity in the results, regarding the importance of different variables in determining devaluation expectations (Moreno, 1995).

There is no reliance on any particular model of exchange rate determination. The approach, rather, is to look for systematic relations between actual devaluations and fundamental economic conditions. While the obvious candidates for inclusion as fundamentals in "H" are the variables figuring in the monetary model of a pegged exchange rate regime (output, prices etc.), there is no reason to insist on this. Simply by respecifying the list of fundamentals, the same framework can accommodate any other economic variable.

Money stock (m) is included to facilitate a discussion on the importance of monetary policy in forming devaluation expectations. Such a discussion may lead to clearer thinking on the possible effects of surrendering monetary autonomy through joining EMU. While domestic credit growth may be a more appropriate indicator of monetary policy, we use data on money stock to facilitate comparability of our results with previous estimates on the Irish economy (O'Donnell, 1995) and also with previous Probit estimates (Edin and Vredin, 1993), both of which use money stock.

The inclusion of the real Stg£/IR£ exchange rate (rer) highlights the strong link between the Irish and UK economies. Ireland's entry into EMU without the UK, a depreciation of sterling threatens Ireland's competitiveness with the UK imposing a real cost on the Irish economy in terms of a deterioration of the balance of trade and higher unemployment. For Ireland, the volume of imports (imp), volume of exports (exp) and unemployment (U) are included to analyse the cost of an overvalued exchange rate. We also follow Edin and

Vredin (1993) and include the foreign interest rate as an influence on the expected devaluation rate; the obvious choice here is to include German interest rate (r*). The German-Irish inflation differential (π) are also included in "H".

The domestic price level and domestic interest rate are treated as endogenous and are not included as explanatory variables in the analysis. The domestic price level is eliminated through the definition of the real exchange rate which is calculated using the wholesale price index:

$$rer_t = s_t - p_t^* + p_t \tag{13}$$

where rer_t is the (log of the) real Stg£/IR£ exchange rate p_t^* and p_t are the foreign and domestic price levels respectively.

The domestic interest rate is eliminated through the assumption of uncovered interest rate parity:

$$r_t = r_t^* + E(s_{t+1} - s_t) \tag{14}$$

where r_t is the domestic interest rate, r_t^* is the foreign interest rate, and $E(s_{t+1} - s_t)$ is the expected future depreciation of the domestic currency.

All data are monthly and cover the time period 1979-1994. Our motivation for using monthly data arises from the use of a Probit model which requires at least 50 degrees of freedom; thus over the sample period here, quarterly data would have provided just 60 observations, whereas monthly data provided over 170 degrees of freedom. Furthermore, the use of monthly data facilitates comparability of our results with other Probit models which have used monthly data.[5]

III EMPIRICAL RESULTS

> I think that the Irish pound, as far as fundamentals are concerned, is on solid ground, and I don't see the need for a change in their central rates....I am sure, because of the economic fundamentals, that the Irish pound can survive at the present rates.
>
> Bundesbank Vice President Mr. Tietmeyer 1/12/92

[5] Data definitions and sources are detailed in Appendix A.

Table 1: Two-Stage Parameter Estimates of Probit and OLS Regressions

Dependent Variable	Pr (dt > 0)	(dt / dt > 0)
Intercept	-80.144-	0.71787
	(38.5930)[1]	(3.504)
c_{t-1}	-17.255 *2	0.069256
	(8.6112)	(0.09662)
m_{t-1}	6.5132 *	0.10713
	(3.78020)	(0.5051)
imp_{t-1}	-2.229	
	(2.2512)	
exp_{t-1}	0.35306	
	(2.2163)	
rer_{t-1}	17.880 *	0.10168
	(6.5829)	(0.5628)
π_{t-1}	0.019277	
	(0.092992)	
r^*_{t-1}	0.10480	
	(0.15428)	
U_{t-1}	1.4331	0.02808
	(1.6172)	(0.09483)
λ_t		0.0087197
		(0.04548)
R^2		0.9167
n	192	8
No. of Devaluations	8	8

Notes: 1. Standard errors are in parentheses.
2. * indicates significance at the 10 per cent level of significance.
3. All variables, except r* and the German-Irish inflation differential, are in logs and are lagged one period.

[6] The specification of (H_t) for the OLS regression is slightly different. Given that there are only 8 observations in the sample where a devaluation actually took place, the number of explanatory variables included in (H_t) is reduced to conserve degrees of freedom. Therefore, there are only 4 explanatory variables specified in (H_t) in Equation (9). These are the lagged central parity, money stock, the real Stg£/IR£ exchange rate and unemployment. Again, these variables are in logs and lagged one period.

Table 1 shows the two-stage parameter estimates of the Probit and OLS regressions. The first column shows the results of the Probit regression (Eq.(6)) while the corresponding estimates of the OLS regression (Equation (11)) are presented in the second column.

The real Stg£/IR£ exchange rate and money stock have a significant positive influence on the probability of a devaluation. On the other hand, the lagged central parity exerts a significant negative influence on devaluation probabilities. This result is intuitive in the fact that a depreciation of the central parity (a devaluation) in this period significantly reduces the probability of a devaluation in the next period. The significance of the real Stg£/IR£ exchange rate shows that competitiveness with the UK is a major influence on the probability of a devaluation of the Irish pound within the ERM. This result is consistent with previous results in Honohan and Conroy (1994), Walsh (1993) and Thom (1995) although the results here are obtained using a somewhat different methodology. Although Ireland's joining the EMS formally broke a 150 year link with Sterling, there would still appear to be an informal "competitiveness target zone" vis-à-vis the UK.

The positive influence of money stock on devaluation probabilities is consistent with the monetary approach to exchange rate determination. Increases in money stock can fuel inflationary expectations which can lead to higher expectations of a devaluation due to the threat of a loss in competitiveness.

The insignificance of the German-Irish inflation differential may imply that a central bank's reputation, with respect to inflation, is more important in influencing devaluation expectations than the convergence of inflation rates prior to joining a monetary union. This point is also made in De Grauwe (1994) with regard to the difficulties, which can be experienced by countries like Italy, in trying to bring down inflation when the Banca d'Italia has a poor anti-inflationary reputation.

In comparing the coefficient estimates from the Probit regression with those from the selection-corrected OLS, none of the fundamentals in the OLS regression were significant. However, we know from the Probit model that since the probability of a devaluation is generated using information on fundamentals, which are significant in that model, and that these probabilities in turn are used to generate the expected devaluation rate over time; this indicates that fundamentals are in fact important in influencing devaluation expectations. Thus, if one was relying solely on the results from the selection-corrected OLS model, this may lead to incorrect inference regarding the importance of fundamentals in determining the devaluation

rate; furthermore, the results here indicate that the Probit model appears to capture important timing elements influencing devaluation risk which may not be reflected in other models. This could be taken as evidence either that the fundamentals which influence devaluation expectations are more likely to be indicated by the Probit model than the OLS, or alternatively that certain fundamentals are likely to be critical in influencing the probability of the timing of a devaluation or change in central parity, a feature which is not captured by the OLS model.

The selection-corrected estimates of the expected rate of devaluation are reported in the second column. These are rather disappointing in that none of the explanatory variables enter significantly. Notwithstanding the selection bias, accounted for by "Heckman's Lambda", the OLS regression was carried out on eight observations with only one degree of freedom. This is essentially a data problem as devaluations are relatively rare events.

Figure 1: Estimated Devaluation Probabilities for the Irish Pound 1979-1994

Figure 2: Estimated Devaluation Expectations of the Irish Pound 1979-1994

Turning now to the devaluation expectations. As set out in the methodology, Equation (6) yields actual probabilities of devaluations which can be plotted over time. Using the estimates in Table 1, predicted values of the probability and expected rate of devaluation are calculated, with the former values depicted in Figure 1. An important aspect of Figure 1 is the time dimension of the estimated devaluation probabilities. That is, the Probit model seems to perform particularly well in predicting the timing of the actual devaluations which have occurred. Furthermore, in comparing Figures 1 and 2 the patterns are almost identical, that is, the devaluation expectations and the devaluation probabilities. However the important thing to note here is the difference in scale when we move from Figure 1 to Figure 2; the latter is generated when the discrete probabilities are multiplied by the conditional expectations (Equation (11)) and this generates the continuous expected devaluations (Equation (12)). Thus, when this adjustment to the discrete probabilities is made, we end up with expected rates of devaluations which are close to what actually occurred. For example, in 1993 the probability of a devaluation based on fundamental factors was approximately 30 per cent; but the same datapoint in Figure 2 indicates an expected devaluation of 12 per cent, which is very close to the actual devaluation of 10 per cent in January 1993.

Second, with regard to the general trends evident in Figure 2, there are five distinct periods of high and variable devaluation expectations. These are (i) January 1979 to January 1980; (ii) May 1981 to April 1983; (iii) October 1984 to January 1987; (iv) October 1989 to February 1990; (v) September 1992 to January 1993. There is virtually no expectation of a devaluation for time periods other than the five selected time periods above. For periods two, three and five, a spell of relatively high and variable expectations has culminated in a devaluation. In addition to these general trends, the results also perform well regarding the actual size of the devaluations as can be seen by comparing the values indicated in Figure 2 around the times of actual realignments, with the actual size of those realignments, set out in Appendix B.[7] These estimates thus indicate that in between the periods outlined above, Ireland's exchange rate policy was not dogged by a lack of credibility.

[7] On this point, there is the question of the extent to which the results generated here by the Probit model are peculiar to the Irish data set. That is, would the Probit model perform as well in predicting the timing of realignments for other exchange rate regimes? We have applied the model to pooled time series data for Denmark, Spain and Portugal (given the frequency of realignments) and results indicated that the probability of a realignment matched closely actual realignments. We do not report these results here but they are available from the authors upon request.

IV COMPARISON WITH EXISTING EVIDENCE

As stated at the outset, most previous studies on exchange rate expectations are based on the assumption of UIP. An issue of interest then, is how the estimates generated here from the Probit model compare with those generated from UIP; in particular we are interested in comparing these two sets of estimates for Ireland. Recall that the latter estimates will be based entirely on interest rate differentials which are adjusted for the expected rate of depreciation within the band. Below, devaluation expectations for Ireland based on UIP calculated by O'Donnell (1995) are presented; these estimates are similar to those generated by Bartolini (1995) for Ireland, although the method of estimation and time period differed slightly in both studies.[8]

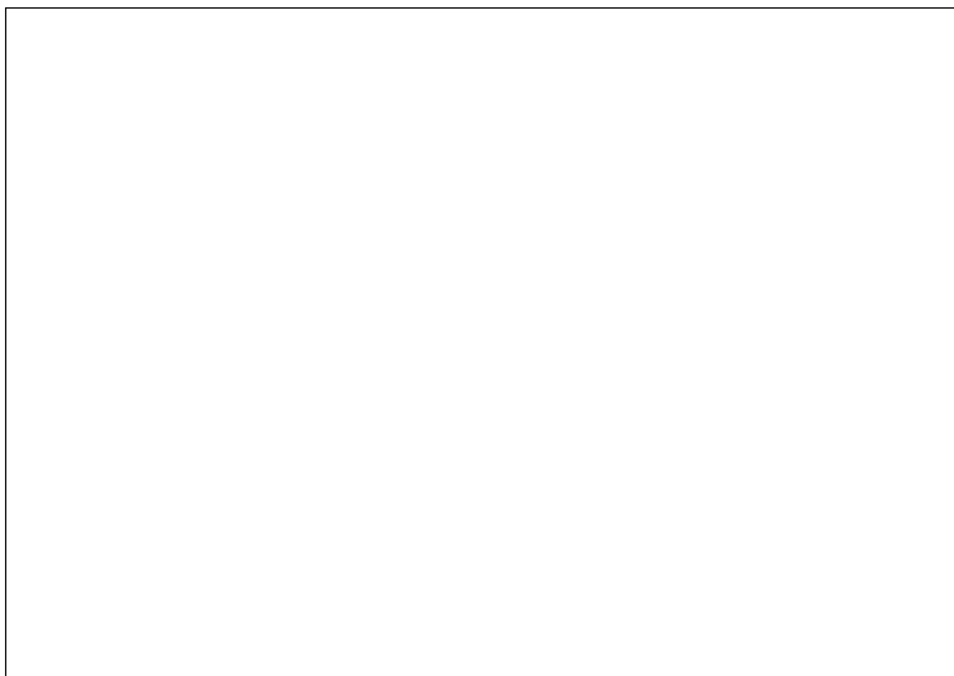

Figure 3: Estimated Devaluation Expectations DM/IR£, based on UIP

[8] Knot (1998) also estimates devaluation expectations for the Irish pound against the DM but with a view to using these estimates in Granger causality tests to uncover fundamental determinants of these devaluation expectations and so do not present the estimates themselves; however, these were "UIP" estimates based on Svensson's drift adjustment method, as in O'Donnell and Bartolini.

Source: O'Donnell (1995).

Comparing the trend here with that in Figure 2, we find that the development of devaluation expectations over the period in both studies is broadly similar. What this means, in essence, is that the devaluation expectations based on the Probit model are consistent with earlier estimates based on UIP. What additional insight then is provided by the Probit estimates? First, the probability of a devaluation is an important feature of the Probit model not captured in the devaluation expectations generated by UIP. Second, since this probability is estimated using only a vector of fundamentals, we are provided with a link between individual fundamentals and the probability of a devaluation at any given point of time, a feature again absent from the UIP model; of course fundamentals can still be linked to the size of an expected devaluation in the UIP model (by regressing the expected rates of devaluation on a set of fundamentals), but no account is taken of the probability of a devaluation. Considering the two models then, the UIP model illustrates how interest rate differentials influence devaluation expectations, while the Probit model indicates how devaluation expectations are determined by fundamentals and in this way, the two models are complementary to each other, rather than one being a substitute for the other.

In comparing the significance of fundamentals in the Probit model with those significant in other studies, we find first that our results are consistent with other Probit generated results for the Irish pound by Otker and Pazarbasioglu (1997). They are also consistent with the results from Edin and Vredin (1993) who find the real exchange rate has a significant effect on the probability of a devaluation in the Nordic countries. Bartolini (1995) found that the real exchange rate was significant in influencing devaluation expectations (based on UIP) of the IR£ vis-à-vis our ERM partner currencies, as did Knot (1998). However, other studies (for example, Chen and Giovannini (1997), Lindberg et al. (1993), Rose and Svensson (1994)) which include the real exchange rate found that it did not have a significant effect on devaluation expectations for either the Irish pound or various other ERM currencies. The Stg£/IR£ nominal exchange rate was also significant in influencing devaluation expectations based on UIP in both O'Donnell and Bartolini and the link with the UK is also evident in the significance in that study of nominal wages vis-à-vis the UK in O'Donnell (1995);[9] thus again, there is a degree of consistency between the UIP and Probit models.

Chen and Giovannini (1997) and Lindberg et al. (1993) also include money

[9] Knot (1998) finds also that inflation, unemployment and the current account "Granger cause" devaluation expectations for the Irish pound vis-à-vis the DM.

stock, as do Rose and Svensson (1994), but again, in all instances it is not

found to have a significant effect on the formulation of devaluation expectations generated based on UIP, whereas it is significant here in influencing the probability of a devaluation and also in Edin and Vredin's paper. Siklos and Tarajos (1996) also found that domestic money stock had a significant influence on devaluation expectations for Belgium, France, Italy and the Netherlands, generated using Edin and Vredin's methodology. This suggests that the significance of certain fundamentals may be related to the methodology employed. Thus, in an attempt to uncover the fundamentals important in determining devaluation expectations, it may be worthwhile to re-estimate devaluation expectations using the Probit model which were previously estimated based on UIP.

V CONCLUSIONS

This paper set out to empirically estimate devaluation expectations for the Irish pound during EMS membership. The methodology used to generate these estimates was based on the assumption that a devaluation is related to certain fundamentals. The results of this Probit model indicated that in particular the real Stg£/IR£ exchange rate and money stock were significant in determining devaluation expectations. The insignificance of other fundamental variables included here is consistent with findings from similar empirical studies in this area. The results also indicated that the significance of particular fundamentals may be related to the methodology employed.

