

Evaluation of the Ratio of Unemployment Rates as an Indicator of Fair Employment: A Critique

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Abstract: A recent study by Gudgin and Breen (1996) criticised the use of the high and stable ratios of Catholic to Protestant unemployment rates in Northern Ireland as a measure of the existence and extent of job discrimination. In spite of the sophistication and novelty of the modelling methodology used to justify their claims, I contend that their wider interpretation of the underlying causes of long-term structural labour market disadvantage in the Catholic community is flawed.

I INTRODUCTION

Of all the topics of Northern Ireland social science research, one of the most controversial is almost certainly the examination of the issue of labour market discrimination and fair employment. Not only are the conceptual issues difficult and complex, but the charged political climate inevitably results in debates in this area spilling over from academic arenas into more popular, if less rigorous, media.¹ In this paper I examine a recent study whose publication generated a storm of controversy and which

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1. For examples of the popular media debate over the Gudgin and Breen report, see Gudgin (1996); Gudgin and Breen (1996a); Cooper (1996).

illustrates some of the difficulties that arise in carrying out research and attempting to reach academic consensus in this area within Northern Ireland.

The study entitled *Evaluation of the Ratio of Unemployment Rates as an Indicator of Fair Employment* (Gudgin and Breen, 1996), was published by the Central Community Relations Unit (CCRU) of the Northern Ireland Office (NIO) in May, 1996. This event was accompanied by a short press release entitled *Research on Male Unemployment Rates and Fair Employment*, issued by the Northern Ireland Information Service. Although probably drafted with media rather than academic criteria in mind, this press release — dealing with an issue of acute political sensitivity — provided a summary of the study's research findings and set the scene for the subsequent acrimonious media debates.²

Nowhere in the press release was there any statement of the problem that gave rise to the CCRU research project (i.e., the fact that the ratio of the Catholic to Protestant unemployment rate has remained high and above two since it was first measured in the 1971 Census). The following is the key section of the press release that comments on the substance of the Gudgin and Breen research findings:

The publication ... (assesses) ... the extent to which the ratio of Catholic and Protestant male unemployment rates is a valid measure of fair employment. The authors ... conclude that the ratio is not a valid measure as it is influenced by a complex interaction of factors, for example, population growth. The research also addresses the issue of why the male unemployment ratio has changed very little over the past 25 years and suggests that religious discrimination is not necessarily a factor in maintaining the ratio.

The seeds of much of the subsequent controversy over the Gudgin and Breen findings were clearly sown in the press release as well as in the often oversimplified account of the work presented by its authors in the local (Northern Ireland) press. In neither the press release nor in the Gudgin and Breen study is any attempt made to define the crucial term "fair employment".³

2. A seminar on a draft of Gudgin and Breen had been organised by the CCRU in September, 1994. The version actually published in 1996 was accompanied by two critiques, written by Professor Bob Rowthorne and Mr Anthony Murphy, plus a robust rejoinder by the authors. However, few of the issues that we raise in this paper were addressed in that earlier debate. It should also be noted that the responsibility for review of Fair Employment was removed from the CCRU in November 1994 and given to SACHR.

3. The omission of a definition of "fair employment" in Gudgin and Breen should be contrasted with the careful treatments available in McCrudden (1996) and Cassidy (1996).

Thus, from the very start of the controversy, nobody had a clear, unambiguous and widely acceptable definition of "fair employment" in mind, and everybody was free to argue in terms of their own — often implicit — definitions. Many of the misunderstandings and misrepresentations of the Gudgin and Breen findings during the subsequent media and academic debate may well have arisen from this crucial and inexplicable lack of a clear and acceptable definition of the central issue.

Having started with basic confusion over the meaning of "fair employment", the rest of the press release was bound to raise questions, even if it was an accurate summary of the Gudgin and Breen research findings. For example, the fact that the unemployment ratio is influenced by a "complex interaction of factors" is not, in itself, proof that it is an invalid measure of "fair employment". It all depends on the definition of "fair employment" and how any such definition is linked to the "complex interaction of factors". Also, it may indeed be the case that religious discrimination is not at the basis of the constancy over time of the Catholic-Protestant unemployment ratio. However, if it were to be shown that religious discrimination had been a root cause of the origin of Catholic structural disadvantage in the Northern Ireland labour market, in an era before the Fair Employment legislation was implemented in the North, then the claims made in the Gudgin and Breen study might reasonably be considered as tendentious.

In this paper I carry out a methodological critique of the approach embodied in the Gudgin and Breen report. My critique is structured in the following way. In Section II I examine how the basic issues are defined, and whether issues that might be thought to be closely related to the core problem of "fair employment" are dealt with. In Section III I examine the statistical and modelling methodology used by Gudgin and Breen. In Section IV I examine the simulation results of the Gudgin and Breen modelling exercise, and ask whether the interpretation provided by Gudgin and Breen of these results is accurate, comprehensive, and exhausts all possible ways of applying the results to the labour market problems of Northern Ireland.

