

WILEY

Child Support, Income Support and Lone Mothers

Author(s): PAUL BINGLEY, ELIZABETH SYMONS and IAN WALKER

Source: *Fiscal Studies*, FEBRUARY 1994, Vol. 15, No. 1 (FEBRUARY 1994), pp. 81-98

Published by: Wiley

Stable URL: <https://www.jstor.org/stable/24437350>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

Wiley is collaborating with JSTOR to digitize, preserve and extend access to *Fiscal Studies*

Child Support, Income Support and Lone Mothers

PAUL BINGLEY*, ELIZABETH SYMONS[†] AND IAN WALKER^{††}

I. INTRODUCTION

The number of lone parents has risen very rapidly in the UK in recent years. In 1991 there were estimated to be 1.30 million lone parents representing 17 per cent of all families with children,¹ compared to 0.75 million just 15 years earlier.

There are two distinctive features of the labour force behaviour of lone mothers in the UK. Firstly, the labour force attachment of these women has *declined* considerably over the period which we analyse here, 1979–92, in contrast to the behaviour of married mothers (especially those with young children) over the same period who have exhibited a strong increase in participation. Secondly, the proportion of lone mothers who work part-time is substantially lower than is the case for married mothers.²

The corollary of the falling labour force participation rate is that lone parents are of policy interest that is out of proportion to their numbers because of their

* Centre for Labour Economics, Aarhus University, Denmark; [†] and ^{††} IFS and Keele University
We are grateful to the UK Central Statistical Office for allowing us access to the Family Expenditure Survey data; to Steven Webb of the IFS for assistance in extracting the data on lone parents and for helping us to understand the intricacies of the UK tax–benefit system; to the EU for financial assistance under SPES grant E90100010; and to the ESRC for financial assistance under grant R000232160.

¹ See Haskey (1993) for estimates of the number of lone parents from a number of sample surveys including the Family Expenditure Surveys used here.

² A comprehensive description of the labour market behaviour of UK lone mothers drawn from the large Labour Force Surveys of 1981, 1984, 1987 and 1990 can be found in Bartholomew et al. (1992). The evidence there support the trends that we observe in the much smaller FES data.

growing relative importance as welfare clients.³ However, despite the importance of this group, and the vast literature on labour supply modelling in general, there is relatively little serious evidence on what determines their labour market behaviour.⁴ A knowledge of the sensitivity of the labour market behaviour supply for this group is of considerable importance for policy issues. In particular, in the face of dramatically declining levels of child support (CS), recent legislation (*Children Come First*, DSS, 1990)) has been introduced to ensure that the level of child support be related to the needs of the caring parent and the absent parent's ability to pay. Moreover, the payment of this level can be enforced through the new Child Support Agency (CSA). A number of other changes have also been introduced to the way in which the UK welfare system treats child support.

A central question that needs to be addressed to analyse the effects of such a reform is the extent to which labour force behaviour depends on the nature of economic constraints faced by lone mothers. In particular we are interested in the operation of the welfare system and its impact on the incentive to work, and we use this model to consider the implications of some of the main features of the recent changes in child support.

The CS formula is based on the incomes and needs of both the absent and caring parents. It is clear that almost all absent fathers will be worse off, but it is difficult to quantify this precisely since we do not have good data on absent parents. It is clear, however, from our data that the attention given to so-called "clean break" divorces (where a once-and-for-all settlement occurs at the time of the divorce usually in the form of a transfer of the ownership of the family home, or at least the husband's share of the housing equity, to the mother) has been misplaced. They appear not to be very important empirically since only a tiny minority of lone mothers live mortgage free in owner-occupied housing. Since the majority of lone mothers are in receipt of Income Support (IS) and receive little or no CS, the formula driven CS award amounts are unlikely to make them much better off unless they change their labour market status. The major beneficiary of the CS formula will be the DSS who will find that their IS payments fall as CS payments rise.

³ See Brown (1989) for an overview of the welfare system relating to UK lone mothers and an interesting comparison across a number of countries.