With regard to the estimates of both the probability of a devaluation and the size of the devaluation, the Probit model performed well on both counts in predicting the timing and size of actual devaluations. Furthermore, a comparison of the Probit based estimates with previous estimates based on the assumption of UIP indicated that since the two estimates were fairly consistent, UIP appears to be a reasonable assumption for Ireland during the period of this study.

Finally, the implications of these results for countries which may aspire to joining a monetary union is that careful consideration should be given to the cause of any exchange rate instability. For Ireland, elements other than those specified in the Maastricht Treaty were significant in the formulation of devaluation expectations, thus the argument can be made for differential treatment of internal versus external factors which contribute to exchange rate instability in assessing a country's eligibility to join a monetary union.

APPENDIX A

Data Definitions and Sources

Pr ($d_t > 0$) : Binary choice variable; 1 if a devaluation took place, 0 if not.

c_{t-1} : The one-month lag of the prevailing central parity (IR£/DM central rate), Central Bank Quarterly Bulletin, various issues 1979-1994.

m_{t-1} : The one-month lag of the money supply(M1), Statistical Appendix, Table10, Central Bank Quarterly Bulletin, various issues 1979-1994.

imp_{t-1} : The one-month lag of the volume of Irish Imports(index 1979=100), EIRESTAT, Data Bank of Central Statistics Office, File TSAM203, Dublin, 1996.

exp_{t-1} : The one-month lag of the volume of Irish Exports(index 1979=100), EIRESTAT, Data Bank of Central Statistics Office, File TSAM202, Dublin, 1996.

rer_{t-1} : The one-month lag of the Real Stg£/IR£ Exchange Rate. Nominal Stg£/IR£,Statistical Appendix, Table 75, Central Bank Quarterly Bulletin, various issues 1979-94. Real exchange rates calculated using the monthly Wholesale price index for Ireland. Wholesale Price Indices available from Datastream, OECD Databank, Program 150C.

π_{t-1} : The one-month lag of the German-Irish Inflation differential. Wholesale Price Indices available from Datastream, OECD Databank, Program 150C.

r^*_{t-1} : The one-month lag of the German 3-month interbank lending rate, IMF, International Financial Statistics Yearbook, line 71, various issues 1979-94.

U_{t-1} : The one-month lag of the number of registered unemployed in Ireland, Datastream, OECD Databank, Program 150C.

λ_t : Heckman's sample selection bias-correction term.

Note: All Data seasonally unadjusted.

APPENDIX B

Realignment Dates and IR£/DM Central Parities

Date	Central Parity	Per Cent Devaluation
February, 1979	0.263932	
September, 1979	0.269212	2.0
October, 1981	0.284018	5.5
June, 1982	0.296090	4.25
March, 1983	0.323703	9.0
April, 1986	0.333416	3.0
August, 1986	0.362405	8.0
January, 1987	0.373281	3.0
January, 1993	0.414757	10.0

Source: O'Donnell (1995).

APPENDIX C

If x is normally distributed with a mean μ a variance σ^2, and α is a constant,

$$E[x/truncation] = \mu + \sigma\lambda(\alpha)$$

where $\alpha = (a - \mu)/\sigma$ and

$\lambda(\alpha) = \phi(\alpha)/1 - \Phi(\alpha)$ if truncation is $x > a$.

The function $\lambda(\alpha)$ is called the inverse Mill's ratio. It is also known as the hazard function for the distribution. A useful way of viewing truncation is in terms of the probability that x is less than a. This would be a measure of the degree of truncation and would be an increasing function of a. As this probability rises, a greater proportion of the distribution is being discarded, and the mean rises accordingly.

Heckman (1979) uses this function to account for the degree of truncation in the OLS regression (Equation 7) when only the observations in which a devaluation actually took place are included. "Heckman's Lambda" was

calculated from the Probit equation (Equation 6).

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Why Ireland? A Qualitative Review of the Factors Influencing the Location of US Multinationals in Ireland with Particular Reference to the Impact of Labour Issues*

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Abstract: The encouragement of foreign direct investment (FDI) represents a key plank of industrial policy in Ireland. This paper considers the impact of labour issues on the decision of US multinational corporations (MNCs) to locate facilities in Ireland. Drawing on data gathered in ten major US corporations, and from executives employed in the main industrial promotions agencies, this paper evaluates the relative impact of labour issues on the location of MNCs. While our findings point to the critical significance of Ireland's low corporate tax regime in attracting US FDI to Ireland, they also identify the relative impact of issues such as labour supply, quality and cost, and broader human resource management factors such as labour flexibility and trade union recognition, on the location decision of inward investing MNCs.

I INTRODUCTION

Much has been made of the contribution of labour issues to the growth of foreign direct investment (FDI) in Ireland over the past twenty years. Of particular significance in this regard has been the argued quality and supply of labour (O'Hearn, 1998; Tansey, 1998; Arrow 1997; Wrynn, 1997). Other related dimensions such as labour costs, labour flexibility and industrial relations harmony have also been identified by some commentators as

*The fieldwork for this study was undertaken while the first author was on a Fulbright Scholarship in the Department of Management, San Diego State University. He would like to acknowledge the financial support of the Fulbright Commission and the assistance of the Industrial Development Agency and Shannon Development Company.

important contributors to Ireland's attractiveness as a site for FDI (O'Grada, 1997). More conventionally, it might be argued that direct (e.g., grants) and indirect (particularly low corporation tax) financial incentives have been the major factors stimulating FDI growth in Ireland.

However, when we look for research evidence to inform our interpretation of the contribution of labour issues to growth in FDI we find a dearth of information. In reviewing the contemporary literature, it is hardly surprising that much emphasis has been placed on the outcomes of direct investment by multinational corporations (MNCs) in the Irish economy. However, there appears to be limited independent analysis of the drivers of such investment. The best available data is based on survey-type research, principally conducted by Hannigan (1999, 2000). This data drawn from surveys of MNCs which have located in Ireland, helps identify the factors deemed critical to the competitiveness of their Irish operations.

Useful though this data is, it is limited by the inevitable snapshot profile of survey based research. In particular, it does not provide an in-depth perspective on the process which MNCs follow in making location decisions and the relative significance of different factors in influencing the final decision. It is also based solely on input from executives working in the Irish subsidiary. This paper aims to add to the body of knowledge on FDI in Ireland by providing qualitative evidence on the key factors influencing the location decision of inward-investing MNCs using data collected from interviews with senior executives in the corporate head-quarters of ten large "blue-chip" US firms with very significant subsidiary operations in Ireland. The paper also provides some insights on the perceived comparative advantage of Ireland as a location for inward investment. In light of the rapid changes occurring in the labour market in recent years, particularly in the areas of labour availability and cost, this paper should be read in the historical context in which it is set: namely, that the research data was collected at a time when the Irish labour market was much much looser, with fewer skills shortages and a greater supply of skilled labour.

II BACKGROUND

A critical aspect of Irish Government policy is the attraction of foreign direct investment through incentives to multinational companies to establish facilities in Ireland. There are now over 1,200 overseas manufacturing and internationally traded services companies operating in Ireland which employ approximately 135,000 people with a particular focus on electronics, pharmaceuticals, healthcare, software and "teleservices" (Hannigan, 1999,

2000; Tansey, 1998). Employment in MNCs accounts for roughly one-third of the industrial workforce. These foreign owned companies account for 55 per cent of manufactured output and some 70 per cent of industrial exports. The main sources of FDI in Ireland are the US, the UK, and Germany. US owned firms have a particularly strong presence in Ireland: over 400 such firms employ over 50,000 people.

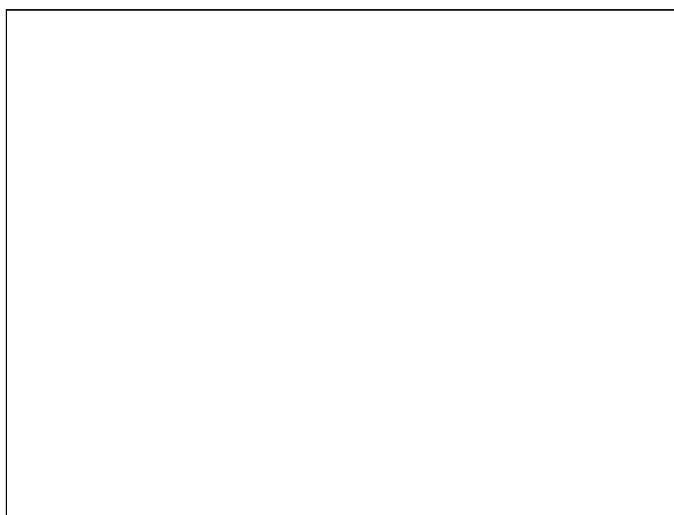
Recent years have also witnessed significant growth in the scale of FDI in Ireland. The ten year period 1987-1997 saw a 50 per cent increase in the number of foreign multinationals investing in the Irish economy (OECD, 1997). In terms of investment, OECD data reveals that there has been a threefold increase in FDI inflows to Ireland since 1990, with the US now accounting for almost 85 per cent of all such inflows (see Table 1 and Figure 1).

Table 1: Direct Investment Inflows to Ireland 1990-1998 (IR£ Million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total Inflow	125	232	221	261	207	235	360	383	415
1990 (Base Year = 100)	100	186	177	209	166	188	288	306	332
US Inflow	65	113	135	192	153	184	300	323	324
1990 (Base Year = 100)	100	174	208	295	235	283	461	497	498

Figures compiled by data published by OECD.

Figure 1: Origin of FDI Inflows to Ireland 1998



The net effect of Ireland's policy of targeting mobile foreign investment is evidenced today in the locating in Ireland of close to one-quarter (24 per cent) of all available US manufacturing investments in Europe, and close to 14 per cent of all FDI projects locating in Europe (The Economist, 1997). Since 1980, 40 per cent of all new US inward investment in European electronics has come to Ireland while nearly one-third of all personal computers sold in Europe are now made in Ireland (The Economist, 1997). In 1995 Ireland was the ninth most important global location for US direct investment (sixth most important in Europe; third in 1994). The Industrial Development Agency (IDA) estimates that Ireland is by some way the most profitable European location for US manufacturing firms, providing a return on investment of approximately 25 per cent over the past decade, significantly higher than the EU average (IDA, 1999).

One of the major reasons proffered for such high FDI inward investment is the volume of Government aid on offer, such as a generous subsidy programme based partly on the promise of jobs but also including, where appropriate, rent subsidies, offsets against capital investment, and a low tax rate for profits derived from "manufacturing and qualifying services". However, aside from Government incentives, the Irish economy was able to offer a ready supply of scientific-technical labour at an affordable cost to satisfy the needs of US corporations looking for access to the European market (McGovern, 1998).

Investment by multinationals has brought considerable benefits to the Irish economy. Apart from the obvious benefits of increased employment and economic prosperity, Tansey (1998) points to the modernisation of the Irish industrial base and the rapid growth in national productivity as a direct consequence of inward investment. As a result, Ireland's capacity to absorb technological change at national level increased, leading to an enhanced capacity to compete in international markets.

However, despite the high level of inward investment and employment generated by foreign multinationals in Ireland, they have nonetheless attracted their fair share of criticism. Kennedy (1991) and Tansey (1998) argue that the true value of foreign multinationals to the Irish economy is masked by the high levels of profit repatriation taking place, given Ireland's low rate of corporation tax. Furthermore, they argue that the long-term commitment of inward-investing multinationals to the Irish economy may be contingent on the continuation of low levels of corporation tax and cite the lack of domestic linkages created by multinationals as a cause for concern. Indeed, the level of domestic linkages in the economy has long been a recurrent theme in the literature dealing with multinationals in Ireland.

Some commentators have pointed to the same particular "downsides" of Ireland's reliance on FDI, such as the following: (a) many are located in very volatile sectors (it is estimated that 15 per cent of Irish electronics jobs are "high risk" and that many more "medium risk": (McGowan, 1996); (b) transfer pricing and high profit repatriation: many are confined to low level activities which are quite "footloose"; (c) there is a low research and development component and (d) many have weak linkages into the domestic economy.

III METHODOLOGY

The divergence of academic opinion regarding the factors influencing the location decision of multinationals highlights the need for more independent data on the relative attractions of Ireland as a location for FDI. Such an analysis can also inform future industrial policy in this area. This paper aims to analyse the key factors influencing the location decision of inward-investing US firms with particular focus on the impact of labour issues. Despite a threefold increase in FDI inflows to Ireland over the period 1990-1997, there are currently no qualitative studies addressing the factors influencing the location of inward investment in Ireland. Of particular concern is the lack of research data on corporate level decision making at US headquarter level. In seeking to bridge this gap, this paper seeks to identify the key factors impacting on the location decision of US corporations which have established significant subsidiary operations in Ireland.

Initial data on the extent and origin of FDI in Ireland over the relevant period was secured via the assistance of the main Irish industrial promotions agencies, particularly the IDA and Shannon Development. Primary research subsequently took place in the US over a ten-month period. It consisted of interviews (personal and telephone), company visits and review of secondary data on these corporations (company publications, annual reports, independent industry analyses and newspaper material). Ten corporations were selected for this research. The major criterion used in selecting firms was the scale of investment (bias towards large investment).The selection of firms was facilitated through discussions with senior US based executives in Ireland's main industrial promotions agencies. This was particularly helpful in identifying individuals who had played a critical role in their Corporation's decision to locate a subsidiary in Ireland. A profile of the firms involved is outlined in Table 2. Based on advice from the Irish industrial promotions agencies, the first author made initial contact with the individuals identified and arranged for an in-depth interview based on a semi-formal schedule as discussed below. The primary research component also entailed face to face

interviews with four US based senior executives in Ireland's industrial promotions agencies. These executives all had significant experience in promoting Ireland as a site for FDI. While each specialised in different industrial sectors, together these executives were responsible for the attraction to Ireland of the most significant and extensive FDI projects the country has seen to date.

Table 2: Company Profile

	Industry Sector	No. of Employees worldwide*	No. of Employees in Ireland*	Irish Subsidiary**	Interviewee
Company A***	Electronics	400	40	Top 350 Irish Co.	Chief Financial Officer
Company B	Electronics	13,000	750	Top 40 Irish Co.	VP Manufacturing
Company C	Software	30,000	400	Top 20 Irish Co.	Director and VP Taxation
Company D	Office Equipment	110,000	770	Top 120 Irish Co.	World-Wide Manufacturing Strategy Co-ordination Manager
Company E	Electronics	8,050	120	Top 340 Irish Co.	President
Company F	Mechanical Engineering	65,000	200	Not Listed	Corporate Director HR
Company G	Electronics	1,200	200	Top 160 Irish Co.	VP Strategy
Company H	Electronics	32,600	4,200	Top 10 Irish Co.	VP HR
Company I	Electronics	2,400	150	Not Listed	VP International Operations
Company J	Electronics	6,900	1,100	Top 90 Irish Co.	VP HR

Notes: * Employment size at time of interview (most of these firms have significantly increased employment in the Irish subsidiary since then).
** Performance of Irish subsidiary was measured by reference to Top 1,000 Companies published in Business & Finance (1999).
*** Company A was selected because of the status it attained as one of the fastest growing high-tech companies in Fortune magazines business listings (1997).

The ten companies currently employ over 14,000 employees in Ireland and have a cumulative turnover for their Irish operations of £5,600 million. This indicates the important role which these companies play in the Irish economy. Geographically, eight of the companies located their Irish subsidiaries in close proximity to Dublin, with one company in the mid-west and another based in the west of Ireland. Seven of the ten firms established their Irish operations

in the 1990s, one in the 1980s and two in the 1970s. All are well known companies and eight are named in the Business & Finance listings (1999) of the top Irish companies. The two "non-listed" firms are themselves part of very significant international corporations.