Section V makes some suggestions on how the Gudgin and Breen research methodology into "fair employment" could usefully be broadened to take into account wider aspects of the functioning of the Northern Ireland labour market. If such aspects were taken into account, the valuable and interesting, if somewhat narrowly based, findings of Gudgin and Breen are likely to be better understood and to command acceptance both within the socio-economic research professions and more widely within the different Northern communities. Section VI concludes.

II DEFINING THE PROBLEM

The core of the Gudgin and Breen report consists of an investigation into the underlying causes of the persistence and stability of the high ratio of the Catholic-Protestant unemployment rate in Northern Ireland since it was first identified in the 1971 Census of Population. Two different methodological approaches are identified in the report:

- (i) A static or cross-sectional approach that attempts to explain the magnitude of the unemployment ratio at one point in time. The best known example of this approach is the earlier CCRU report by Murphy with Armstrong (1994), entitled *A Picture of the Catholic and Protestant Male Unemployed*.⁴
- (ii) A dynamic or evolutionary approach that attempts to explain how the magnitude of the unemployment ratio evolves over time as the labour market adjusts through flow mechanisms such as entry, exit or migration.

Gudgin and Breen point out that previous static studies have found that, even after conditioning on a series of variables that attempt to measure characteristics of labour force participants (such as age, education, social class, etc.), about half the difference in the Catholic-Protestant unemployment ratio cannot be explained, and thus appears to be associated in some as yet unspecified way with religious affiliation.⁵ Gudgin and Breen assert that this finding on Catholic-Protestant unemployment differentials has been interpreted in public debate as implying a close association with discrimination on grounds of religious affiliation.⁶

The motivation for the Gudgin and Breen research was provided by their concern with possible misinterpretations of the implications of the static or cross-sectional approach. Their dynamic evolutionary statistical modelling methodology is designed to address the following issues:

4. In fact Murphy with Armstrong (1994) makes use of Labour Force Survey (LFS) data for the four years 1985, 1986, 1990 and 1991, and Continuous Household Survey (CHS) data for the years 1986-1989. But, since the sample size in these data sets in any one year is quite small, the data from each of the years are pooled. Hence, the analysis is essentially static.

5. Two such static studies are in general agreement on the residual proportion of the variance of the unemployment ratio that appears to be associated with religious affiliation: Murphy with Armstrong (1994) and Smith and Chambers (1991). Compton (1991) ascribes a much lower proportion to religious affiliation, but Murphy with Armstrong (1994) argues that Compton's methodology produces results that are biased towards ascribing too low values.

6. It should be noted that Gudgin and Breen do not produce any actual examples from the academic literature or the popular media where claims of an association between unemployment differentials and discrimination on the grounds of religious affiliation have been asserted. Indeed, they ignore the very careful section entitled "Interpretation of Findings", in Murphy with Armstrong (1994), pp. 65-66, where no such association is made.

- (i) Given the presence of a well-established high differential ratio of Catholic-Protestant unemployment rates, is this ratio a valid and reliable measure of the degree of fairness or unfairness of employment in the Northern labour market?
- (ii) In the face of a fluctuating level of overall Northern unemployment, what explanations can be found that would generate the high and relatively constant ratio of Catholic-Protestant unemployment rates over the 22 year period 1971-93?

Gudgin and Breen claim superiority for the dynamic over the static approach. Three reasons are advanced to support this claim. First, while the cross-sectional approach gives an explanation at one point in time, the evolutionary approach will address the dynamics of movement in the ratio through time. Second, and closely related to the first point, the evolutionary approach permits one to introduce new factors over and above those used in the static approach, e.g., labour force growth and migration flows. Third, the insights of the static approach (e.g., associating poor labour market performance with group characteristics) can be encompassed within the dynamic approach (as measured probabilities of gaining or retaining jobs).

Section I of the Gudgin and Breen report proceeds to define a range of different measures of the relative labour market performance of the Catholic and Protestant communities. These measures can have quite complex inter-relationships with each other and could provide motivation for a range of alternative possible definitions of "fair employment". However, the relationship between relative labour market performance (measured by such indicators as the unemployment or employment ratios, the unemployment/employment odds ratio, the unemployment rate difference or the employment gap) and "fair employment" or "fair participation" (Cassidy, 1996) is never clarified by Gudgin and Breen. Indeed, after my own examination of the *Code of Practice* of the Fair Employment Commission (FEC), I concluded that no such relationship is contained in, or necessarily underpins the legislation.

In fact the concept that drives the FEC *Code of Practice* is that of fair "hiring and firing" rather than fair "employment". The difference between these two concepts is more than semantic. Legislation on fair "hiring and firing" is focused on the demand side of the labour market, i.e., on the actions that employers may or may not take in the process of hiring labour if they need to expand, or firing labour if they need to contract. Thus, the legislation is relatively silent on the whole range of issues that research has shown are associated with the supply side of the labour market, and where these issues heavily influence the probability of success or failure of individual participants, be they Catholic or Protestant, in the jobs market.

On the other hand, the concept of fair “employment”, although used freely as a synonym for fair “hiring and firing”, carries implications of an ex-post measure of performance in the labour market that might be deemed inconsistent with, say, a high and persistent differential Catholic-Protestant unemployment ratio or employment gap. Thus, the law permits some forms of affirmative action which might lead to a greater inflow of Catholics into jobs than Protestants, in relation to overall populations shares (McCrudden, 1992). However, this would only be likely to arise because there are higher proportions of Catholics in the social groups which are predominantly entering the labour market.

