

# Part-Timers in Europe

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## Introduction

The purpose of this paper is to examine the causes of the large discrepancies which exist between countries in the extent of part-time employment.

Part-time employment has expanded in most OECD countries in the past decade, along with other forms of 'atypical' employment, such as temporary employment, fixed-term contract employment, homeworking and on-call contracts. However, an examination of the statistics describing this growth reveals that the initial levels from which the growth occurred varied enormously. An analysis of the reasons for this might prove useful to a government which wished to raise the level of part-time work in its jurisdiction. It would be informative to gauge the extent to which the level of part-time employment is influenced, if at all, by government action, and how much is due to cultural and historical factors, which are more difficult to change.

It is not immediately clear why a government might wish to encourage part-time employment, but the literature is emphatically in favour of part-time employment, from the point of view of all those involved. Both supply and demand factors influence the level of part-time employment in any

country. On the supply side, microeconomic theory states that the availability of working hours other than the standard forty hour week allows for the maximisation of individual utility of a larger proportion of the population. This is particularly important to women to whom home responsibilities, as is traditional, fall, but who maintain a commitment to the labour market after childbirth. A survey carried out for the EC Commission by Nerb (1986) indicated that present working hours and ideal working hours do not coincide for almost half the workers in Europe, and for most of those unhappy, they would prefer shorter rather than longer hours. This is particularly true for women. In contrast to full-time employees, part-time employees were found to be predominantly happy with their working hours.

On the demand side, the reasons why employers might prefer to employ part-timers rather than full-time employees are twofold. Firstly, part-time employees are generally less costly because they are not usually entitled to such fringe benefits as overtime premiums, sick pay, and, more importantly, because in some countries, employers do not have to pay social insurance contributions for employees working below a weekly hours

threshold. Secondly, management literature has increasingly stressed the numerical flexibility afforded by part-time employees (Atkinson and Meager, 1986), primarily by virtue of the lack of employment protection afforded to those working below a certain weekly hours threshold. The advantages of employing part-timers are not provided across the board, however. Pollert (1988) has pointed out that part-time employment has always been most suited to the service sector, in covering peak hours for example.

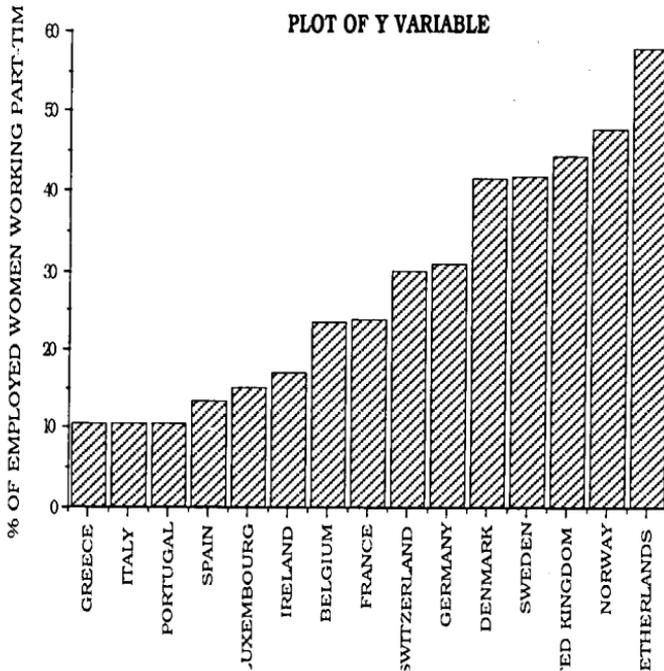
Although these determinants of supply and demand are very complex, it may be possible to capture at least some of their sense using simple

variables.

### The Model

The variables which were chosen for use are as follows:

Y variable: The proportion of employed women working part-time. This is somewhat different from the absolute levels of total part-time employment of the labour force suggested above, for a number of reasons. Firstly, the analysis was reduced to the case of women, as it is generally accepted that the reasons for the decisions to work part-time are distinct for women and men. Men



generally work part-time while in full-time education, whereas women who work on this basis are generally married, and are thus combining work with family responsibilities. Secondly, if the proportion of female part-time employees in the labour force had been used, it would have been accounting to some extent for female labour force participation *per se* rather than part-time participation. By measuring Y in this way, it was intended that the extent to which the causality might exist between the X variables and the participation rate, rather than between those variables and the prevalence of part-time employment, should be minimized.

A representation of the Y variable is shown.

X<sub>1</sub> variable: The proportion of all employees in the service sector. This is a fairly broad demand side variable representing the extent to which employers are able to take advantage of the benefits of employing part-timers, since, as suggested above, part-timers are more readily employed in the service sector. A positive relationship is expected between X<sub>1</sub> and Y.

X<sub>2</sub> variable: The proportion of the male labour force unemployed. This variable was chosen on the grounds that women who work after marriage are often seen as supplementing their husbands' income. However, if a woman's husband is unemployed, she will be less likely to work part-time and more likely to work full-time, so as to earn a wage on which the household can survive. (The possibility of the option to stop working so as to avoid

jeopardising social welfare payments is negated by the fact that the Y variable is the proportion of total female employment which is part-time, rather than being expressed as the proportion of the female labour force). Thus, a negative relationship between Y and X<sub>2</sub> is expected.