The interviews followed a deliberate schedule as summarised in Appendix 1. The interviews focused on the key factors influencing the respondent organisation's decision to locate in Ireland. The particular labour issues explored were labour availability, labour quality, labour costs, labour regulation and industrial relations/human resource management. The interviews entailed a strong comparative dimension both in relation to each Corporation's US operations, other foreign operations and the process through which one country is selected over another for FDI. As noted earlier, these interviews were conducted over a ten-month period, with senior executives of US multinationals in the ten selected corporations. In all cases, the interviewees either led or played a key role in the management team vested with responsibility for locating their corporation's subsidiary in Ireland. A number of these executives were subsequently involved in the start-up stages of the Irish subsidiary. However, all remain employed at headquarters level and thus retain the capacity to provide a corporate perspective on both Ireland as an FDI location and on the performance of the Irish subsidiary. The interviews with senior executives in Ireland's industrial promotions agencies followed a broadly similar schedule but focused on the general experience of respondents in selling Ireland as a site for FDI to leading US Corporations.

Clearly, it should be recognised that the small sample size does not allow us to draw definitive conclusions from the data collected. However, our data does provide valuable insights into the context and process through which an investment location is decided upon by major multinational corporations.

IV FINDINGS

The following sections contain the findings of the primary research data collected. The key factors in the location decision of multinationals are first identified and thereafter follows a discussion on the five specific issues of labour availability, education standards, labour quality, labour cost and labour regulation.

Decision to Locate in Ireland

The results of the research appear to confirm the importance being placed on labour factors in the location decision of inward investing multinational companies. However, for most organisations the critical factor positively influencing the final decision in Ireland's favour was its low rate of

corporation tax. While this finding stands in stark contrast to the work of Wheeler and Mody (1992) who, in studying the investment location decisions of US electronics firms found that such firms exhibit little or no sensitivity to differences in tax rates, it seems to confirm the widely held opinion that Ireland's low level of corporation tax is a key factor underpinning the country's success in attracting FDI investment. The following two quotes are indicative of views elicited:

> (In response to question on significance of corporation tax) Critical … very important in differentiating Ireland from Scotland.
>
> Vice President (Manufacturing), Company B.

> (after eliminating other prospective locations in Europe)…This left Ireland and the UK. The grants were the same in both, similarly with labour issues … but when you added in 10 per cent corporation tax, that swung it … no question.
>
> Vice President (Human Resources), Company H.

Table 3: Key Factors in the Decision to Locate in Ireland

Company A	Language	Location in EU	Low Corporation Tax	Labour Availability and Quality
Company B	Location in EU	Low Corporation Tax	Labour Availability and Quality	Education
Company C	Infrastructure	Education	Low Corporation Tax	------------
Company D	Financial Package (inc. Corporation Tax)	Labour Availability and Quality	------------	------------
Company E	Location in EU	Financial Package (inc. Corporation Tax)	------------	------------
Company F	Labour Availability and Quality	Location in EU	Financial Package (inc. Corporation Tax)	------------
Company G	Low Corporation Tax	Financial Package (inc. Corporation Tax)	Labour Availability and Quality	Cultural Identity
Company H	Low Corporation Tax	Financial Package (inc. Corporation Tax)	Labour Regulation	Infrastructure
Company I	Previous Irish Experience	------------	------------	------------
Company J	Labour Availability and Quality	------------	------------	------------

In addition, the need to establish a European base ranked high in the mindsets of top management. While Bacon (1997) predicts that there will be greater competition for FDI from Eastern European countries, our research indicates that respondents expressed a preference to locate within the boundaries of the EU rather than in lower-cost Eastern European countries. It identified the UK and the Netherlands as Ireland's principal competitors in attracting FDI. However, respondents identified perceived high levels of labour regulation in the Netherlands as adding considerably to the cost base there and making investment less attractive. In the UK a number of respondents identified high levels of corporation tax as a significant disincentive for investors.

Table 3 summarises the primary factors listed in order of importance by senior executives in response to questions asking them to identify the key factors influencing their decision to locate in Ireland. Interestingly, where the order of the factors varies considerably, there is little variation in the type of factors listed.

The issue of infrastructure is mentioned specifically in only one case but has been highlighted as a key issue impacting on the extent of inward investment. For example, Hannigan (1999) ranks the issue of infrastructure as the fourth most important factor influencing competitiveness in the Irish economy. Our data suggest that the quality of a country's infrastructure was used as a critical initial criterion for differentiating among locations. However, once it was felt that a particular location had the necessary infrastructural capacity to support the proposed investment, then other factors, such as financial incentives, came into play. In the case interviews, the issues of infrastructure and labour capacity tended to be considered as synonymous. Thus, it is hardly surprising to find that the choice of location within Ireland appears to have been influenced by both labour and infrastructural considerations. The desire to be located near the largest employment centre, the proximity of universities and the attraction of an international airport with transatlantic links largely explained why eight of the ten companies studied located within the greater Dublin area. Interestingly, while all of the executives interviewed expressed general satisfaction with the level of infrastructure in Ireland, particular concern was expressed about air travel, particularly the unavailability of adequate direct flights to Europe. Again, one must caution that demands on the nation's – and particularly Dublin's – infrastructure have increased substantially since these interviews were conducted and it is plausible to suggest that infrastructural concerns will have increased in the interim.

Labour Availability and the Tightening Labour Market

Significant change has occurred within the Irish labour market in recent years. Rapid economic growth has fuelled the demand for labour in the economy, particularly in relation to technical and highly skilled workers. Tansey (1998) argues that the sheer scale of labour demand has induced an acceleration in labour supply growth. He cites three factors to explain the increase in labour supply:

1. An increase in the population of working age;
2. A rise in labour force participation, particularly amongst women;
3. A heavy decrease in emigration rates.

While these factors have undoubtedly helped satisfy labour demand, significant shortages are currently being experienced within the economy. Hannigan (1999) highlights the concerns expressed by multinationals that tight conditions in the labour market are impacting on competitiveness and may have a detrimental effect on future growth.

While a plentiful supply of labour has long been considered a major factor influencing multinationals to locate in Ireland, conventional wisdom would now suggest that this factor has decreased in importance in the tightening labour market now being experienced. At the time when the interviews were conducted for this study the level of unemployment was approximately 10 per cent. Consequently, it is hardly surprising that most companies reported few problems with labour supply. One firm had experienced difficulties in attracting qualified sales people with languages and commented on the high turnover of staff within that category. Indeed, the shortage of technical staff with language skills in the Irish economy has been documented and recent government initiatives have endeavoured to redress this imbalance, particularly in attempting to satisfy demand in the teleservices industry. Interviews with executives working for Ireland's industrial promotions agencies indicated their concern with future labour supply. The following quotes from two such executives highlight this concern:

> Labour availability is viewed as positive but there are problem areas emerging: firstly there are shortages in the languages area ...a problem for the future may be the level of person. …secondly we need good technician level people; this has been a hugely neglected area. There is a need for more investment and output of these people.… A good example is XYZ Ltd – [leading US electronics firm in greater Dublin area] – 75% of their jobs are at technician level or above...they will probably get the people but

> other companies will then find shortages. New areas also need a focus in this respect, such as [bridging]the spread of skills in mechanics and electronics.
>
> In terms of labour shortages there are some areas of concern; especially engineering and languages. There is a strong regional factor...many companies want to go to Dublin (quality of life for expatriates, etc): this puts pressures on availability. It is getting difficult to get companies to locate in the country…

A high turnover of employees at management level was identified by one executive as a setback as Ireland continues to attract growing levels of foreign investment. He blamed the specific targeting of individuals by competitor firms and the ability of new companies to pay the salaries demanded as reasons for this occurrence. Several executives also commented on the plentiful supply of blue collar workers and their opinion that this category of worker tended to be "much better" than in the US. However, our research did highlight an expectation of the tightening of the labour market. In fact, three of the companies expressed a readiness for such an occurrence, having adopted measures designed to deal with such an eventuality.

> There may be future skill shortages in the labour market, but we feel we can identify Irish expatriates here in the US, who may be even better trained in (our) corporate culture who want to go back to Ireland.
>
> Vice-President, (Strategy) Company G.

Education Standards

The quality of the Irish education system and the existence of a high skills labour pool has long been recognised as being critically important to the attraction of inward investment. A growing awareness of the need to develop human capital has led to substantial improvements in the provision of education in Ireland since the 1960s and has been seen as contributing to sustained growth in the economy (Tansey, 1998; World Investment Report, 1998). Increased investment in education, particularly at second-level has led to Ireland having one of the highest levels of participation in second and third level education of OECD countries (Leddin and Walsh 1998; OECD, 1997). The Irish education system also holds a high ranking in meeting the needs of a competitive economy (World Competitiveness Yearbook, 1998).

In their study of locations attractive to US foreign direct investment, Cooke and Noble (1998) found evidence that a country's education and skill base are by far the most critical factors in determining an industrial relation's

systems attractiveness to foreign investment. Likewise, Hannigan (1999) cites the Irish education system as being the most important factor influencing the competitiveness of multinationals located in Ireland. In this context, both McGovern (1998) and Gunnigle, Morley and Heraty (1997) argue that it was Ireland's unique ability to provide a cheap supply of graduate English-speaking labour, that has aided the IDA and other agencies in successfully attracting large-scale investment from multinational companies.

Despite the many positive attributes of the Irish educational system, several weaknesses exist. Government spending (per capita) on primary and secondary education is the lowest of any EU country and this has been cited as contributing to the high pupil/teacher ratio and the serious deficiencies in educational facilities and capital equipment which exist (Economist Intelligence Unit, 2000; OECD, 1997). Similarly, low overall levels of educational attainment exist (Table 4), particularly among older age groups, although this has been attributed to the low achievement rates of previous generations.

Table 4: Percentage of Population which have Completed Secondary Education by Age Group

	25 - 34	35 - 44	45 - 54	55 - 64
Ireland	64	51	36	27
UK	86	80	72	59
Germany	89	88	84	72
France	86	74	62	42
Spain	47	32	18	10

Note: Figures compiled by data published by OECD.

Moreover, the low level of foreign language proficiency among second and third level graduates has attracted unfavourable international comment (Kenny and Sheikh, 2000; OECD, 1999). In light of the increasing role of foreign trade, growing levels of inward FDI and a burgeoning teleservices sector, the substantial decrease in the numbers of students taking foreign languages to the end of secondary education is a cause of concern (Department of Enterprise and Employment, 1997).

In evaluating labour quality in Ireland, the picture presented in respondent firms is a favourable one. Considering the breadth of knowledge exhibited by US senior executives on the Irish education system, it is clear that this was a critical factor in the location decision. There was a broad

consensus among the firms studied that the overall quality of labour in Ireland was of a high standard. This reinforces the results of earlier research highlighting the high quality of the Irish workforce (Gunnigle, Morley and Heraty, 1997; Hannigan, 2000). When asked to assess comparatively the quality of the Irish workforce with that of their country of origin, respondents in all ten corporations believed that overall educational standards were equivalent or better than in the US. However, respondents made a clear distinction between the standards of education at second and third level.

> In assessing overall standards, I would say Ireland has better standards below college level and is equivalent at the college level. However, at graduate level and research, there is nothing to touch the top US colleges (Cutting edge research, etc.)
>
> Vice-President (Human Resources), Company H.

> We recruit mostly technicians and university graduates. You don't have universities on a par with Stanford or MIT, but the average standard of education is excellent.
>
> Vice President, (Strategy) Company G.

> At high school, Ireland has more structure and discipline but possibly less emphasis on innovation and personal development. At third level, we are getting less Masters level than we were used of in the US.
>
> World-wide Manufacturing Strategy Co-ordination Manager, Company D.

The clear message here, is that broadly speaking the output of Ireland's second and third level education systems is very satisfactory. However, when we look specifically at third level we found that respondents in the firms studied differentiated between the "standard product", for example, graduate engineers or technicians and "cutting edge" post-graduates. In contrast to the leading US Universities, their Irish counterparts are not seen as providing such "cutting edge" graduates as might be required for specialist research and product development work. However, it was also pointed out by respondents that much of this specialist work is undertaken at corporate headquarters and the Irish subsidiary is mostly used for manufacturing/service delivery purposes.

Labour Quality

Given the solid education standards prevalent in the Irish economy, one would expect to find few problems with the quality of the workforce employed by inward investing US firms. Indeed, all the executives interviewed

expressed a high degree of satisfaction with the quality and work ethic of the staff employed. This may be due to the fact that skill levels found in foreign multinationals located in Ireland are higher than those in indigenous industry. Barry et al. (1999) attribute this finding to the fact that foreign multinationals are paying 25 per cent higher wage rates than indigenous industry and thus experience less difficulty in attracting high quality graduates. In comparative terms, labour quality was perceived by executives as being favourably comparable with other investment locations and on a par with standards in the US. In terms of productivity and the performance of the Irish subsidiary, there was again a high level of satisfaction expressed by respondents. Typical of the observations received include:

> In terms of performance to date, we've met or beaten every target that was set. We are on track to stay with the pack. Also our ramp up in Ireland has probably been the fastest we have seen and has been as smooth as possible.
>
> World-Wide Manufacturing Strategy Co-ordination Manager, Company D.

> Ireland is way up there and actually led the way in terms of relative quality. Productivity is very high and team-working is going very well. Also, our new facility got going in record time.
>
> Vice-President (Human Resources) , Company J.

Labour Costs

The nature of a firm's product and the intensity of competition in the marketplace will have a significant bearing on the importance of controlling labour costs as a factor influencing the location of FDI. Indeed, Cooke and Noble (1998) state that firms will first decide whether to locate in a high-skilled or low-skilled economy before looking at specific locations. In relation to the importance of labour costs in Ireland, Hannigan (1999) notes that this issue is less critically important than one might have assumed it to be. However, he points out that wage levels have risen and that they are likely to be pushed up even further in a tight labour market. The issue of wage costs has also been discussed by Gunnigle et al. (1997a and b) and Roche and Geary (1994) who find that foreign-owned companies are more likely to pay "above the norm" increases. Underpinning most of the Irish literature on labour costs has been an attempt to establish the impact of centralised bargaining. Tansey (1998) points to the series of national agreements concluded since 1987 as having the dual effect of moderating pay increases and improving the competitiveness of multinational operations in Ireland. Meanwhile, Sexton et

al. (1996) argues that the presence of a highly skilled workforce combined with moderate wage increases has been the over-riding factors in attracting multinational investment.

In a European context, Ireland compares favourably to other European states in terms of labour costs (see Table 5). It is interesting to note that despite Ireland's Celtic Tiger status, Irish wage rates have yet to eclipse those of our European neighbours, giving Ireland considerable leverage in attracting inward investment.

Table 5: Average Hourly Costs in Manufacturing Industry 1999 (ECUs)

EU - 15	IRL	UK	D	F	E	US	JP
20.3	13.9	13.4*	28.6	22.3	14.8	17.4	19.7

Note: As Published in National Income and Expenditure Data by Eurostat, 1999.
* Represents 1995 figure.

There was a general consensus among respondents that labour costs were comparatively lower in Ireland than in the US, but when indirect labour costs (especially social benefits, etc) were taken into account, the cost of labour in Ireland was seen by respondents as more or less equivalent to the US.

> Labour costs are about the same between the US and Ireland. Irish wage levels are 80% of those in the US, but when social costs are factored in, they ended up around the same.
>
> Chief Financial Officer, Company A.

Labour Regulation

A number of commentators have identified the extent of labour regulation in various European Union states as a negative factor of many inward investing multinational companies, and particularly so in relation to US firms (Dunning, 1993; Sparrow and Hiltrop, 1994). Traditionally, there has been an aversion among MNCs to labour regulation as interfering with the mechanics of the market and restricting their freedom to manage (Dunning, 1993). Recent studies have highlighted a strong negative correlation between levels of labour regulation and levels of direct foreign investment (Cooke, 1997). Indeed Hannigan (1999) points to labour regulation as the weakest area of performance in the Irish economy. He argues that increasing levels of EU

legislation are contributing to high increases in labour costs. Certainly, recent measures such as the Working Time and Parental Leave directives, while significantly improving the rights of employees have seemingly fuelled concerns among US MNCs that such intervention makes some European locations less attractive as sites for FDI by adding to labour costs. More generally, it is sometimes argued that the EU's preferred "social market" approach, characterised by comparatively high levels of labour regulation and strong trade unions, has served to impede competitiveness and employment creation (Grubb and Wells 1993; Sadowski et al., 1995; Sparrow and Hiltrop, 1994). In contrast, the US "free market" approach which apparently affords employers greater autonomy, is often portrayed as a more "effective" alternative in this respect, most particularly in terms of its capacity for employment creation. An important and particular manifestation of this debate is the preferred employment practices of US MNCs in Europe. It is often suggested that US MNCs have been to the fore in promoting more free market/low labour regulation approaches (Dunning, 1993; Cleveland et al., 2000). Crouch and Streeck (1997) argue however, that US MNCs seem to be able to achieve a remarkable degree of autarchy from their social and political environment, which among other things enables them to cross national boundaries with great and growing ease. They argue that the globalisation of markets and the over-dependence on MNCs as providers of employment and contributors to economic growth has led to the decline of the governing capacity of the nation state and the capitulance of Governments to the requirements of multinational corporations.