Thus, even before Gudgin and Breen present their statistical modelling methodology and results, there might be strong reasons to doubt, on purely ex-ante grounds, that a policy based purely on fair “hiring and firing” would by itself be sufficient to remove a pre-existing high Catholic-Protestant differential unemployment ratio, if the causes of that differential lay in the supply side labour market characteristics of Catholics *vis-à-vis* Protestants. Far from such failure necessarily pointing to the presence of discrimination on the grounds of religious affiliation, which Gudgin and Breen suggest is a common (though fallacious) view, it would more likely direct one’s attention to the need for public policy actions aimed at the supply-side of the labour market that would act as complements to, rather than substitutes for, legislation on fair “hiring and firing”.

III THE STATISTICAL MODELLING METHODOLOGY

A statistical model of the Northern Ireland labour market is the central contribution that the Gudgin and Breen report makes to the research literature. As with all such models, it must simplify the complex reality of the real world into a series of mathematical equations that tries to capture the essence of how the labour market behaves and evolves over time. To a very large extent, the modelling exercise is successful in achieving this goal. Thus, in this section we confine ourselves to a description of the Gudgin and Breen model, in order to isolate its core features and to comment on the simplifying assumptions that will need to be relaxed in any future developments and extensions of the model.

What strikes one immediately about the Gudgin and Breen model is that the notion of labour market “segmentation” into Catholic and Protestant behavioural equations is central to its specification. Segmentation is *imposed* on the model structure rather than *derived* from behavioural assumptions. Thus, a crucial phenomenon is left unexplained.

Taking the Catholic part of the model as an example, the following are the key model equations:

- (i) Growth in the Catholic working age population (W^c) is driven by the Catholic natural growth rate (r^c) and Catholic migration between Northern Ireland and Britain (M^c).
- (ii) The Catholic labour force (L^c) is calculated by applying a Catholic participation rate (p^c) to the Catholic working age population (W^c).
- (iii) A crucial initial assumption is made that Catholic migration between NI and Britain (M^c) is driven by the Catholic-British unemployment rate differential ($u^c - u^B$), with an autonomous Catholic migration element (Mk^c).⁷ This assumption is later relaxed to an alternative one where Catholic migration is driven by the difference between the aggregate NI unemployment rate and the British rate ($u^{NI} - u^B$).⁸
- (iv) Catholic employment (E^c) is driven by a dynamic equation as a function of two different elements. The first describes the growth of "retained" Catholic jobs:

$$(1 - q^c)E_{t-1}^c(1 + w)$$

where q^c is the Catholic quit rate, w is the growth rate of jobs and the subscript ($t-1$) indicates the previous years value. The second describes the Catholic "share" of the total number of free jobs in the economy:

$$\delta S q E_{t-1}(1 + w)$$

where δ is a Catholic "disadvantage" parameter, measuring the proportion of the "fair" share S of free jobs that Catholics obtain, and q is the overall NI quit rate.

- (v) The number of unemployed Catholics (U^c) is defined as the difference between the Catholic labour force (L^c) and Catholic employment (E^c).

7. Since areas of Catholic majority are predominantly west of the Bann and in certain regions of greater Belfast, it might be thought that intra-NI migration equations would be needed to describe migration possibilities more fully. However, the intra-NI spatial or geographic dimension of the Gudgin and Breen model is not made explicit, but will be taken as implicit by anyone who is familiar with the Northern situation.

8. It should be noted that the total rate of unemployment is used in the Gudgin and Breen migration equations for Catholics and Protestants. However, research in the South of Ireland shows that it is the short-term rate that drives migration and that the long-term unemployed are neither very active in the Irish labour market nor do they migrate in any great numbers (NESC (1991)). We return to this point below when interpreting the different Catholic and Protestant migration propensities to a change in the unemployment rate.

Thus, the Gudgin and Breen model of the NI segmented labour market consists of three different elements:

- (a) Exogenous variables whose values are determined outside the NI model (e.g., the British unemployment rate and total employment in NI).
- (b) Parameters that describe the fundamental characteristics of the Catholic and Protestant populations (e.g., natural population growth rates, participation rates, marginal propensities to migrate between NI and Britain, quit rates, the Catholic disadvantage parameter, etc.)
- (c) Endogenous variables whose values are determined within the NI model (e.g., unemployment rates, etc.).

Turning to each of the above model equations for Catholics, we first ask if there might be any possible unforeseen consequences of the particular specifications chosen by Gudgin and Breen. We take each equation in turn, and deal mainly with the Catholic case, since entirely analogous points can be made about the Protestant equations.

Working-age Population

In the working age population growth equation, it is implicitly assumed that the differential between the Catholic and Protestant natural rates of increase (i.e., between r^c and r^p) is telling us something about Catholics and Protestants that is entirely separate from other aspects of the Northern Ireland situation. This may or may not be the case. It is well known in the international literature that fertility and economic development are closely interrelated. Given that the demographic revolution in the Republic of Ireland took place over a very short time period during the 1980s, it may well be that such rates of natural increase are not exogenous, but are closely interrelated with the historically disadvantaged situation of Catholics in Northern Ireland or with a wider isolation of Northern Ireland within Europe. To regard these rates as fixed and independent of economic well-being may be untenable.