X<sub>3</sub> variable: The proportion of the population aged 0 - 4. This variable was chosen to account for family responsibilities, the idea being that a woman is more likely to work part-time rather than full-time if her child-rearing responsibilities are significant. Thus, a positive relationship between Y and X<sub>3</sub> is anticipated.

The model is linear of the form:

$$Y_i = \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + e_i$$

where  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are parameters, and  $e_i$  is the error term.

### The Data

Cross-sectional data for the 12 EC countries, and Norway, Sweden and Switzerland, were used in the regression. The EC data were freely available in the Eurostat Labour Force Survey published each year, and data for Norway, Sweden and Switzerland were obtained from their annually published statistical abstracts, which were made available by embassy staff in each case. Most of the data applied to 1989, with a few notable exceptions.

Swedish data were perfectly compatible with the EC's; data for 1989 were available in every case, and the definitions of part-time employment and unemployment used are those recommended by the International Labour Office, which Eurostat also

employs.

Norwegian data were also reasonably compatible with the EC's. However, the Y variable was computed using 1990 statistics, as a breakdown by sex for years prior to this was not available in this year's abstract. Moreover, the Norwegians use a slightly different method for calculating part-time employment. ILO recommendations are that self-description be used, and this is the

method used by Eurostat, but Norwegian statistics use self-description only beyond a 35 hours per week cut-off point. The discrepancy arising from this difference should, however, be negligible.

Swiss data are the least satisfactory. All figures given are for 1985, except for  $X_3$ , the proportion of the population aged 0 - 4. Moreover, the Swiss use an hours cut-off point rather than self-description in counting

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Country	% of Employed Women Working Parttime	% of Employees In Service Sector	% of Male Lab.Force Unemployed	% of Popn. Aged 0-4
	Y	$X_1$	$X_2$	$X_3$
Belgium	23.4	65.3	5.8	5.9
Denmark	41.5	66.5	7.5	5.4
Germany	30.6	56	4.5	5.1
Greece	10.3	48.9	4.6	5.6
Spain	13.1	54.2	13.1	5.6
France	23.8	62.4	7.3	6.7
Ireland	17	55.6	15.9	8.4
Italy	10.4	58.8	7.4	5
Luxembourg	15	67.8	1.1	5.9
Netherlands	57.7	68.8	6.8	6.2
Portugal	10.5	45.9	8.6	6.2
UK	4.2	64.7	7.6	6.6
Norway	47.7	69.2	5.6	6.5
Sweden	41.7	66.5	1.8	6.8
Switzerland	29.9	58.9	0.8	5.7

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Table 1

part-timers, so this figure can be expected to represent some undercounting.

However, the four variables do not vary much from year to year since they are expressed in proportionate terms. The only one which might be problematic is  $X_2$ , the proportion of the male labour force unemployed which can, in some economies, vary significantly from year to year. The 1985 figure for Switzerland was 0.8%, and this showed little variation with the other years for which data were available, and so the Swiss variables can be taken to be sufficiently compatible with the other data used.

The regression results obtained using the variables outlined above were somewhat disappointing.

An  $R^2$  value of 0.527 indicates that 52.7% of the variation in the dependent variable, Y, can be explained

by the variation in the three independent X variables. This value, although not particularly high at face value, is satisfactory given the complex nature of the determinants of labour supply and demand.

Moreover, all parameter estimates were of the signs anticipated a priori, although only that for  $\beta_1$  was statistically significant at the 5% level. However, despite the hopelessly insignificant parameter estimates for  $X_2$  and  $X_3$ , the F-ratio, which is used to test the joint significance of all the independent variables, suggests that the null hypothesis of an overall poor model be rejected at the 5% significance level.

### Model Evaluation

The poor results outlined above are certainly caused by inadequate

## Regression Results

Dependent variable is: **PART-TIME WOMEN**  
 $R^2 = 52.7\%$      $R^2(\text{adjusted}) = 39.8\%$   
 $s = 12.08$  with  $15 - 4 = 11$  degrees of freedom

Variable	Coefficient	s.e. of Coeff	t-ratio
CONSTANT	-71.9456	34.910	-2.06
EMPL IN SVCS	1.5150	0.458	3.31
MALE UNEMP	- 0.1920	0.906	-0.21
POP AGE 0-4	1.5012	4.488	0.33

model specification; data problems could not be responsible for such insignificant parameter estimates in respect of two of the three independent variables.

The two supply variables chosen were, in retrospect, too simplistic to account for the factors which determine labour supply, particularly by women. Only microeconomic, sample survey data could hope to capture the attitudinal variables involved in the determination of labour supply, and while such data are available for individual countries, such as that provided by the Women and Employment Survey (WES) in Britain, there exists no standardised cross-country survey which would allow a cross-sectional analysis of the determinants of supply. Data that are available that could have been used to raise the explanatory power of the model include the availability of state creches, or alternatively, the tax deductibility of payments for childminding.

Although the demand variable was more satisfactory, one crucial variable was neglected which would certainly have significantly improved the explanatory power of the model, that of the effect of social insurance arrangements on the demand for part-time employees. The difficulty in modelling this factor arises from the differences in the calculation bases for the employer's contribution between countries, which results in there being no single variable which would summarise the degree of advantage to employers of employing part-timers, in terms of social insurance arrangements.

Thus, although the model specified above leaves much of the variation between countries in the level of part-time employment unexplained, it is hoped that it will provide the base from which more useful work on the subject can be done.

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### References

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