Cooke and Noble (1998) identify levels of labour regulation and education standards as critical factors in the location of US FDI. Respondents to our study expressed a high degree of "satisfaction" with levels of labour regulation in Ireland, with nine out of ten firms indicating they considered that Ireland compared favourably with other destinations: i.e., they experienced comparatively lower levels of labour regulation here. Thus, Ireland was perceived as having a "pro-employer" focus, particularly in contrast to certain other European countries.

> US Multinationals look very closely at labour regulation – freedom of operation is socialized into their value system. Germany is very regulated, through, for example works councils and employers are in a straight jacket. This encourages a more conservative approach to employment creation. This is not nearly the case in Ireland, which is more employer friendly.
>
> Vice President (Human Resources), Company J.

> In terms of implications of labour regulation, especially in comparison to the UK, if Ireland keeps its advantages in other areas, such as labour quality/supply, then it will be OK, if not, then more labour regulation will be a serious problem and a disincentive to locate here for high-tech companies. This is a very unforgiving sector.
>
> Director and Vice President (Taxation), Company C.

Generally speaking, our findings indicate that the extent of labour regulation is used as a filter mechanism in the primary evaluation of possible sites for location. This suggests that multinationals in the high-tech sector are slow to locate in areas with a high degree of protection of employee rights and where it may be difficult to "downsize" or exit in an economic downturn.

On the industrial relations front, the available evidence suggests that MNCs have been an important source of innovation in management practices, particularly in the application of new management techniques and in expanding the role of the specialist Human Resource (HR) function (Gunnigle, Morley and Heraty, 1997). However, it would also seem that MNCs pose particular and unique challenges in the industrial relations sphere, particularly in their ability to switch the locus of production and also to adopt industrial relations styles which challenge, or indeed undermine the traditional pluralist model. In Ireland, we have seen a dramatic growth in union avoidance over the past decade (McGovern, 1989; Gunnigle, 1995; Gunnigle, Morley and Turner, 1997). This is particularly the case in the high-tech manufacturing sector where we find that the great majority of new large firms are non-union. Our findings reinforce this trend with nine out of ten firms studied operating a non-union policy in their Irish operations.

> (In response to question on the significance of trade unions in the location decision) It was a live issue…very much so. Any country that requires union recognition is immediately stricken off our list of possible locations
>
> Vice President (Human Resources), Company H.

> We don't deal with unions. We don't have a union in the US. It does not fit with our culture.
>
> Vice President (Strategy), Company G.

Other Issues

A number of "other factors" emerged as significant in influencing the decision of the firms studied to locate in Ireland. In particular, the open "pro-business" approach of the Irish government was seen as a positive factor in attracting inward investment. A number of respondents commented

favourably on the commitment of the Government in supporting the establishment of production facilities in Ireland and in gaining access to government ministers and top-level department officials.

> The performance of the Irish government has been very good. It is very pro-business and easy to deal with, especially in comparison to say Singapore or the US. It sees the bigger picture and does not get caught up in rules/details. We have kept expanding our Irish operations and have found the government and its agencies very helpful.
>
> Director and Vice President (Taxation), Company C.

> The issue of access to government and government ministers was also very important. This is excellent in Ireland. I always feel I can get what access I need if I want it. We are a small company and could not get that access elsewhere. Such access can also be important at an EU level.
>
> Corporate Director (Human Resources), Company F.

V CONCLUSION

This paper sets out to provide some qualitative insights on factors impacting on the location of US FDI in Ireland and to tease out the specific impact of labour issues. As noted earlier, it is important to take account of the labour market context in which our data was gathered, given the dramatic changes which have occurred in terms of economic growth and employment creation over recent years.

Our findings point to the critical significance of Ireland's low corporate tax regime in attracting US FDI to Ireland. It also highlights the potential contribution of Ireland's negotiation of a future low rate of corporation tax (12.5 per cent) in retaining investment and attracting future investment. The following quotes from two US based senior executives working for Irish industrial promotions agencies aptly captures the situation:

> (In response to question on the significance of corporation tax in attracting US FDI)… Yes, this is the single biggest incentive. If you can at least draw (tie) on all the other factors with the competition then the corporation tax issues will crack it. In terms of the 2010 deadline, the UK have targeted this as an Irish negative: "they'll suck you in and then crucify you in 2010").

> Yes, this (corporate tax rate) is a huge issue. For many companies it is the difference between Scotland and Ireland rather than the people….the people factor is similar...it's the tax that ties them in. Holland is competing aggressively on tax: they will even go below 10% but are selective...it's negotiable…It's not just manufacturing – the 10% tax is crucial in software as well.

However, we also find that labour supply and labour quality are also significant in positively impacting on the location decision of FDI. It is the combination of these and certain other factors (especially location in the EU, English as first language) which were the primary drivers in the decision of respondent firms to locate in Ireland. Some of these labour factors such as supply and education were clearly pinpointed by respondent executives. However, other less tangible labour factors were also identified as significant, notably labour flexibility and the "work ethic". This agglomeration of labour factors is captured in the following quote from an industrial promotions agency executive who was instrumental in the attraction of recent large scale electronics corporations to Ireland:

> …a critical issue is labor flexibility and adaptability: we hear this again and again. It's what you get in quality of labor for the price you pay. Secondly, the positive demographics is critical – there is good supply in many areas. The availability of good bright people is very important….education is [also] is seen in a very positive light and has a great reputation.

Despite a widely held perception that labour costs have been a critically important factor in the attraction of multinational investment, our findings – which are broadly in line with Hannigan (1999) – indicate that labour cost was not a critical issue in the location decision of the multinational companies studied. Moreover, the issue of labour cost is more clearly linked with the degree of industry sophistication, with many high-tech companies locating in Ireland willing to pay "above the norm" salaries to skilled employees. In terms of labour cost, it seems that Ireland's system of successive centralised agreements at national level have assured multinationals of consistency and stability in controlling labour costs. However, in light of the recent tightening of the labour market, it is clear that many organisations, including multinational subsidiaries are experiencing staff retention difficulties, especially among skilled categories. This is effectively causing an upward pressure on wage levels and Hannigan (1999) reports that multinationals are

becoming increasingly aware of the increasing need to control wage costs.

The issue of labour regulation tends to assume a relatively high degree of importance in the location decision of multinational companies. From the research collected, it appears that the degree of labour regulation is used as a filter mechanism in the primary evaluation of possible locations. Given the profile of multinationals locating in Ireland, it is hardly surprising that US firms have attempted to replicate non-union policies in their Irish operations. However, the main cause for concern among respondents appear to emanate from the volume of labour legislation being enacted by the EU. While this will not affect Ireland in isolation, multinationals are concerned that it is increasing social costs and making their European operations less competitive.

Finally, it is important to note the significance of some of the major FDI projects which have located in Ireland over recent years. The positive experiences of similar high-tech multinationals were cited by a number of respondents as being instrumental in the decision to locate in Ireland. This finding points to mimetic tendencies of US MNCs to copy others – often their rivals – and is in line with previous work by Krugman (1997) and Barry and Bradley (1997, 1999) who argue that this phenomenon may explain the cluster effect of industries in certain regions. In Ireland, the siting of Intel seems to have been particularly influential, as illustrated in the following quote from a senior industrial promotions agency executive:

> The product [i.e., Ireland] we now have to sell is the best in Europe. A critical issue is to point to the other major Fortune 500 companies who have located here. Intel was critical: look at who has followed…HP, UPS. Motorola was also a key. Intel and Motorola are seen as two of the best managed companies in the US.

Appendix 1: Summary of Interview Schedule: Main Areas Investigated re Location Decision

1. Details/Background on Corporation

- Age, scale, product/service portfolio, pattern of operation, performance, strategic issues, etc.

2. Irish Subsidiary

- Location/when established; employment; product/service; assessment of the strategic significance of Irish subsidiary (qualitative estimate)?
- Performance of Irish subsidiary: ramp up, quality, productivity, financial performance. Performance of Irish subsidiary compared to that of other similar facilities in your corporation's portfolio.

3. Decision to Locate in Ireland

- Key factors which led you to locate a subsidiary in Ireland?
- Other countries actively considered as a potential location?
- Factors influencing decision on where to locate within Ireland.

4. Labour Quality

- Assessment of overall labour quality in Irish subsidiary .
- Comparison with subsidiaries in other countries.
- Productivity levels in Ireland and comparison with similar facilities in organisation's portfolio.

5. Labour Availability

- Availability of labour supply among following workforce types (a) hourly/operative level; (b) technical; (c) clerical; (d) middle management; (e) top management.
- Areas of labour shortages.

6. Education Standards

- Assessment of education standards at the following levels: (a) high school equivalent; (b) vocational/technical certificate or diploma; (c) university degree or equivalent.
- Comparison with interviewee's experience in the US and other countries?

7. Labour Costs

- Labour costs as a proportion of your total production/service costs.
- Hourly pay rates for entry level workers in largest occupational category(US$).
- Comparison of Irish labour costs compare with the US and other countries?

8. Flexibility

- Assessment of flexibility/adaptability of your Irish workforce?
- Use of "atypical" work arrangements (e.g., temporary, contract, part-time and home working).

9. Labour Regulation

- Assessment of the extent of labour regulation in Ireland.
- Comparison to the US and other countries where corporation has subsidiaries.
- Does the company deal with trade unions in Irish operation?
- If yes, assessment of how was this decision made and evaluation of experience to date.
- If no, was this a conscious policy choice by the corporation?
- Significance of trade union recognition in decision on whether to locate a facility in Ireland?

10. Human Resource Management (HRM)

- Existence and role of specialist HRM function in Irish operation?
- Key HR priority areas which (from a corporate perspective).
- Use of performance related pay.
- Knowledge/significance of social partnership agreements.

11. General Impression of Ireland as a business location

- State of the Irish economy?
- Performance of Government?
- Business infrastructure in Ireland?
- Main positive aspects of your experience of doing business in Ireland?
- Main negative aspects which you would like to see addressed?

12. Future

- Given hypothetical situation of having to re-make location decision, would you locate in Ireland or elsewhere?
- Assessment of future prospects for Irish operation.

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Land Prices, Urban Sprawl and Affordable Housing: Dublin and the Open City

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Abstract: Dublin's current boom shares many features with urban booms elsewhere. In this short paper, I suggest applying an open city framework to Dublin and looking at this framework's implications for two policies closely related to housing. I conclude with a scheme that should accompany future Dublin development.

I INTRODUCTION

Can it get worse?

> The exodus of working-class residents is creating both commercial problems and political strife. Nurses … went on strike last month to demand wages that would allow them to live closer to where they worked, rather than enduring a commute of several hours. A quarter of the positions in the … police force are empty because officers, unable to live near the town, have resigned…. Hence the cry for more 'affordable housing': subsidised accommodation reserved for those who work nearby and cannot afford the market rates. (Economist, July 22nd 2000)

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To be sure, this is an article on Palo Alto in California, not on Dublin. But policy issues seem strikingly similar. Maybe we can hope for remedies from looking at elements common to any urban boom? To focus on these, this paper will skip over most intricacies of Dublin urban life. Surely, this will make the paper's conclusions more controversial – as they should be, also given the paper's emphasis on long-run ("equilibrium") phenomena.

In the five year period between 1996 and 2000, average new house prices in Dublin have almost tripled. Clearly, it seems, most shifts in housing demand have outpaced shifts in housing supply. On the one hand, demand, according to this view, has been driven by higher incomes generated by the "Celtic Tiger", by immigration, and by low interest rates. On the other hand, supply, while in principle responsive, has been held back by bottlenecks in infrastructure and by bottlenecks in processing developers' applications.

If this is an adequate description of the Dublin housing market, then government is effectively rationing housing demand. Rationing would be responsible for welfare losses: houses are not built that landowners and households would to their mutual benefit like to see built. Fortunately, because government is responsible for market failure it can just as easily cure market failure. A straightforward policy would be to remove bottlenecks in Dublin infrastructure and planning. Also, this policy could be justified on other than Pareto-efficiency grounds. For example, houses might be too expensive to be affordable for a large minority of Dublin's population. Then reducing bottlenecks would also serve to benefit this group.

Implicitly, this conclusion assumes that the price elasticity of housing demand is less than perfect: only then can more supply make housing more affordable. Or, in the parlance of urban economics, Dublin must be a "closed city". In a closed city, falling house prices due to a government induced supply shock would make future potential buyers better off.

But what if housing demand were very (or even perfectly) elastic? Would our interpretation of housing and transportation policies have to be modified? And if so, would conclusions on housing policy and transportation policy be the same? Four short sections follow. First, we look at an alternative interpretation of how the Celtic Tiger might have affected Dublin (Section II). Within this framework, we look at the effects of two policies prominent in the National Development Plan 2000-2006 (Section III). Then we ask how the observed pattern of Dublin suburbanisation might add to our explanation (Section IV). Finally, Section V offers an option for future policy.

II AN ALTERNATIVE FRAMEWORK

A city where demand for housing is perfectly elastic is an "open city", as proposed by Polinsky and Shavell (1976). By definition, if a city is open anyone outside the city may locate inside it. Only, such an "immigrant household" would have to outbid an "indigenous household" to acquire the right to live on his plot. Alternatively, the immigrant may bid for land at the city's edge. Either way, potential immigrants will bid for Dublin locations as long as their utility from living and working in Dublin is higher than their utility from living and working where they currently are. After these adjustments have taken place, well-being in Dublin will be the same as elsewhere.

Such bidding is what has happened over the course of the Celtic Tiger. As employment and wage growth have been localised in Dublin, Dublin has tended to become more attractive. But higher attractiveness has – via bidding from inside and outside – translated into higher rents and higher house prices, offsetting the initial gain in attractiveness.[1] In Figure 1, the "bid rent" schedule B shows households' initial maximum willingness to pay for a plot of land. Bid rent R falls with a location's increasing distance d to Dublin's central business district, reflecting longer commutes.[2] And the schedule B´ corresponds to the bid rent after the Celtic Tiger has pushed Dublin incomes.

The increase in rent on plots already built up (i.e., within distance d of the city centre) has strong implications for income distribution. Not only is income growth for Dublin's tenants and first time buyers completely capitalised into higher rents and house prices. Property taxes absent, these higher rents are also appropriated in full by Dublin's land/home owners, adding to those wage gains that accrue to land/home owners and tenants alike.[3]

Moreover, the simple diagram shows that bid rents for plots located beyond d increase, too. Were these plots fully zoned and connected to urban

infrastructure, they immediately would be taken up by immigrants. Dublin's

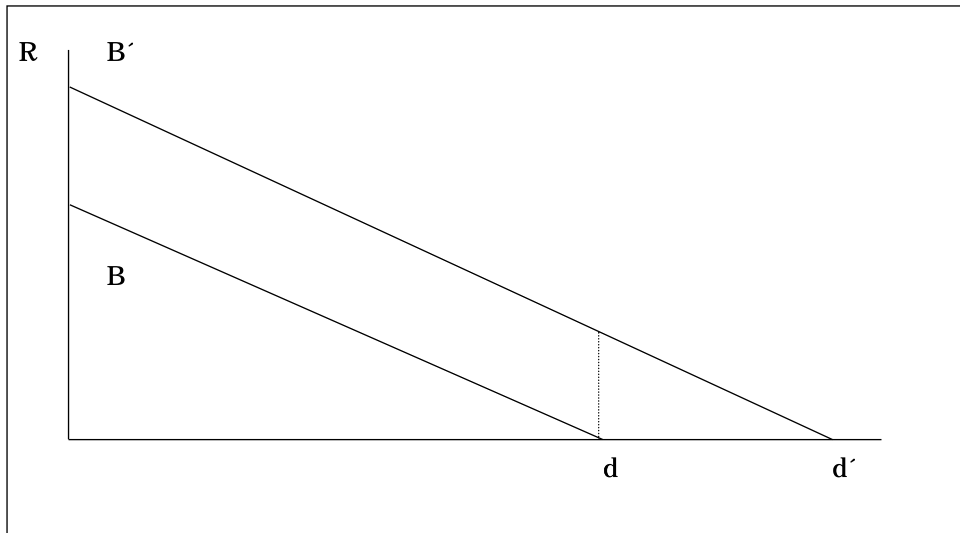
[1] In what follows, house prices, land prices, and rents are interchangeable.