Labour Force Participation

The labour force equations seem to raise no problems, since no use is made by Gudgin and Breen of the possibility that participation rates could vary between Catholics and Protestants.

Migration Between NI and Britain

The manner in which migration is handled by Gudgin and Breen raises serious questions, even though they implement a series of different migration

formulations. The first (and preferred) formulation has Catholic and Protestant migration between NI and Britain responding, respectively, to Catholic and Protestant unemployment differentials with Britain. Four reasons are advanced to justify this formulation: the present segmentation of residence and workplace in NI along confessional lines; the likely behaviour of school leavers; the dominance of key labour market areas by one community (a point almost identical to the first); and the fact that experience of unemployment "differs sharply between Catholics and Protestants".

It is very difficult to believe that the assumption made by Gudgin and Breen of segmented migration behaviour can be detached from the whole concept of "fair employment" in Northern Ireland, particularly if the latter is defined in a broader manner than "fair hiring and firing". Indeed, the reasons for segmented migration should be, in themselves, the object of serious research rather than explained in a few throw-away lines of largely circular reasoning based on the facts of existing residential segregation and its consequences for potential migrants (Gudgin and Breen, pp. 14-15).

In the absence of annual data series on migration by religious affiliation, the Gudgin and Breen migration equations are calibrated using the 1971 and 1991 Census data and a process of constrained iteration.⁹ Such an approach is probably acceptable in the circumstances. However, the finding that the Catholic propensity to migrate in the face of a unit rise in the NI Catholic-British unemployment difference (at 0.048) is almost three and a half times smaller than the corresponding Protestant propensity (at 0.165), surely needs further exploration and explanation.

As mentioned above, research in the Republic of Ireland indicates that migration flows respond to differences in short-term unemployment rates and are much less sensitive to differences in long-term rates. If, as is the case, a considerable fraction of Catholic unemployment in the North is of the long-term variety, one would expect to observe a much lower migration propensity for Catholics compared with Protestants. However, if this is indeed the case, then the parameter in the migration equation becomes interconnected with the Catholic disadvantage, and is not an independent or exogenous factor. Thus, the model as presently specified ceases to be structural and needs to be augmented by equations that explain the differences between the Catholic and Protestant migration propensities.

9. It should be noted that the migration model used by Gudgin and Breen is a special case of the more general Harris-Todaro rural-urban migration model, and that the potential role of differences in expected earnings in the local and alternative labour markets is ignored (Harris and Todaro, 1970). Thus, occupational differences between the two communities, with obvious consequences for earnings, may be a source of misspecification in Gudgin and Breen's migration equation.

In fact, Gudgin and Breen provide an alternative migration equation that assumes both communities respond to the differential between the overall rate of unemployment in NI and the British rate. Thus, in this case the assumption of labour market segmentation is abandoned, and it is assumed that NI functions as an integrated labour market (at least as regards migration behaviour). After iterative calibration, these alternative equations take the form:

$$M^P = (-0.0033 - 0.065 (u^{NI} - u^B)) W^c$$

$$M^c = (-0.0033 - 0.115 (u^{NI} - u^B)) W^c$$

Here, the Catholic propensity is seen to be about one-and three-quarters the size of the Protestant propensity. We return below to the consequences of the non-segmented migration equation compared with the previous segmented equation.

Employment, or the Demand for Labour

The previous three equations (for working-age population, labour force and migration) operate on the supply side of the labour market. The final behavioural equation for Catholic and Protestant employment resembles in many ways the demand for labour broken down by religious affiliation. The full details are provided by Gudgin and Breen in their Appendix 3.

Three important parameters are contained in this equation: the quit rates for Catholics and Protestants, and a measure (δ) of Catholic disadvantage relative to a strictly proportionate allocation of jobs on the basis of the numbers of Catholics and Protestants in the three job-seeker categories (job quitters, the unemployed and new entrants). By setting the parameter δ to a value less than unity, Gudgin and Breen can examine different levels of Catholic disadvantage:

In the Gudgin and Breen model, the interpretation given to values of δ less than unity are not associated with an absence of "fair employment", i.e., they do not arise because of discrimination in favour of hiring Protestants purely on the grounds of their religious affiliation. Rather, the parameter δ purports to capture "job-relevant characteristics" which are deemed to be "legitimate differences" (e.g., age, location, education, etc.). At this point, Gudgin and Breen reach over to the cross-sectional literature of Murphy with Armstrong (1994) and Smith and Chambers (1991) for a justification and interpretation of the disadvantage parameter. In particular, Gudgin and Breen assert: "we can set this to a value that we believe reflects differences between the two communities in their average levels of job relevant skills and experience etc."