[2] So we are effectively assuming Dublin is a "circular city", with residential areas surrounding the "central business district". Households have identical preferences, face identical constraints and are perfectly flexible in where to locate. The reservation level of utility elsewhere is exogenous. The agricultural land rent is zero. Commuting costs are linear in distance. These are somewhat "intuitive" assumptions.

[3] This is how I argue in Dascher (2000). In fairness, these wealth gains might, through their widespread incidence among Dublin's population, have eased political acceptance of the Irish government's strategy of attracting FDI – with its potential long-run benefits for every household at any location in Ireland.

size would increase without further delay. Only, for some reason adjustment is not so quick. Explanations given above pointed to bottlenecks in infrastructure provision and planning permission. (A very different explanation we will discuss in Section IV.) Whatever the cause, shortly after the onset of the boom Dublin must be seen as effectively being "growth-controlled". So the following discussion can draw on results on growth-controlled open cities, as given in Engle, Navarro and Carson (1992). Note that the growth-controlled open city is not the same as the closed city. In the growth-controlled open city, at least, immigration is possible to the extent of outmigration. For example, in driving up rents in the growth-controlled open city immigrant households may well replace indigenous households.

Figure 1: Bid Rent and an Increase of Income



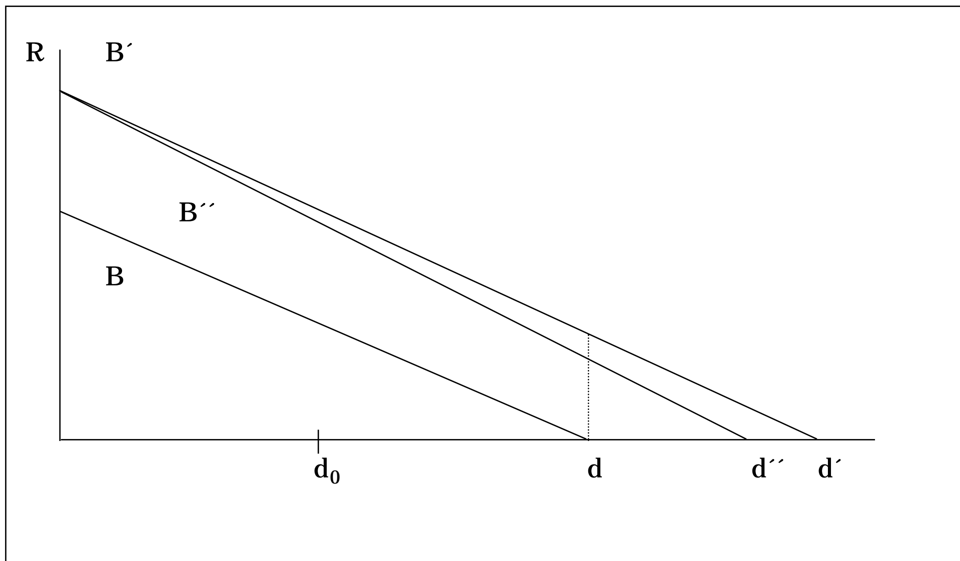
Much in line with reality, the diagram predicts pressure to develop Dublin's vicinity. Owners of land with distance between d and d´ to the city centre want to sell to immigrants. Since rents are involved, we should also not be surprised to find some to "seek rents". Following McDonald (2000), there is forceful evidence of such attempts in and around Dublin:

> Speculators would acquire options on parcels of land and persuade the county council to rezone it, netting enormous sums of money. (p. 204) … Week after week more agricultural land was falling prey to this frenzy of land rezoning done by councillors at the behest of those who stood to make

massive windfall gains. (p. 231).

Owing to this activity, some of the plots between d and d´ are being built on, too. Dublin's size and population increase over time. New arrivals locating at the periphery need to travel to the central business district, too. But given a fixed capacity of commuting infrastructure, commuting costs must then increase. Households living far from the city centre suffer most, households living closer suffer less. For almost all households (with the exception of those living where they work) there is less money available for bidding for land. In Figure 2, hence, the bid rent schedule turns downwards from B´ to B´´.

Figure 2: Bid Rent and Congestion
Source: Engle, Navarro and Carson (1992, p. 276).



As a result of congestion, there is less developable land. Distances beyond d´´ simply become unacceptable. But what is more important, owners of land closer to the city centre than d see their land values fall. In a dynamic context, growing congestion caused by settlement at the periphery would explain why, recently, Dublin housing price increases appear to slow down. According to Bacon (2000, p. 1) has the "rate of increase in prices ... in Dublin ... slowed down sharply since the middle of 1998, the time from which Government measures to redress market imbalance were instituted". Seen from within the open city environment, this conclusion seems overly optimistic. Slower

increases in prices signal increasing congestion and, hence, less maximum willingness to pay rather than a successful government policy.

III GOVERNMENT POLICIES IN THE SMALL OPEN CITY

This is not the only difference as regards conclusions. Not surprisingly, in an open city environment conclusions as regards policies differ, too. In an open city, we assume an infinite supply of potential entrants into the Dublin housing market. Such households willing to invest if housing prices fell slightly would not just be Irish remigrants (the stock of which has been depleted due to past remigration, as Fitz Gerald et al. (2000) note) or households from the Republic's periphery. They would also include numerous younger Dubliners still living with their parents, i.e. individuals with truly no migration costs at all. This "infinite" supply makes it virtually impossible for government to increase the well-being of landless Dublin households (at least without further instruments). To see this, we revisit the two policies of stimulating housing and improving Dublin transportation.

In the "Action on Housing" (DoELG 2000a), stimulating housing supply is partly through "Strategic Development Zones for Housing". In terms of Figure 2, there might be "empty" plots at distance d_0 of the city centre, such as brownfield sites, railway tracks, public parks, sports grounds, etc. Allowing residential development there would increase the population at distance d_0. But it would not change the corresponding bid rent. Landless Dublin households would not find housing any more affordable than before.

Improvements in Dublin transportation are another essential element of the National Development Plan (see Department of Finance, 2000, Table 4.1). Further housing must be linked to the existing transportation network. In the open city environment, such transportation investments operate somewhat differently than rezoning land – always assuming that more capacity is not immediately consumed by higher usage. As transportation investments successfully reduce commuting costs, they make the initial level of house prices more bearable. Households within and beyond Dublin will bid for the right to live close to where commuting has become easier. Much as above, such bidding translates into higher house prices. In the extreme, bidding continues until the entire benefit of faster commuting to the central business district is completely offset. Public investment would capitalise into higher prices for housing. There would be no net benefit at all to tenants or first time buyers.

These are disappointing results. Neither stimulating housing supply nor improving transportation infrastructure helps landless households. Only values of rezoned land or values of houses near to new transportation nodes

are bid up. So both policies benefit current land and home owners. In Polinsky and Shavell's model landlords are "absentee". This might well characterise the Irish society of the nineteenth century. But today's Dublin could not be further from it. Owner occupation is the prevalent mode of housing tenure. Surely then a large fraction of Dublin population stands to gain from housing and transportation policies. Ironically, these households are not the addressees of a housing policy intended to support Dublin's landless households. Nor are they the sole addressees of transportation investment. Incidentally, that is what they will be.

IV INTERPRETING DUBLIN'S SUBURBAN SPRAWL

Earlier, we asked why Dublin should have been growth-controlled at the beginning of its current boom. The explanation given referred to bottlenecks in infrastructure and planning.[4] But where do these bottlenecks come from? Do they simply reflect inevitable lags in implementing and executing plans for new infrastructure? Do they reflect government inertia? Or do they even reflect a deliberate government choice? Going back to Figure 2, developing land between d and d´´ means gains for owners of peripheral land. It also means losses for owners of already developed land. (Note that renters and first time buyers are not affected.) Put differently, developing peripheral land imposes external costs. Engle, Navarro and Carson (1992) suggest that the perspective of land value losses through higher congestion will incite owners of developed land to vote against further development.

Pitting owners of developed land against owners of developable land generates interesting predictions for the residential pattern in the Greater Dublin area. (These predictions should also be understood as another opportunity to test the validity of the open city framework.) First, conflicts of interest between the two types of land owners explain why development within Dublin proper is not complete. Here, Dublin homeowning households – constituting a large share of voters for the Dublin county council – have successfully resisted further development. As a related example, McDonald points to minimum lot size regulation in Dun Laoghaire Rathdown County… "there was outrage when the council abandoned ceilings on residential density in the old borough to consolidate the built-up area" (p. 235). However, planning decisions in surrounding counties are made by yet different County Councils. These are elected by an entirely different group, partly also

[4] On these bottlenecks, see Fitz Gerald et al. (2000, pp. 148-150).

comprising the owners of developable land. The result is that development is passing over undeveloped land in Dublin. As growth controls are gradually lifted, a patchwork-like spatial pattern emerges: "urban sprawl".[5]

It seems tempting to interpret low past investment into mainline rail from a property values perspective, also. Improvement of rail between Dublin and other cities (or even between non-Dublin Irish cities) has not really been on the political agenda. Here, too, those who stand to gain from better and more frequent inter city connections are owners of developable land in, say, Athlone or Wicklow. Dublin's property values being largely unaffected, her extraordinary weight in national political decisions seems to well predict the observed lack of interest.

V POLICY

We have identified redistribution caused by ongoing growth in Dublin's periphery, by investment in transportation, and by zoning land for residential development. To be sure, this is not to say that, say, a transportation policy should not be pursued – to the contrary. But can we maybe devise instruments that compensate those who lose by taking from those who gain?

To be sure, our all too stylised setup has made us lose sight of important real world problems connected with less-than-perfect mobility. Rents will not immediately adjust downwards in response to higher congestion. Moreover, taking from winners must run into political difficulties. The Celtic Tiger has driven up land values and house prices. Also, relaxing growth controls has driven up land values for owners of undeveloped land. It might seem an attractive option to tax some (or all) of these increases in housing prices and land value. In fact, this idea is reminiscent of the "Henry-George-Theorem". According to this theorem, not only can incomes from increasing land values be taxed away without efficiency loss. Also, the corresponding tax revenues might – under certain circumstances – be just sufficient to completely pay for the public goods that caused land values to rise in the first place (see Arnott and Stiglitz, 1979).

However, in 1979 Ireland has abolished the property tax which might have served as a proxy (see Callan, 1991, p. 8). Today's widespread homeownership does not really encourage its reintroduction. Note, however,

an important surrogate instrument introduced in the Planning and

5. We could add that residential externalities play a role besides commuting externalities, too. Again, McDonald is a source of numerous examples where residents of suburbs protest against adjacent development.

Development Bill, 1999. There, "a planning authority may require ... the transfer ...of ... up to 20 per cent of the land ... at existing use values" (Department of Finance, 2000, p. 70; author's emphasis). Interestingly, this is an implicit tax on land to be developed, though not on land already developed. Is this, here too, reflecting Dublin's political weight in national decision making?

Giving to those who stand to lose does not seem easy, either. Social housing, on the one hand, makes cheap housing available – to those who are next on ever longer waiting lists (McDonald, 2000, p. 341). And in many countries, social housing is known to be overly expensive. Grants to first-time buyers and subsidies to tenants, on the other hand, are more successfully targeted to those with low incomes. But they in the long run capitalise into higher house prices and rents. In fact, this already seems to happen for existing grants and subsidies (see McDonald (2000), p. 334 and Fitz Gerald et al. (1999), p. 152, respectively).

This last point is familiar by now. Capitalisation is a result of being open. But maybe we can avoid capitalisation by what one might call an additional rental support scheme (ADRES). So ADRES would have three important components. (1) Rent support within ADRES would have to be additional to current rent support for low-income households! Moreover, ADRES would be restricted to (2) "indigenous households" who are (3) made worse off by some exogenous shock or policy. "Indigenous households" would be defined as those households that are resident in Dublin today. Future immigrants would be excluded from additional rent support. Future immigrants would be at least as well off in Dublin as they are elsewhere – otherwise they would not immigrate. It seems legitimate, then, to restrict ADRES to indigenous households who have actually been made worse off. Moreover, ADRES should capitalise much less into higher rents and higher house prices.

Slight variations on all three components of ADRES seem possible. Newcomers might become eligible for additional rent support, but only after some time. Additional rent support could be granted to all indigenous households, not just to those made worse off. Or, instead of being additional to current rent support for unemployed low-income households rent support could be extended to low-income households that enter the labor market. This, in fact, would help to bridge the "unemployment trap" that Fahey and Watson (1995, p. 184) identify in the current system of Irish rent support.

But surely each such variation comes at a cost, not least for the government budget. So the proposal of any such scheme carries over to the question of funding (but is not tied to it). The larger the funding, the larger the scheme's potential to compensate future negative shocks. One possible method

to generate such funding would be to rezone selected parts of public lands in Dublin for development.[6] Houses could be built on these lands to be rented out to Dublin households. Their rents would provide a continuous stream of income to ADRES' funding body. As the general indexes on rents and house prices go up (fall), so do rent income and ADRES payments. In thus acting like an insurance against shocks on the housing market, ADRES would also make other urban policies more palatable (such as building tramways or LUAS).[7] Finally, we turn to the perspective of the policy maker. While the implementation of ADRES would have to confront many institutional details, at least its spending component should still be quick to implement. And while ADRES does reduce open urban space in Dublin, it should be able to meet approval among a majority of (today's) Dubliners.

6. Jane Jacobs's (1961, Chapter 5) view would probably be that large city parks are not necessarily good parks. Making parks smaller may actually make them better.

7. Clearly, redistributing part of the aggregate urban land rent to landless consumers is reminiscent of the public ownership case in urban economics (see Fujita, 1995). Also, insurance against variations in house prices is a central theme in Shiller (1995).

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Book Reviews

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Recent Work on Affordable Housing in Ireland

Past urban policy failures could be fairly linked to inadequate resources and a lack of public finance, unlike the present economic situation which offers opportunities and policy alternatives never available before. It is essential however to realise that problems of affordable housing are part of the wider policy problem of dealing with growth patterns particularly in main urban areas and should be addressed in that context. This review examines the emergence of the housing affordability problem in the Dublin Region and the impacts of policy responses to date.[1]

It is evident that a fundamental review of the underlying principles shaping current policy is required if progress is to be achieved. A series of policy initiatives culminating in the Revised Strategic Planning Guidelines for the Dublin Area (2000), Action on Housing (2000) and the Local Government Planning and Development Act 2000 have attempted to address the issue of affordable housing. An alternative approach shaped by a clear focus on integrated urban planning to solve supply deficiencies in major growth centres such as Dublin is suggested. The recognition of the complex inter-tenure nature of the housing market and its integration with other urban city building and regeneration priorities are essential. A narrow focus of price stabilisation at current high levels is both unlikely to result from the current policy mix and significantly fails to address the deeper issue of the need for more affordable housing supply for purchasers and renters within the context of a rapidly developing urban region.

Between 1994 and 1999 the East Region (Dublin and the Mid-East) accounted for approximately 50 per cent of national population growth in the over 15 years of age category, 49 per cent of the increase in numbers at work but only 36.5 per cent of new housing produced. This picture of imbalance between supply and demand is particularly pronounced if the housing production levels for the Dublin area alone are examined. Despite clear evidence of major employment growth, economic development and inward migration house production levels have remained static at 9-10,000 units annually over this period (Williams and Shiels, 2000). The housing affordability problem has originated with the rapid economic growth in the main growth centres and critical supply shortages in these areas have played a major role in creating a national housing problem.

A continuation of the current uncontrolled expansion of housing into outer Leinster or green-field sites is broadly accepted as unsustainable and will have significant long-term environmental and infrastructure development cost implications. An additional worrying trend are suggested responses based upon temporary infrastructure solutions. The more sustainable, expedient and economic option is to seriously address the housing need issue as a city/town building opportunity through a major urban regeneration drive based upon the large amounts of underutilised urban development spaces evident in Irish urban areas.

An absence of vision in dealing with this issue at source i.e. in Dublin, Galway and the other growth centres has resulted in significant dispersal of housing activity in a

[1] Further elaboration is provided in Williams and Shiels (2000).

sprawl type pattern towards outer areas with rapid acceleration of prices ongoing. Allowing such critical shortages to develop, linked to the failure to meet expanding infrastructure requirements and the absence of progress on strategic planning implementation measures are likely to place significant constraints on the future progress of the Dublin Region. Apart from the negative economic and social implications of the lack of affordable housing, it also raises difficulties such as attracting further workers to the region. Basic issues including transport provision, waste management and the availability of serviced development land are not being adequately addressed, indicating the necessity of significant reforms in the nature and processes of urban governance.

DOELG house price statistics showing house price inflation at 20 per cent indicates that the problem of affordability has worsened in 2000, with such levels of price increase greatly in excess of general prices and wage inflation. Short-term implications of the housing affordability problems have resulted in a range of initiatives including "Action on House Prices, Housing Loans Initiatives along with a second and third official Reviews and Assessments of the Housing Market. These initiatives have failed to calm house price inflation as they have been directed primarily at demand management or supporting and subsidising demand. In the face of inadequate supply levels, such measures including support for home purchasers have been quickly incorporated into the market at higher price levels.

Fundamental problems with such policy approaches have included:

- Absence of measures to address critical supply shortages in the main urban growth centres particularly Dublin.
- The emergence of a sprawl type pattern of development, which will involve significant future additional spending on hard and soft infrastructure.
- The distortion effect caused by the use of national taxation measures to solve local/regional problems. This is particularly noted with the impact of continued fiscal support for resort schemes, which both artificially increase local house prices and divert scarce construction resources from affordable housing provision.
- Absence of recognition of the role of sentiment in property market actions. Perceptions of supply deficiencies encourage investment in housing markets in expectation of further gains. This means that price increases may actually stimulate further demand contrary to conventional economic theory on the allocation of scarce goods.
- Interventions which aim to deter investors fail to appreciate the long-term role of such investors and the complex inter-tenure nature of the market. A growing urban economy needs a strong rental sector and deterring investors from the market will inevitably lead to increasing rentals and supply shortages.
- Finally the aim of price stabilisation in the new homes market for first time buyers is not possible in any market where overall supply is clearly deficient as is the case in the Dublin market.

In the absence of a positive result from the existing initiatives many commentators have argued that a policy of non-intervention and allowing the market and the forces of supply and demand decide is the only response. This response however shows an absence of understanding of the dynamics of the urban property market where

development potential can only be created by the existence of infrastructure, transportation and services all controlled directly by the public sector. In turn this development potential can only be realised with the legal and planning consents required by public authorities. Government/Public sector involvement is not therefore optional but is already central to the process. How this involvement can be more successfully directed remains however at issue.

Present Trends and Policy Responses

In particular, the continuation of present policies means that the demand for affordable housing is not being met within the Dublin area and is causing purchasers to move to adjacent counties. This will entail having to manage the problems of scattered urbanisation and low population densities. With the private motor car becoming the preferred or only method of transport in such areas previous commitments made to principles of sustainable development are null and void. Many international cities have experienced similar low-density development. Much of the research on controlling and reducing negative impacts of such development favours policy approaches based upon the concept of the compact city.

The adoption of the European Model of a more compact urban form, with clear demarcation between built up areas and countryside, extensive pedestrian zones and effective traffic management has been widely advocated in the Irish context. Gribbin (1999) recommends the more intense development of existing urban areas within 1km of the intended transportation structure. This additional population would support a greater diversity of ancillary land uses such as retail and services. Obviously, this approach would need to be integrated with planning and development to create environmentally sustainable areas.

Sustainability in Urban Development

The strategy for achieving sustainable development in the context of rational spatial planning and urban renewal has been adopted in "Sustainable Development – A Strategy for Ireland" (DOE, 1997). Issues include:

- Encouraging careful location of residential, commercial and industrial uses;
- Planning and making effective use of existing developed urban areas;
- Integrated strategic, economic and social planning.

Progress has been achieved in terms of renewal of some existing developed urban areas and in integrating strategic social and economic planning. However, examination of the concerns relating to the Dublin Region and its peripheral development show a worsening problem with strategies offered and discussed but progress minimal. The commitment of large-scale capital investment in urban infrastructure is welcomed. Past experience indicates that such major inflows of investment will require careful monitoring, information and control. If national environmental policy is inadequately developed with regard to legal and fiscal frameworks, the full potential of such investments may not be realised (Honohan, 1997). The creation of a new transportation system alone may not lead to more efficient or environmentally sustainable patterns of transport use. Alternatives to existing policies in transportation pricing, subsidies and taxes have been explored at the international level in the European Commission Green Paper Towards Fair and

Efficient Pricing in Transport (1995). The use of transport taxes has been advocated to contribute to the development of an efficient and environmentally friendly transport system in Ireland (ESRI, 1998).

European experience is that mixed-use medium-density urban development is a useful model and results in compact, sustainable and accessible urban areas. In the US, the adoption of a similar pattern of Smart Growth developments is regarded as a potential solution to traffic pollution, air pollution and sprawl. Modifications of standards to street design, requiring buildings to be set back, have resulted in more pedestrian orientated developments that are transit friendly with mixed uses (O'Neill, 1999). This flexibility along with the collaborations and integration required are difficult to achieve but enhance developments in growing areas sufficiently to warrant serious attention.

Rapid economic development as experienced in Dublin will inevitably result in a certain amount of Edge City industrial and commercial development. Facilitating the significant levels of inward economic investment within the existing built-up areas would not have been possible. This is not the case with housing, which is more suited to development in areas where land resources with existing under-utilised infrastructure and facilities are present. Policies to bring derelict and under-used urban lands into use have been inadequate and ineffective. Developers instead built on green-field sites because it was easy and fast and often replicates previous successful developments. Major road building programmes have facilitated this trend, as did the existence of fragmented urban governance systems. The desire of developers for inexpensive green-field sites often leads to a leapfrog effect as areas mature. Developers, rather than competing for remaining in-fill sites often subject to stringent planning or environmental requirements, move on to areas where such constraints are less.

Fiscal policy interventions in Ireland, in the housing area, have tended to systematically favour and support new build at green-field locations. This has included initiatives such as preferential taxation treatment in terms of stamp duty and first-time buyers grants aimed at new housing. When demand for housing is high, total demand is at its highest at central locations. Purchasers, however, will also buy houses at more peripheral locations due to lack of supply. As this land is readily available at cheaper prices, it is often more profitable for a speculative developer. The results of these demand and supply factors encourage the emergence of sprawl into peripheral areas around the more desirable centre. Purchasers in Ireland as elsewhere are often prepared to move further from the city in order to avail of cheaper housing. Long-term transportation costs and the lack of proper infrastructure and facilities are tolerated in order to acquire a home.

A major factor in the more successful examples of the North European Compact Urban Model is the existence of strong and effective planning and urban governance structures. In the absence of such structures, the pattern of urban development emerging in the Dublin region has signs of creating many of the major disadvantages associated with sprawl. The pattern is one of speculative single land-use development, particularly for housing, at greater distances from the city. This allied with an increased dependence on edge city retail developments encourage car usage and complement the edge city employment pattern in a combination which negates stated policies on sustainability.

Statements of aspirations and goodwill will be insufficient to alter market forces

sufficiently to deliver such solutions. A regional planning and development process capable of delivering such solutions will often conflict with individual preferences and vested interest groups. Whether the collective political will to deliver the alternatives to sprawl exists is open to debate.

The 1998 Action on House Prices, among its key recommendations, proposed increasing housing densities in key locations in order to increase housing supply with a limited amount of development land (Bacon et al., 1998). This was followed by the Government's announcement in April 1998 that it intended to facilitate increased residential densities in inner urban "brown-field" sites or public transport nodes (DoELG, 1998). Guidelines on housing density were prepared in February 1999 (McCabe et al., 1999), but since this time, much discussion but very little further advancement of medium-density residential proposals has occurred. There are currently two medium-density housing schemes being developed in Dublin, at Blanchardstown and Santry Woods. Both schemes met with considerable planning difficulties due to local opposition, as many residents believed they were out of character with the existing low-density suburban landscape of the area.

It is increasingly evident that public mistrust of the planning and development process has developed to such an extent that virtually all development proposals face significant opposition. Public cynicism is largely based upon perception of past failure to deliver development benefits to the wider community. Attempts to build such trust and acceptance may require changes in present approaches to planning and indeed may necessitate moves towards a more explicit recognition of the need for community planning gain mechanisms.

Immediate Priorities

Supply side initiatives that could calm the Dublin market have, by comparison, been lacking in urgency with regard to implementation. Proposals for transportation and utilities infrastructure have now been discussed over a twenty-year period. The examples of promises of increasing capacity on the existing transportation corridors and major enlargement of the urban rail system without specific guaranteed funding commitments and target completion dates bring planning and public policy procedures into question. While the aspiration has now been adopted of dealing with urban development issues in an integrated manner linking transportation, land uses and associated services, the reality of development occurring has been different.

By international standards, the Dublin Region has a low level of population, adequate land supply, a strong economy and high levels of public finance available. With good urban governance and management in place and a co-ordinated response, solutions are possible. The political commitment to such reforms and resources delivery and implementation has now become critical to the region's future development. Operational rather than aspirational strategic planning is required. Current problems are a result of outdated structures, systems and processes rather than the fault of legislation or individual organisations.

Densification of the existing Dublin Area has not been fully considered by policy makers despite some obvious advantages. A renewal emphasis, building on the success of previous urban renewal strategies, could be used to ensure that the substantial numbers of still under-utilised city properties are brought to their full potential use. Vacant and under-utilised floor space over ground floor commercial users remains a feature of all Irish urban areas. Contrary to the position in the outer Leinster area

such city districts often have schools, health and other facilities in a disused or rundown state due to population movement.

The significant amounts of land in the existing urban area in various forms of public ownership represent the most obvious problem. Ongoing studies at DIT show that the planned release of a significant portion of such lands onto the development market could play a significant role in first stabilising the Dublin market and then contributing to the supply response required.

While this process has already commenced in Central Dublin, many of the same factors apply in older areas of suburban Dublin where a previous generation of low density housing now has ageing populations, falling school numbers and infrastructure in place. Such districts are often in need of development in a general sense as they have been neglected and not well provided for in the past. In areas such as the North Fringe of Dublin, the opportunities for improving peripheral disadvantaged areas through development are best evidenced by projects such as Ballymun Urban Regeneration Project. A reduced emphasis on outdated single use zonings has allowed development to occur in an integrated manner. The potential for increased population density with commercial redevelopment complementing a mix of housing types while re-using disused or vandalised open space is obvious.

In conclusion if a serious response to the current housing shortage is intended to be implemented in a sustainable manner the densification and regeneration of the existing urban area provides a way forward. In addition, an approach based upon this option has the additional twin merits of utilising existing infrastructure and facilities and a capacity to be implemented over a shorter time period than continued expansion at peripheral green-field locations. An essential element to the success of such approaches would be a new approach to urban planning and development based upon integrated policy objectives and an acceptance of the necessity for explicit community planning gain arrangements.

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BERNA GRIST, Irish Planning Law, Dublin: Institute of Public Administration, 1999, 12.70.

This slim volume (93 pages) is a very lucidly written overview of the planning system in Ireland, directed at the non-specialist. It is of particular value for those who wish to understand the evolution of the planning system as we experience it today, and those who wish to know how to operate it today. It is interesting to observe how the policy system has evolved over time in response to various inadequacies. From an economics point of view, this can be interpreted as follows: the planning system allows various rent seekers to maximise their position at the expense of the public interest. This rent capture gradually becomes obvious to the public and those responsible for the design and operation of the system, and these opportunities are curtailed; the rent seekers search out new opportunities. Examples include:

• Membership of the national appeals board (An Bord Pleanala) – formerly appointed entirely at the discretion and choice of the Minister, now selected by the Minister from panels of names provided by various vocational and conservation groups.
• "Section 4" council resolutions, whereby Councillors can direct a manager to take a development decision – formerly voted through by Councillors not representing the area in which the proposed development would take place, now three-quarters of the Councillors from the area to which the section 4 is to apply must support the direction to the manager.
• Claims for compensation where development is not permitted. Formerly, even where development on lands zoned agricultural was denied permission, very substantial compensation claims were sustained by the courts; now the conditions under which it is payable are much more restrictive.
• Listing of buildings for conservation – formerly at the discretion of the local authority, now a mandatory requirement.

It is also striking how little economic considerations, broadly defined, feature in

the legislation. No mention of costs and benefits and their distribution, evaluation of alternatives, externalities, the "polluter pays" principle, cost minimisation, cost recovery, optimisation. Local authorities are obliged to produce a development plan, but are not required to cost it, never mind estimate benefits or evaluate options.

Also, economists have to a large extent ignored the planning system in both teaching and research. This book is a reminder and a reproach about how deficient both the system itself and the economics profession is in contributing to a systematic analysis of design and performance in this crucially important domain.

Environmental Studies, UCD FRANK J. CONVERY

KEVIN O'ROURKE and JEFFREY G. WILLIAMSON, 1999, Globalization and History: The Evolution of a Nineteenth Century Atlantic Economy, Cambridge, MA: MIT Press, 343pp. + xii, IR£ 42.99, 54.59.

Scholars create a lot of confusion when they invent a new term for something and then conflate the novelty of the term with newness in the thing it represents. Globalization is such a term. Scholars have been scrambling around analysing it as if it were a new social phenomenon. But is it just a new word? This highly acclaimed book has the admirable intent of placing globalization in a historical context. The authors are rightly sceptical of recent ahistorical accounts that treat it as a "new" phenomenon that has engendered "more" and "freer" international trade and capital flows than ever before. O'Rourke and Williamson contend that something akin to "globalization" happened before, in broad outline if not in its specifics. They support this contention by examining the Atlantic economy between 1830 and 1945. At the risk of oversimplifying, they try to show that trade is the dominant force that determines the relative wealth of nations and that the freer the trade, the more equal the distribution of wealth among countries.

The book examines two historical periods in some detail. The authors use primarily general equilibrium models to estimate the effects of "globalization" on convergence of national income levels and, especially, factor prices: urban unskilled wages and land rents. Globalization for these purposes is defined as the free movement of commodities, finance, and people. The econometric models and many of the data are explained in detail in earlier articles by the authors, so readers must take quite a lot on faith unless they are willing to do some digging.

The first period to be examined is the "globalization" of 1830-1914 (particularly 1870-1914), when commodity markets became relatively free mainly because of improvements in transport technologies. The discussion of the role of transport on commodity price convergence is quite interesting. The book convincingly argues that the "first" globalization differed from the current one because the rising import penetration of markets was transport- instead of policy-driven. Cheap transport enabled cheaper commodities to penetrate new markets and policy makers did not respond by increasing tariffs to offset the effect. Commodity prices converged.

People also moved. The book argues that they moved because of relative wages. Migrants left Europe for North America seeking a better life. Even when wages then rose at home, they continued moving because of demographic effects (the share of

population of prime emigration age) and industrialisation effects (falling proportion of the labour force in agriculture) and because of the pull of previous emigrants. As a result, urban wage rates converged between the relatively high-wage US economy and the lower-wage Western European countries. Wage rates rose in both areas, but they grew faster in labour-rich and relatively low-waged Europe. Moreover, rents rose in North America and fell in Britain, again bringing convergence.

During 1914-1940, however, increasing protection of world markets was associated with a divergence of commodity prices as well as wages. The movement of labour was impeded and regional wage levels again diverged. Protectionist policies segmented world commodity and factor markets between the two world wars. As a result, the authors argue, the world economy "lost all of its globalization achievements in three decades, between 1914 and 1945". Yet, with respect to recent globalization, "In the half-century since then, it has won them back in every market but one; world migration is no longer 'mass'" (p. 2).