There are a few reasons why this assertion may be the most controversial issue in the Gudgin and Breen report. First, the differences in long-term rates of unemployment are considerable between Catholics and Protestants. Thus, a high fraction of Catholics may not be able to participate in the labour market in any very effective way. Hence, it may not be the average levels of job-relevant skills that should be used, but a level that applies to a narrower category of Catholic short-term unemployed, quitters and new entrants. Second, cross-section studies factor in location-type explanatory variables that would seem to be intimately associated with differential migration behaviour (see above). Thus, in the Gudgin and Breen model, which handles differential migration behaviour separately from Catholic "disadvantage", there may be difficulties in disentangling these two factors from each other, or indeed in regarding them as separate in any meaningful sense.

In this section, I have examined the component parts of the Gudgin and Breen labour market model and reviewed the validity of the assumptions made. As with any experimental model, there are improvements and extensions that could be made. However, further insights can be gained by examining the operation of the Gudgin and Breen model in simulations, to which we now turn.

IV INTERPRETING THE RESULTS

The dynamic evolutionary model of Gudgin and Breen can be used to generate a wide range of outcomes for the Catholic-Protestant unemployment ratio, depending on the values of the model's parameters that are assumed. The simulations reported in Section 3 of Gudgin and Breen examine the effects of varying a set of four crucial parameters, both separately and jointly in various combinations. These four parameters are:

- (i) The quit rates (q^c and q^p) for Catholics and Protestants;
- (ii) The Catholic disadvantage parameter (δ);
- (iii) The "natural" growth rates of the Catholic and Protestant working age populations (r^c and r^p);
- (iv) Different migration propensities at the margin for Catholics and Protestants, where segmented labour markets are assumed.¹⁰

The baseline simulation is one where the Catholic and Protestant parameters in (i), (iii) and (iv) are assumed to be identical and where there is no Catholic disadvantage (i.e., $\delta = 1$ in (ii) above). Not surprisingly, the model shows that no differential opens up in the Catholic-Protestant unemployment ratio if the model is started with no such differential, and that any initial differential

10. We will return below to the case where the non-segmented migration equations are used.

(say, the historical value of 2.6 in the year 1971) is quickly eliminated over time. In such a labour market, Catholic behaviour would be indistinguishable from Protestant behaviour.

The next set of four simulations makes isolated changes in one parameter at a time, leaving the other three identical as between Catholics and Protestants. Thus, the following parameter values are set:

- (i) Quit rates: $q^c = 11.4$ per cent and $q^p = 9.6$ per cent
- (ii) Catholic disadvantage: $\delta = 0.80$
- (iii) "Natural" growth in working-age population: set at their known values
- (iv) Differential migration propensities for segmented model: Catholic marginal rate set at one-third of Protestant rate.

Starting in 1971 with the historical Catholic-Protestant unemployment ratio of 2.6, by twenty years later the results of the simulation yield the following:

	<i>Case (i)</i>	<i>Case (ii)</i>	<i>Case (iii)</i>	<i>Case (iv)</i>
Starting ratio	2.6	2.6	2.6	2.6
Long-run ratio	1.16	1.45	1.10	1.12

Thus, the Catholic disadvantage parameter (case (ii)) is the most powerful factor in isolation that serves to sustain over time any initial differential in the Catholic-Protestant unemployment ratio. None of the other factors are powerful in isolation.

The model is now run to examine the cumulative impact of all four factors. These are shown below (in the same order as presented in Table 5 by Gudgin and Breen):

	<i>Case (iii)</i>	+ <i>Case (iv)</i>	+ <i>Case (i)</i>	+ <i>Case (ii)</i>
Starting ratio	2.6			
Long-run ratio	1.10	1.24	1.46	2.20

With all four factors operating, it is seen that the long-run unemployment ratio reaches an equilibrium value of 2.2, very near the present ratio.

Gudgin and Breen present a simulation that includes a combination of case (i) and case (ii) (i.e., higher Catholic quit rates and Catholic disadvantage). This produces an equilibrium ratio of 1.66, which, they observe, is close to the fraction of the ratio explained in cross-sectional studies as due to "structural"

disadvantage. Hence, the combination of differential quit rates and Catholic disadvantage are the strongest factors serving to sustain the unemployment ratio differential. With the addition of the differential in migration response (case (iv)), the long-run ratio rises to 1.95. If we classify these three factors as representing Catholic disadvantage in the wider sense, then almost 90 per cent of the differential unemployment ratio can be "explained" by this extended measure of Catholic disadvantage.¹¹ Thus, there is almost nothing left to explain in terms of the higher natural population growth rate, although, as we pointed out above, this is probably also associated with disadvantage in a very wide and long-term context.

Gudgin and Breen examine the robustness of the above simulation results to the specification of the migration equation. We comment only on the choice between the "segmented" and the "homogeneous" labour market versions. In the former, each religious grouping responds to its own rate of unemployment relative to the external British rate. In the latter, each group responds to the differential between the average NI rate and the external British rate. The results for the individual effects are as follows, where S denotes segmented and H denotes homogeneous:

	<i>Case (i)</i>	<i>Case (ii)</i>	<i>Case (iii)</i>	<i>Case (iv)</i>
Starting ratio	2.6	2.6	2.6	2.6
Long-run ratio (S)	1.16	1.45	1.10	1.12
Long-run ratio (H)	1.21	1.64	1.10	0.95

A final comparison is made between the two main disadvantage factors (cases (i) plus (ii)) and the other factors (cases (iii) plus (iv)) in the segmented and homogeneous migration models. The long-run Catholic-Protestant unemployment ratios in each of the two models and for each of the two pairs of parameter variations, are as follows:

	<i>Segmented labour market model</i>	<i>Homogeneous labour market model</i>
Differential quit rates plus Catholic disadvantage	1.66	1.97
Migration plus natural population growth factors	1.24	1.05

11. Gudgin and Breen focus on case (i) and (ii), but it seems appropriate to classify the Catholic migration behaviour as "disadvantage".

Thus, in the homogeneous labour market case (where both Catholics and Protestants respond to the average NI unemployment rate), almost all the differential in the Catholic-Protestant unemployment ratio (1.97 out of a total of 2.2) can be explained by two factors that are associated with Catholic disadvantage. Neither population growth nor migration factors play any significant role.

Gudgin and Breen draw many conclusions from their model simulations, but the most important would appear to be the following (pp. 38-40). They claim that the degree of Catholic disadvantage built into their model accounts for the widely observed "structural" disadvantage of Catholics that has been picked up in the cross-sectional studies. From the table immediately above, they clearly have in mind the figure of 1.66 accounted for by differential quit rates and Catholic disadvantage in the case of the "segmented" labour market model.

However, if one uses their "homogeneous" labour market model shown in the table above, which we feel is more in keeping with the spirit of the Fair Employment legislation and Gudgin and Breen's assertion about the absence of any substantial level of direct or indirect discrimination or so-called "chill factors" in the NI labour market (Gudgin and Breen, pp. 39-40), then almost *all* of the differential Catholic-Protestant unemployment ratio can be accounted for by structural disadvantage. Thus, the issue of illegal discrimination can be removed from the picture and attention must focus on Catholic structural disadvantage. What the Gudgin and Breen model shows is that the Fair Employment legislation, as presently formulated in terms of fair "hiring and firing", has not been able, in isolation, to remove Catholic disadvantage in the Northern Ireland labour market. I find it hard to believe that any serious researcher would ever have thought otherwise.

V THE NEED FOR AN ENCOMPASSING LABOUR MARKET FRAMEWORK

The findings of the Gudgin and Breen report are consistent with the conclusion that Fair Employment legislation has been broadly successful in abolishing almost all traces of overt and substantial direct or indirect illegal discrimination in hiring and firing aspects of the Northern labour market. The problems that remain in the Northern labour market, which have been incorporated into the Gudgin and Breen dynamic evolutionary model, appear to be associated with Catholic structural disadvantage relative to Protestants which is of a kind that will almost certainly prove much more difficult to cure than the removal of illegal discrimination in the process of hiring and firing on the grounds of religious affiliation.

In a narrow legalistic sense, the Gudgin and Breen claim is correct, that "the ratio of unemployment rates is not, then, a valid or reliable indicator of the degree of fair employment in the Northern Ireland labour market". Any common practice of deducing from a high unemployment ratio that illegal discrimination must be a cause is, indeed, quite wrong, as Gudgin and Breen claim.

But Gudgin and Breen continue further with this chain of reasoning. They claim that:

If it is the case that there is little systematic discrimination in Northern Ireland, then any Act aimed at reducing the unemployment ratio by combating systematic discrimination is unlikely to succeed unless it was unintentionally to introduce an element of discrimination against Protestants into the labour market.

This claim does little justice either to the careful model-based analysis contained in the Gudgin and Breen report, or to the rationale of the existing Fair Employment legislation, aimed as it is at ensuring that illegal discrimination in "hiring and firing" on purely religious grounds will never again be a feature of the Northern labour market. If Gudgin and Breen have positive evidence that the existing Fair Employment legislation was ever mistakenly formulated with the sole aim of removing the inherited structural disadvantage of Catholics, then they should have produced it. The informal allusions contained in the Gudgin and Breen report (e.g., the assertion that "chill factors" are irrelevant as non-structural aspects of any wider Catholic difficulty in the labour market: Gudgin and Breen, pp. 39-40), taken together with the authors' more political articles in the popular media (Gudgin, 1996; Gudgin and Breen, 1996a), have served to create confusion in the academic debate together with much unnecessary misunderstanding and bad feeling over an issue of great political sensitivity.

When the publication of a research report generates widespread controversy among the professions as well as in the popular media, it is usually for one of three possible reasons.

- (i) The conclusions of the report, no matter how well they are based on sound research methodology, may simply be politically unacceptable to a section of the community. In this case, dealing with the controversy requires political rather than academic action.¹²

12. Thus, research findings showing that a consequence of minimum wage legislation is almost certainly to raise the rate of unemployment among the presently disadvantaged low paid groups, is politically unacceptable to trades unions. Of course, nothing is ever completely black and white in socio-economic research, but this is as close as one can come to a clear-cut issue.