I will just note the rather odd implication that a reified world economy "failed" to "win back" mass migration after the Second World War (surely it was the rich countries that control the world economy who did everything in their power to ensure that mass migration did not reoccur). More significant questions arise from the authors' causal link between commodity prices and factor prices in the late nineteenth century and later in their attempts to generalise the late nineteenth-century case to a more universal link between economic liberalism and economic convergence.

The authors conclude unequivocally that "Heckscher and Ohlin were right. Commodity market integration led to factor price convergence in the late nineteenth century" (p. 74). But they only show that the two processes occurred at the same time. First they show that commodity prices converged due to rapidly falling transport costs. Then they show that factor prices converged due to rapid migration from Europe to North America. And then they say that commodity price convergence caused factor price convergence. There appears to be some sleight of hand here. It happens in their casual shift between analysing commodity-trade/prices and migration/wages and then calling both processes "globalization", thus equating them. By this linguistic mechanism, two parallel processes—falling transport costs and migration—are defined as part of a bigger process (globalization) and are thus treated as a single causal mechanism. But do we really have causation here or just historically-specific correlation?

Even if one finds the authors' causal link between commodity price convergence and factor price convergence convincing for late nineteenth century Western Europe and North America, it is a further jump to their more universal conclusion that Heckscher and Ohlin were right in general. Their analysis is least convincing when they move from arguing that their econometric analysis "suggests" causation between commodity prices and factor prices (for that is all such econometric models can do) to bolder generalisations that globalization causes convergence, based on something they call "the econometric facts" (p. 133)!

Such generalisations exceed the evidence presented in the book for several reasons. There are methodological questions about using urban unskilled wages to measure convergence among economies that were varyingly dominated by agriculture, and which were varyingly upgrading to skilled labour. There is a limited range of countries in the study, particularly lacking peripheral countries. "Convergence" is measured among the mainly core countries for which there are data, leaving out huge

less developed Atlantic regions in the Caribbean, Latin America, western Africa, and even the European periphery. The authors even admit that convergence disappears when Eastern Europe and, especially, the global South are included (p. 9). Yet they still conclude that globalization causes economic convergence.

As the geographical definition of the "Atlantic economy" is restricted, so is the time frame. A longer view of history might place liberal trade and migration regimes in the context of broader historical phases or cycles, rather than as an independent policy variable that, if imposed, would cause convergence.

The authors sometimes admit that the impacts of globalization and the strength of Heckscher-Ohlin type mechanisms varied from country to country. Yet they would have been more convincing had they given a more detailed analysis about how policy, institutions, and other regional characteristics intermediated to alter the effects of changing trade relations on specific national economies. One of the most interesting parts of the book is the analysis of the great migratory waves of the late nineteenth century (Chapters seven and particularly eight), because this is precisely where a great deal of variation existed. The econometric analysis indicates that migration accounted for 125 per cent of the real wage convergence observed in the Atlantic economy between 1870 and 1910.

From a more radical viewpoint, this result indicates that convergence of wages or incomes is not equivalent to convergence of developmental levels. Even while migration was causing wage convergence, other developmental factors like capital flows, technological upgrading, changing labour productivity, and capital accumulation were actually causing a net 25 per cent divergence of wage rates across the Atlantic economy. To put it more precisely, even though income inequality was falling because of an unprecedented and possibly unique wave of migration, uneven development was rising between core regions and peripheral regions. Yet O'Rourke and Williamson prefer to ignore these contradictory influences by stating that, "In theory, the forces of late-nineteenth-century convergence could have included commodity price convergence and trade expansion, technological catch-up and human capital accumulation, but in fact migration was the central force" (p. 165).

Instead of comparing the contradictory forces of convergence and divergence, O'Rourke and Williamson focus on the inconsistency of recent liberalism that encourages commodities and capital to move freely but discourages labour migration. Their solution to diverging wages after 1914 is to reintroduce free movement of labour to globalisation. They write: "The convergence power of free migration, when it is tolerated, can be substantial given the late-nineteenth-century evidence. Convergence explanations based on technological or accumulation catch-up in closed economy models miss this point. The millions on the move in the late nineteenth century did not" (p. 166). This finding is ironic since it is based on the Heckscher-Ohlin-Samuelson (H-O-S) model, which some economists have explicitly used to justify anti-immigration policies on the basis that economic convergence can result from the free movement of commodities and capital alone, without movement of labour (for an excellent critical discussion of H-O-S see Edwards, 1985).

But this discussion still confuses convergence and development. Orthodox theories, whether in economics or sociology, are primarily concerned about questions of income inequality. To the extent that they are against inequality, whether class inequality within a country or regional inequality among countries, they hope to reduce it without changing the basic economic relations of society. They hope to reduce

class inequality within capitalism through reforms that enable more fluid patterns of social mobility and fairer systems of allocating education, occupations and rewards. Similarly, they want to solve global inequality within a world capitalist system through open trade and free movement of productive factors.

Likewise, in this book the authors eschew the more interesting question of uneven development and instead concentrate on whether different trading regimes are associated with convergence or divergence of regional incomes. They attempt to demonstrate that more open economic relations cause economic convergence, where "poor countries start to catch up on rich countries" while protectionism causes inequality. But I would argue that this misses the real barriers to developmental convergence. Unequal development is not defined by uneven wages or unequal incomes per se but by an uneven international division of labour where the more technologically advanced and innovative activities are concentrated in core regions and more routine ones are aggregated in peripheral ones. From this perspective, wages and incomes may converge and diverge cyclically, but ultimate convergence is ruled out so long as the global division of labour is unequal. Nothing in the present book convinces me that free trade will enable technical upgrading in peripheral regions, since free trade cannot touch the protectionism that is enforced by corporations themselves through their controls of technologies.

Different core and peripheral trajectories come out of O'Rourke and Williamson's own figures concerning wage convergence during 1870-1910 (pp. 126, 155). If we subtract their estimated rise in real wages that was due to migration from the actual wage rise, we find a profound division between the core and peripheral European countries in the study. In each core country, the real wage rise during 1870-1910 was predominantly from factors other than migration, presumably from capital deepening, technical upgrading, and rising labour productivity. The proportion of rising real wages that is explained by factors other than migration varies from 78 per cent in Norway to 119 per cent in Belgium. The core countries with the greatest rise in real wages, Sweden and Denmark, underwent tremendous spurts of technology-led development during precisely this period. In each peripheral country, however, migration was the overwhelming cause of rising real wages, ranging from 81 per cent in Ireland to 211 per cent in Spain. This suggests that real wages rose in core countries due to long-term developmental factors that would be sustained over the long run, while they rose in peripheral countries because of a temporally limited outward movement of labour. In these cases, the economic fundamentals that would underlie a more sustainable long-term developmental path were almost entirely missing.

I emphasise this difference between the core and peripheral regions of Europe because the period 1870-1910 is precisely when some small European states attained a significant level of industrialisation and development. If Senghaas (1985) and others are correct, the convergence of these countries had little to do with free trade and a lot to do with policies that encouraged the modernisation and diversification of their agrarian economies; the early development of agricultural processing industries; higher wages to develop indigenous markets for basic manufactures; and the deepening of agrarian-based industry into the production of specialised capital equipment for export. The turn toward history in economic studies of globalization is undoubtedly a good thing and O'Rourke and Williamson are to be commended for their efforts to raise this issue (of course, history and globalization have been the meat and potatoes of other social sciences, and of radical political economy, for some time). Yet

this volume is ultimately unsatisfying because it concentrates on how endowed things and people are moved around the globe once they appear in a given place. But it never gets around to the real brass tacks of who produces or extracts what, how, where and why (and why not).

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BRIAN NOLAN, PHILIP J. O'CONNELL and CHRISTOPHER T. WHELAN (eds.), 2000, Bust to Boom? The Irish Experience of Growth and Inequality, Dublin: IPA. IR£20.00, 25.39.
and
KIERAN ALLEN, 2000, The Celtic Tiger: The Myth of Social Partnership in Ireland, Manchester: Manchester University Press. IR£13.00, 17.76.

Amid public debate about the social impact of Ireland's current economic boom, these two books are a timely contribution to the social science literature on the Celtic Tiger and adopt a central, though not exclusive, focus on the distributional and social class impacts of the boom. The Nolan et al., volume contains contributions from economists, sociologists, political scientists and a political economist, most of them present or former employees of The Economic and Social Research Institute (ESRI) and it marks the Institute's 40th anniversary. Kieran Allen's sociological work is an explicitly Marxist account of the Celtic Tiger and as such adds to the literature on the phenomenon from a theoretical perspective which up to now has been largely absent.

The ESRI volume adopts a more mainstream theoretical approach with different contributors drawing on new growth theory, welfare regime theory, modernisation theory, and critical theoretical currents within the new political economy to elucidate aspects of the subject. Much of its contents either repeat work published elsewhere (John Bradley and John Fitz Gerald on the changes in the Irish economy) or update data and evidence on the Irish labour market (Philip J. O'Connell); on changing class structure (Richard Layte and Christopher T. Whelan); on inequality in education (Emer Smyth and Damian F. Hannan); on earnings inequality, returns to education and low pay (Alan Barrett, John Fitz Gerald and Brian Nolan); on income inequality (Brian Nolan and Bertrand Maître); on poverty trends (Richard Layte, Brian Nolan and Christopher T. Whelan); on taxation and social welfare (Tim Callan and Brian Nolan); on cumulative disadvantage (Brian Nolan, Richard Layte and Christopher T.

Whelan); on the spatial distribution of disadvantage (Tony Fahey and James Williams); and on gender equality and fertility decline (Tony Fahey, Helen Russell and Emer Smyth).

The work of these authors is already familiar to students of Irish social change and, while the updated data in their contributions to this volume are valuable, they offer no theoretical innovations to deepen our understanding of Ireland's recent high-growth phase of development. Such innovations are limited to two chapters: one by Rona Fitzgerald and Brian Girvin (on political culture as an element in Ireland's success) and the second by Seán Ó Riain and Philip J. O'Connell (on Ireland as a developmental state). Finally, Niamh Hardiman's chapter on social partnership extends the analysis in Hardiman, 1998. Coming from different theoretical stables, the two books can therefore be read as offering alternative analyses of the nature, the social impact, the genesis and the significance of Ireland's Celtic Tiger. This review will compare and contrast their treatment of elements of these key issues and interrogate the adequacy of their theoretical approaches.

The most striking difference between the two books is their overall judgement of Ireland's economic boom. For the contributors to the ESRI volume, it marks the transformation of Ireland, a belated catching up with our western European neighbours, an economic renaissance well on the way to making Ireland one of the most prosperous states in the European Union. For Allen, on the other hand, Ireland's recent growth is "intimately linked to the way the US economy itself has grown" (28) and it has enriched a small elite while leaving the majority relatively worse off. Both disagree also on its future prospects. Allen argues that "the assumption that an 'Irish model' based on social consensus and free market economics will guarantee continued growth is blinkered in the extreme" (29) while, in the ESRI volume, Bradley, Fitz Gerald and Ó Riain and O'Connell view Ireland's success as being the fruits of a long-term development strategy and thus being solidly based. Where lie the roots of their disagreement on this key issue?

The answer to this question is more implicit than explicit, resting as it does on the authors' theoretical assumptions about capitalism. Bradley in his opening comments on Fukuyama's thesis on the end of history implies that Ireland's success validates the neo-classical case that market-based capitalism is a universal path towards development potentially available to all countries (4-5) while Fitz Gerald argues that the supply of and demand for skilled labour in the Irish economy in the favourable demographic situation which will prevail for the next 15 years or so is resulting in Ireland catching up with its neighbours economically. Allen's more critical judgement is based both on Irish industry's high levels of dependence on FDI and on his scepticism concerning capitalist cycles of growth and the predictions of neo-classical economists. Unfortunately, however, both sides of the argument are over-selective in their use of evidence to substantiate their claims and fail to engage with theoretical critics. For example, Allen's focus on Ireland's level of dependency on US FDI and its vulnerability to a downturn in the US economy is not adequately treated in the ESRI volume. Thus, Bradley rightly characterises Ireland's dependence on Britain as a "web of dependency" through which, to use Mjøset's phrase, we became a free rider on Britain's decline (1992, p. 9). However, he fails to acknowledge that the changed nature of the Irish economy may have created a new "web of dependency" particularly on the

US economy, the nature and implications of which require careful analysis.[1] Touching

on the issue of dependency and taking a comparative look at the Irish economy, one would have expected the author to engage with the leading dependency analyst of the Irish case (O'Hearn, 1998). Fitz Gerald's account rests on a supply/demand analysis of the labour market. However, he fails to refer to O'Sullivan's critique that "the Irish workforce is not generating the knowledge and developing the skills that could form the social foundation for a more sustainable industrial base" due to the fact that the operations that Irish people perform for high-tech multinationals are "predominantly low-skilled" (1995, p. 388). Even more inadequate is his resort to "cultural change" as "probably the single most important factor underlying the current Irish economic renaissance" (55) while offering no theoretical analysis of what this might mean.[2] Finally, both these authors claim Ireland's success offers a model for underdeveloped economies without adverting to the potential difficulties for Ireland were other countries to replicate its success in attracting US multinationals.[3]

Allen's account is similarly inadequate. While acknowledging the role of the state in Ireland's economic success, throughout his book he views the state simply as a vehicle for the wealthy to impose their sectional interests on the rest of society (192). This sweeping, and indeed dangerous, dismissal of the state rests on what is perhaps the core argument of his book that the boom has benefited a small elite at the expense of the majority. He fluctuates between claiming that most are worse off as a result (47) and a claim that "while the general mass of the population may have seen some benefits, they are in fact receiving a declining share of the overall economy" (68), and he concludes that "a very small and highly contented minority have gained from the boom" (69) leaving a "discontented majority" (5). There is ample solid evidence in the ESRI book to show that the reality is far more complex, with data on occupational upgrading (Chapter 4), on increased and long-range upward mobility and a decline in downward mobility (Chapter 5) and of cumulative increases in real take home pay over the period 1987 to 1999 of 35 per cent (Chapter 15), to pick just a few examples. His conclusions rest on an a priori theoretical case rather than on a balanced survey of the evidence.

The most convincing case for Ireland's transformation is that offered by Ó Riain and O'Connell in their chapter on Ireland as a developmental state. This focuses on the Irish state's success in continually upgrading the country's industrial base through factors such as tax incentives and grants, creating a "transnational-friendly environment, a young and co-operative labour force and (later) a world class telecommunications system" (315). These authors' account of how the Irish state upgraded in a flexible and adaptive way the national system of innovation (315-324) is the major theoretical contribution of these two volumes to our understanding of the Celtic Tiger. They identify the reform of the IDA as serving to create "an increasingly sustainable and autonomous institutional space … within which the indigenous

[1] The implications of such dependency were recognised in a newspaper article by Garret FitzGerald (The Irish Times, December 30th, 2000).

[2] For a critical analysis of the role of culture in the Celtic Tiger, see Kirby, Gibbons and Cronin (forthcoming).

[3] For example, Sachs mentions Costa Rica's success in attracting a major new Intel semiconductor facility, reportedly beating competition from Malaysia, Ireland and Mexico (1997, p. 62) while Clark outlines the role played by the IDA in designing Costa Rica's strategy to attract foreign investment (Clark, 1997, p. 90).

development agenda could be pursued and the task of building a national system of innovation undertaken" (323). An unintended consequence of this, they conclude was to create "a social group which would ultimately come to be the foundation of an alternative model of development … a new class … the socio-political force at the heart of the Irish boom of the 1990s" (324). While achieving a far more adequate "fit" between theory and evidence, this account gives rise to a number of major difficulties. A lot rests on the significance they attach to the emergence of a new Irish entrepreneurial class leading a dynamic indigenous sector. Undoubtedly there is some truth to this, though the extent of the dependence of this class on US multinationals and the continuing dualism of Ireland's industrial structure between foreign and indigenous industry requires closer analysis than it receives in either of these two volumes.[4] For example, it is interesting to note that the former IDA managing director, Padraic White, appears less sanguine about the extent to which the MNC high-tech sector is firmly embedded in the Irish economy. He argues that the IDA must maintain its effort to keep attracting new multinationals to Ireland since "the nature of industry keeps changing – there is a continuous process of decline in some sectors (for example, textiles and mechanical engineering) and growth in others (software and e-commerce). So we can assume that a fair share of the industries we have today will decline and decay in coming years" (Mac Sharry and White, 2000, p. 313). This raises questions about the extent to which one can claim that Ireland's success is based on upgrading a national system of innovation.