- (ii) The conclusions of the report, no matter how soundly based in strictly academic terms, may simply be misunderstood by the wider public. Such misunderstanding might arise from the complexity of the research, or perhaps from a muddled or excessively technical form of exposition that confuses rather than clarifies the key policy issues. In this case, dealing with the controversy will require a clearer and more careful restatement, exposition and qualification of the research findings, with perhaps some give and take in debates on interpretation of the findings. If this were done, the policy lessons that need to be drawn from the research might subsequently become more widely acceptable.
- (iii) The research methodology may simply be flawed and the conclusions deemed by a considerable majority in the relevant research profession to be invalid. In this case, after both sides of the profession have stated their cases, one must hope that policy makers will exercise sound judgement in basing policy on those findings that command the most widespread support both from the research community and from informed public opinion.¹³

The controversy that followed the publication of the Gudgin and Breen report, and the very serious nature of the underlying social and political issues, makes it essential to understand which of the above three reasons, or indeed what other reasons if none of the above, apply to the controversy that greeted the report. My own conclusion, based on a careful reading of the Gudgin and Breen report, is that it falls into category (ii) above, i.e., the conclusions of the report are essentially correct in a narrow sense, but are incorrect in a wider socio-economic policy perspective. Furthermore, the manner in which the conclusions have been presented and interpreted by the authors is inadequate, and this has generated considerable misunderstanding.¹⁴ Many reasons could be advanced in support of such a verdict.

13. An example of the third category would be the conclusions drawn about inherent intelligence that is based on IQ tests across different racial groups (e.g., *The Bell Curve*). Of course, the minority of the profession who dispute the majority claim of flawed methodology, might favour their own findings for political reasons that are quite unrelated to scientific research methodology or a spirit of impartial enquiry.

14. Dr Gudgin's own articles and interviews in the popular press have compounded the problem, since his exposition and interpretations seem to go far beyond the more circumspect presentation actually contained in the Gudgin and Breen report. For example, he claims that: "A belief in the existence of systematic discrimination is more widespread in the Catholic community and may act as one factor attracting some people to republican paramilitary groups" (*The Irish News*, May 23rd, 1996). In the same article, great stress is placed on the natural population growth rate as the cause of higher Catholic unemployment, even though this is the weakest explanatory factor in the Gudgin and Breen model simulations (see table above). This is a serious distortion of his own research findings.

First, the Gudgin and Breen report does not clearly define the concept of "fair employment". If the narrow definition that is implicit in the present Fair Employment legislation is intended (i.e., fair "hiring and firing"), then their research needs to address the obvious need for wider policy initiatives to remove the serious structural labour market disadvantages that afflict the Catholic community, and that have been clearly and dramatically identified by the Gudgin and Breen modelling methodology.¹⁵ If a wider definition of fair employment is intended, then this should be described and their policy conclusions will need to be modified in the light of any such definition.

Second, a further serious deficiency in the Gudgin and Breen model-based analysis is the absence of any discussion of the historical dimension of how the Catholic disadvantage originated in the pre-Fair Employment era. There has been considerable historical analysis of the labour market difficulties experienced by the Catholic community prior to 1970. For example, the concentration of industrial growth and development in the greater Belfast area, to the disadvantage of the area west of the Bann, probably gave rise to a major deficit in jobs for Catholics that created the pre-conditions for the structural disadvantage observed in the 1971 figures quoted by Gudgin and Breen (Bradley, Hewitt and Jefferson, 1986). What the Gudgin and Breen model shows is that this structural disadvantage seems to have endured over time and that it cannot be eliminated by fair "hiring and firing" legislation in isolation, particularly in a situation where net employment growth is small.¹⁶

Third, even if one accepts the structure of the Gudgin and Breen dynamic evolutionary model as a valid "positive" description of the behaviour of the Northern Ireland labour market, then the underlying explanation for the difference between Catholic and Protestant unemployment experiences comes down to differences in the magnitudes of four key model parameters. However, it is difficult to accept that these parameters are "structural", in the sense that they stand aloof from the problem of structural disadvantage that the Gudgin and Breen model purports to explain. In fact, the parameter differences are the *problem*, not the *explanation*. A theory of why the two communities have come to be characterised by such radically different parameter values is needed before the model-based analysis of Gudgin and Breen carries any conviction. One possible line of enquiry might be to

15. Gudgin and Breen allude to other policies that might address structural labour market disadvantage in the last paragraph of their report (p. 43). This is hardly an adequate treatment of the core conclusion of their research.

16. Gudgin and Breen nowhere note that the one area of high employment growth in Northern Ireland during the 1970s and 1980s was in the security forces (RUC, RIR, prison service, etc.), areas from which Catholics were effectively excluded for reasons that are well understood. These were areas where the Fair Employment legislation, no matter how well intentioned, could not be effectively applied.

examine the historical legacy of policy attempts since the 1950s to discourage West-to-East migration in Northern Ireland (Eversley, 1989) as well as the relative neglect of the Western region by the official job-promotion agencies (Bradley, Hewitt and Jefferson, 1986).

VI CONCLUSIONS

Mathematical models must always simplify the complexity of the real world. Nevertheless, powerful insights can often be obtained from very simple models. However, the power of persuasion of a model is directly related to the plausibility of its assumptions. A plausible model permits one to carry out counter-factual simulations to explore how certain phenomena might have changed if different policy options or other external assumptions had been taken.