However, a more fundamental and theoretical difficulty lies at the heart of Ó Riain and O'Connell's chapter with which the authors seem to grapple but never satisfactorily address. This is that the chapter treats as distinct the state's "developmental" and distributional roles. The authors do not tell us why they prefer to do this,[5] but by doing so they present a dualistic reading of remarkable state capacity on economic issues in one section with, in the next, its poor capacity in distributional or wider social terms.[6] Indeed, as Allen's book far more adequately captures, economic success has gone hand in hand with stark social failures (such as in housing, transport, the health service, childcare, homelessness, and children in need). Ó Riain and O'Connell seem to accept this: they acknowledge that the new dynamic of growth and improved living standards is also one of "increasing social polarisation" (315) and weakening welfare effort (338) and that social partnership "has not mobilised support for an expansion of welfare effort during the economic boom" (334). However, they fail to explore the relationship between these two apparently contradictory dimensions of

[4] O'Sullivan's more careful analysis highlights the ambiguities that still characterise Irish industrial development. She concludes: "Without better empirical analysis, the evaluation of current industrial performance and policy will continue to be a cyclical phenomenon with waves of exuberant optimism and dark pessimism obscuring the long-term trajectory of industrial development in Ireland" (2000, p. 283).

[5] The international literature on the developmental state defines the state's developmental nature as residing in its success in achieving growth with equity (for a survey of the growth with equity literature, see Kirby (2000a), Chapter 6; on the developmental state, see Leftwich, 1996, where on page 288 he emphasises that these states base their legitimacy on their distributional effectiveness).

[6] For a fuller treatment of the distributional impact of state policy in areas such as housing, education, health, taxation and welfare, see Cantillon, Corrigan, Kirby and O'Flynn (2001).

the Irish state, to appreciate that distributional failure undermines the sustainability of economic success or, more fundamentally, to interrogate the validity of their classification of developmental success if it combines relative distributional failure.

It is on issues of distribution and social class polarisation that these two books find quite a bit of common ground but it is also where the dissonance between theory and evidence is most marked. Allen's view that a minority has gained disproportionately from the boom and that there has been a certain class polarisation gains substantial support from the ESRI data. In their examination of the distributional impact of changes in taxation and welfare payments, Callan and Nolan conclude: "During the period since the start of the boom, their overall impact has been to produce or permit a redistribution of income from the bottom of the distribution towards the top, though maintaining a social protection floor. The tax-cutting strategy in particular has favoured higher incomes through its concentration on cutting tax rates …" (203). On trends in earnings distribution, Barrett, Fitz Gerald and Nolan find that the tightening of the labour market between 1994 and 1997 resulted in the bottom decile and quartile of the income distribution keeping pace with the median and, if anything, increasing marginally faster while the top decile continued to move away from the median (130). Interestingly, on income inequality, Nolan and Maître find the middle of the distribution gaining at the expense of the top and the bottom between 1994 and 1997 (152-153). In a very revealing finding, Layte and Whelan conclude that there is no evidence of increasing meritocracy in the Irish class system as educational qualifications have, if anything, declined between 1973 and 1994 as a means to mobility and that class origins have strengthened (101-104). Thus, the advantages associated with property outweigh education in achieving class position. Smyth and Hannan in their sharply focused treatment of education and inequality come to a similar conclusion in their findings of a widening gap between professional and unskilled manual groups in their access to full-time, third-level education (119) and of the fact that, controlling for educational level, social background continues to influence occupational status (124). Ó Riain and O'Connell specify that it is the new entrepreneurial and technical class that is gaining disproportionately: "Their increasing profits and wages would create rising inequality even as they became firmly embedded at the heart of the Irish economy and polity" (324) while "the bulk of Irish society has … acquiesced to [sic] the increasing gap between themselves and the rising professional and business classes" (339).

Thus there seems a contradiction at the heart of the Celtic Tiger but it is in dealing adequately with this at the level of theory that these two books are weakest. In the ESRI volume, Ó Riain and O'Connell go furthest in acknowledging the issue but fail adequately to address it. Bradley and Fitz Gerald ignore it, viewing economic growth as an end in itself, while the other contributors limit themselves to empirical issues with rarely more than a brief theoretical comment. Allen's book centrally addresses the issue but labours to make the evidence support his pre-existing theoretical case that a discontented majority offers a new basis for radical class political action. His view that there exists a discontented majority finds poor support in the evidence and his argument that the significant class divide is that between "the majority of workers, both blue collar and routine white-collar" and "the ruling class" (45) fails to acknowledge the different interests of workers such as those in the public and private sectors, or those in high-wage MNCs and in low-wage and vulnerable service sectors. Though he criticises the ESRI view of a growing middle class, in one place calling it

"extremely vague" (41), the Institute's well-developed analysis of the Irish class structure is far more concrete and empirically supported than is Allen's. Even more bizarre is his dismissal of political action to change state policy in favour of a vaguely stated option for co-operative control by the workers of the machinery of production (192).

This failure to develop a subtle dialectical interplay between theory and evidence, the failure in other words to elaborate a theoretical view adequate to the ambiguous nature of contemporary Irish development, weakens also the wider claims being made for the Irish case. Essentially, what is being claimed in the ESRI volume is that Ireland's success shows the ability of a small state to use its power to adjust to a globalised world economy in a way that does not undermine the capacity of the state, destroy jobs, increase earnings dispersion or worsen working conditions but that allows for economic development through internationalisation (see O'Connell, p. 59). The problem with these claims is that they fail to theorise more fully what is meant either by globalisation[7] or by development. Due to the lack of clarity about globalisation, it is not at all clear what is being claimed for the Irish case. The editors in the ESRI volume state their case as follows: "[T]he Irish growth experience and its distributional consequences is not a simple story of globalisation, forced withdrawal of the state and the promotion of neo-liberalism" (1). The notoriously slippery term "neo-liberal" seems to be introduced here as a synonym for deregulation and the retreat of the state. This, however, overlooks more recent understandings that neo-liberalism entails not so much the retreat of the state as the resituating of the state "into a subordinate relationship with global market forces" (Falk, 1996, p. 15) and "concentrating the benefits of growth upon already advantaged sectors within and among societies" (Falk, 1997, p. 19). In this "post-Washington Consensus" (Stiglitz, 1998) "institutions matter" (Burki and Perry, 1998) as they are re-shaped to embody more fully a market logic and impose this on society.[8] The claim being made for the Irish case, therefore, rests on too crude a characterisation of globalisation and would require a more subtle political economy analysis of the changing relationship between state and market in Ireland and its impact on social well-being than is contained in these two volumes.[9]

An equally glaring theoretical neglect in these two books is any discussion of what is meant by development. Allen is critical of the attempt to apply development theory to the Irish case because it shifted the focus off class divisions within Ireland (21) while most of the contributors to the ESRI volume who use the term presuppose that its meaning is clear. The omission is particularly evident in the chapter by Ó Riain and

[7] In these two volumes, one finds reflected each of the understandings of globalisation identified by Held et al. (1999, pp. 2-14). Bradley and Fitz Gerald reflect (to the extent to which one can judge on the basis of accounts that only mention globalisation in passing) understandings close to a weak reading of the hyperglobalist thesis, namely the privileging of an economic logic. Indeed, a quote from one of those identified as a quintessential hyperglobalist, Kenichi Ohmae, lauding Ireland as "a harbinger of the coming shift in national economies" graces the back cover of the ESRI book. Allen clearly reflects the sceptical thesis in his discussion of "the myth of globalisation" (188) while the Ó Riain and O'Connell chapter reflects the transformationalist thesis, with its view that the state can, in an innovative and flexible way, continue to play a crucial developmental and distributional role in adjusting to the opportunities of globalisation.

[8] For a discussion of this point in relation to Latin America, see Kirby (2000b).

[9] For an analysis of Ireland's political economy in the 1990s, see Kirby (forthcoming).

O'Connell since the adjective "developmental" is central to their case for the success of the Irish state. The only discussion of the term takes place at the beginning of Chapter 14 on political culture by Rona Fitzgerald and Brian Girvin. It is, unfortunately, an ill-informed, confused and seriously inadequate treatment. It seems self-evident to this reviewer that any claims for developmental success in Ireland require that the meaning of the term be specified.[10]

If globalisation is the context and development the end sought, the contributors to the ESRI volume agree that the state is a key means to get there (though the reader is left with the impression that more fundamental disagreement between contributors about the respective roles of state and market lurks beneath the surface). However, serious weaknesses are also evident in treatment of the state in both volumes. Allen's dismissal of the state has already been mentioned, while most authors in the ESRI volume equate the state with bureaucratic elites; civil society is largely missing despite the editors' contention in their introduction that "politics matter" (3).

The principal reason given for the transformation of the Irish state's capacity is the conversion of bureaucratic and political elites (ESRI authors avoid mention of corruption among these elites while Allen treats of it with unrestrained indignation[11]). Again the Ó Riain and O'Connell chapter is the only one to acknowledge that the state is far more than a bureaucratic machine and that its form is shaped by social struggle. It presents the success of the Irish state as the outcome of a coalition forged in the late 1980s between a burgeoning professional class and a group of unionised workers, each of which held the other in check, assisted by the state: "The neo-liberal impulses of the rising class of internationalised professionals are at least partly held in check in Ireland by the continuing ability of the unions to safeguard the basic social rights guaranteed (at a low level) by the universalistic elements of the Irish welfare state and by the middle class's own self-interest in maintaining the subsidies provided to them by the pay-related welfare state" (338). This is a plausible conjunctural reading of the period from the late 1980s to the late 1990s and offers a far better analysis of the shifting class nature of Irish society than does Allen's attempt to counterpose a discontented majority against a ruling class. However, Ó Riain and O'Connell imply that the basis of this coalition is now being undermined: the unions and other social actors have less say in shaping the lead sectors of the economy, the role of the state has given way substantially to the market, and the new class of technical professionals and self-employed small businesses which have become the basis of spiralling inequality in market incomes fall largely outside the institutions of social partnership (338-339).

There is a quality of insight in Ó Riain and O'Connell's analysis which is rare in the more static institutional and policy focus of much Irish social analysis. This allows them uncover some of the fundamental contextual challenges facing social partnership. Through her more empirical examination of how social partnership

[10] In a recent article Danny McCoy seemed to recognise the need for more attention to be devoted to theorising development when he wrote: "Development can be interpreted as qualitative increases in economic well-being in contrast to the quantitative increases implied by growth" (The Irish Times, January 5th, 2001). Echoing Naim's contention that economic thinking in the 1990s has led to the rediscovery of development (2000, pp. 521-523), McCoy added that that "continued growth can be at the expense of development".

[11] For a more adequate theoretical treatment of corruption in Ireland, see Kearney and Murphy (2000).

functions, Hardiman highlights the strains caused by the fact that it is not addressing the growing inequalities generated by economic success and by the limits of its embededness in the political system (305).[12] Taken together, these two chapters pose major questions about the sustainability of this model of "competitive corporatism" (343) in which the equality agenda of earlier corporatist arrangements gave way to an emphasis on international competitiveness and macro-economic stability and which has been seen as perhaps the single most innovative element of the Irish success. By contrast, Allen's book, despite its subtitle, pays little attention to social partnership, dismissing it as a means of holding down wages as profits boomed.

Probing the reasons for these institutional and class outcomes requires a detailed analysis of Irish political culture. Unfortunately, Fitzgerald and Girvin's chapter on political culture and the conditions for success is by far the weakest in the ESRI book. Adopting too static and elitist a view of political culture, it fails to weave together into a coherent account such disparate elements as the liberal/conservative divide on moral issues, swings in electoral support and Ireland's economic success. Bizarrely, it neglects what Ó Riain and O'Connell quite rightly identify as the most salient feature of Irish political culture in blunting the state's ability to forge a long-term developmental project, namely its clientelism (see Kirby, 1997, pp. 193-210).

The failure to follow through on the implications of some of the insights or potential of these chapters lends the ESRI volume a frustratingly unfinished quality. For example, in their conclusion, the authors argue that reversing the trend in the declining proportion of national income going on social spending will require a re-negotiation of the terms of social partnership and they also expect some reversal in the marked decline in the wage share of national income (352-353). Yet, it is far from clear how this could happen given the changing nature of class forces and the tendency of the Irish state to accommodate rather than to pursue robust redistributive politics as uncovered in these chapters. With the weakening of those class actors who might espouse such a politics, where lies the hope for a re-negotiation of the terms of partnership? Allen would respond that it lies in class struggle, but the divergent interests of workers as mentioned above seems to preclude this. Furthermore, the fact that the Irish success rests on being a low-tax, low-spend economy raises other dilemmas not mentioned in either of these two books. As Ireland's stand at the Nice Summit illustrated, the Irish government believes its low corporation tax regime is key to its industrial policy. In the past, this has necessitated high personal taxes but, in a period of economic growth, there is now room to reduce these. However, there is a vicious circle here and some element will have to change if we are to reverse the decline in social spending relative to GDP and to some of our nearest neighbours. It is far from clear how this can happen.

The weaknesses outlined in these two books point to more fundamental theoretical and methodological weaknesses which pervade the Irish social sciences and make them blunt instruments for adequately uncovering the ambiguities and complexities of Ireland's recent phase of development. The foreword to the ESRI volume recognises the need for a "genuine cross-disciplinary transfer of insights and ideas from one field to another" (xiii), yet there is limited evidence in these books of such a transfer. There is little here of Giddens's expectation of a renewed synthesis in the social sciences in

[12.] These are exactly the concerns raised about social partnership by the President of the Irish Congress of Trade Unions, Inez McCormack, in an article in The Irish Times, January 25th, 2001.

which pre-existing disciplinary divisions will become progressively less sharply-defined and a theoretical synthesis will emerge marked by an interest in large-scale, long-term processes of social transformation (Giddens, 1987). Specifically, while the ESRI volume offers rich empirical evidence and data, it is far weaker in contributing to what must be the most urgent theoretical issue facing analysts of the Celtic Tiger, namely how to understand the relationship between economy and society in Ireland today and, by extension, the nature and determinants of social well-being.[13] Most fundamentally there seems little awareness of the need to develop, through a careful dialectical interaction of theory and evidence, a fuller and more adequate theoretical understanding of the Irish case. As a result, the ESRI volume is rather too suffused in places with an "end of history" tone, as if Ireland has finally made it and the vast contradictions and injustices of contemporary Irish society are minimised. It is revealing (and, indeed, disturbing) that Fitzgerald and Girvin can write the following without apparently any awareness that a similar situation could face Ireland in 2001 as it nervously eyes a US economic downturn and faces the prospect of becoming a net contributor to the EU: "If in 1973, FDI and membership of the EEC promised to provide Ireland with a positive sum outcome, avoid distributional conflict and secure internal political stability, the onset of recession after 1973 undermined this prospect" (275).

In their introduction, the editors of the ESRI volume claim that the Irish success "holds out the prospect of prescriptions that go beyond the Irish case", namely that "sustained development can be achieved by a combination of factors that, in principle, are available to other countries" (1). Such a claim requires a more rigorous interrogation of the theoretical accounts of the Irish case than is offered here to see if it really merits the wider significance attached to it. Until this is done, claims about "the Irish model" (Bradley, 23) and its "lessons for the periphery" (Fitz Gerald, 55) rest upon an insufficiently theorised and a partial reading of the Celtic Tiger.

[13] See Kirby (2000a, Chapter 2 and forthcoming, Section II: Chapters 4, 5 and 6) for a fuller discussion of this topic.

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Figure 1: Estimated Devaluation Probabilities for the Irish Pound 1979-1994

Figure 2: Estimated Devaluation Expectations of the Irish Pound 1979-1994

Figure 3: Estimated Devaluation Expectations DM/IR£, based on UIP

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