An essential feature of a policy model is that it must make a clear distinction between variables that are treated as being determined within the model (endogenous) and variables or parameters that are determined outside the model (exogenous). If that distinction is not made, or if it is made in an unconvincing way, then the simulations cease to have causal explanatory power and become merely a-causal consistency checks. Our main academic criticism of the Gudgin and Breen model is that this distinction is blurred.

Thus, the explanation of the consistently high Catholic to Protestant unemployment ratio that Gudgin and Breen offer in terms of exogenous variables such as disadvantage, quit rates, differential migration propensities and differential natural population growth rates, is of limited scientific or policy use since these variables are themselves determined within an unspecified encompassing model. A model that explains one form of disadvantage (the high Catholic-Protestant unemployment ratio) in terms of a series of other forms of disadvantage would only be convincing if the explanatory variables were truly exogenous. Of the four sets of explanatory variables used by Gudgin and Breen, the only one likely to be in any way exogenous is the Community-specific population growth rates, and we have seen above that Gudgin and Breen show that these have very little explanatory power in isolation.

A more specific problem with the Gudgin and Breen model is that it fails to distinguish between long- and short-term unemployment. This is a crucial distinction in any labour market model, since there is evidence that employers use unemployment duration as a screening device for the likely suitability and productivity of job applicants (Layard, Nickell and Jackman, 1991; Sheehan and Tomlinson, 1996). Since the long-term unemployment differential between Catholics and Protestants is over 3:1, this is clearly a

more serious problem than the average ratio modelled by Gudgin and Breen. Furthermore, the social and intergenerational processes that tend to perpetuate long-term unemployment must surely be relevant to fair participation, and hence should fall into the remit of the FEC.

The Fair Employment legislation as it is currently constructed cannot easily address problems of inherited structural disadvantage precisely because it is targeted primarily at hiring and firing procedures. This key conclusion is derivable from the Gudgin and Breen study, even if a different message has been emphasised by the authors in the popular media. The greatest public policy challenge now facing Northern policy makers is to augment the present legislation with policies targeted at removing the causes of long-term unemployment and its transmission through generations, without moving too far in the direction of affirmative action, since this has already become a serious source of conflict between Northern Ireland's divided communities.

REFERENCES

- COMPTON, P., 1991. "Employment Differentials in Northern Ireland and Job Discrimination: a Critique", in P. Roche and B. Barton (eds.), *The Northern Ireland Question: Myth and Reality*, Aldershot: Avebury.
- BRADLEY, James, V. HEWITT, and C. JEFFERSON, 1986. *Industrial Location Policy and Equality of Opportunity in Assisted Employment in Northern Ireland 1949-1981*, Research paper No. 10, Belfast: Fair Employment Agency.
- CASSIDY, F., 1996. "The Concept of Fair Participation", in *Fair Employment Law in Northern Ireland: debates and issues*, *Employment Equality in Northern Ireland*, Vol. 1, Belfast: Standing Advisory Commission on Human Rights.
- COOPER, B., 1996. "Sensitivity is Needed as Well as Statistical 'Understanding'", *Irish News*, May 30.
- EVERSLEY, D., 1989. *Religion and Employment in Northern Ireland*, London: Sage.
- GUDGIN, G., 1996. "Exposing the Myths of Job Bias at Work", *Belfast Telegraph*, May 2.
- GUDGIN, G., and R. BREEN, 1996. *Evaluation of the Ratio of Unemployment Rates as an Indicator of Fair Employment*, Research Report No. 4, Belfast: Central Community Relations Unit.
- GUDGIN, G., and R. BREEN, 1996a. "Controversial Jobs Research is not Biased Say Academics", *Irish News*, May 23.
- HARRIS, J., and M. TODARO, 1970. "Migration, Unemployment and Development: A Two-Sector Analysis", *American Economic Review*, Vol. 60, pp. 126-142, March.
- LAYARD, R., S. NICKELL, and R. JACKMAN, 1991. *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford: Oxford University Press.
- MCCRUDDEN, C., 1992. "Affirmative Action and Fair Employment: Interpreting the Fair Employment Act 1989", *Industrial Law Journal*, Vol. 24, No. 3, pp. 170-198.
- MCCRUDDEN, C., 1996. "The Merit Principle and Fair Employment in Northern Ireland", in *Fair Employment Law in Northern Ireland: debates and issues*,

- Employment Equality in Northern Ireland*, Vol. 1, Belfast: Standing Advisory Commission on Human Rights.
- MURPHY, A., with D. ARMSTRONG, 1994. *A Picture of the Catholic and Protestant Male Unemployed*, Research Report No. 2, Employment Equality Review, Belfast: Central Community Relations Unit.
- NATIONAL ECONOMIC AND SOCIAL COUNCIL, 1991. *The Economic and Social Implications of Emigration*, Report No. 90, Dublin: The Economic and Social Council.
- SHEEHAN, M., and M. TOMLINSON, 1996. "Long-term Unemployment in West Belfast", in E. McLaughlin and P. Quirk (eds.), *Policy Aspects of Employment Equality in Northern Ireland*, Vol. II, Belfast: The Standing Advisory Commission on Human Rights.
- SMITH, D., and G. CHAMBERS, 1991. *Inequality in Northern Ireland*, Oxford: Clarendon Press.