⁴ See Jenkins (1992), Ermisch and Wright (1990), and Walker (1990) for estimates of models of participation in the UK. Ermisch and Wright (1992) estimate equations for participation and for full-time participation for all women. Blundell et al. (1992) estimate an hours equation for a subsample of UK lone parent taxpayers. Bingley et al. (1993) estimate a random utility discrete choice model of labour supply for UK lone mothers which is a more complex model than the one used here. See Hausman (1980) and Moffitt (1986a) for US models of participation and hours of work. Fraker and Moffitt (1988), in particular, estimate a model of part-time and full-time labour force participation, Food Stamp and AFDC participation. There has been no equivalent UK work that addresses both labour supply and the take-up of means-tested benefits (see Blundell et al., 1988 for a study of the take-up of UK housing benefit).

The lone mothers who stand to gain most are those who are already working and not receiving IS. Many of these women will be receiving some CS already. Thus, the priority that the CSA appears to have given to absent fathers who already provide some CS is justified on two counts. First, with limited resources, the CSA should focus its attention initially on extracting additional CS at least cost to itself. Secondly, enhancing the CS of those already in receipt maximises the impact on the net incomes since those already in receipt of CS are most likely to be those working and not in receipt of IS. In the light of this, rather obvious, argument it is rather surprising that the Social Security Committee has recommended that the CS formula payments be phased in over an 18-month period. While it is true that this will allow absent fathers currently paying low CS time to adjust to new higher liabilities, the cost of this is that lone mothers will be receiving less for this transitional period. While we know very little about the financial circumstances of absent fathers, because systematic data do not exist, it seems extraordinarily unlikely that this transfer from lone mothers, who constitute a very poor section of society, to absent fathers with second families would be desirable on any distributional criterion.

The treatment of CS by the IS system is clearly designed to encourage lone mothers currently in receipt of IS to work. Thus, this article focuses on estimating the impact of the new CS system on work incentives.

Our modelling is based on the 1979–92 Family Expenditure Surveys. We extract approximately 500 lone mothers from each sample and pool them into a large enough data set to support sophisticated econometric analysis.

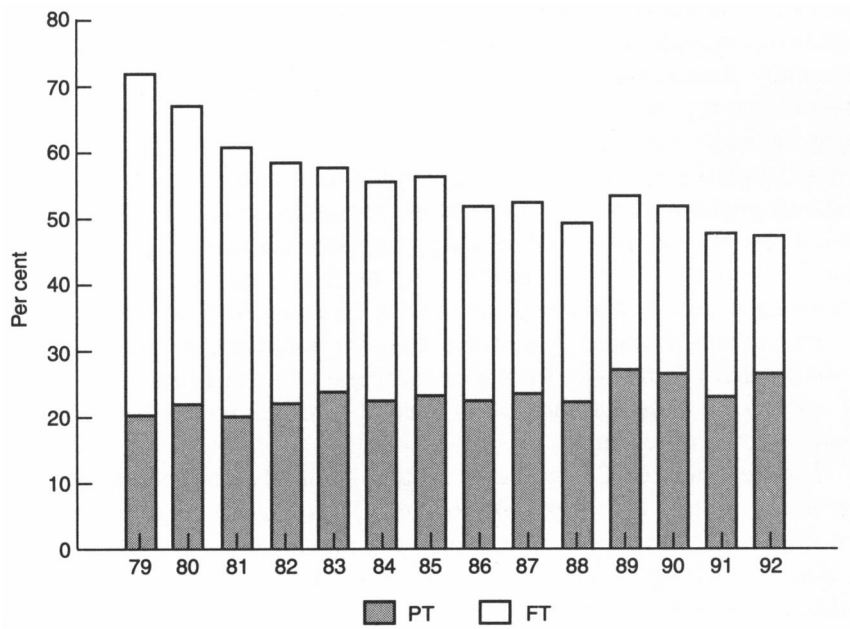
The main finding is that the labour market status of lone mothers does appear to respond to changes in the structure of incentives and we find that, according to our estimates, about one third of the decline in participation of lone mothers can be accounted for by changes in the economic constraints that they face. The implication is that the recent child support reform, by improving work incentives, will encourage labour market participation and reduce welfare dependency. A further finding is that child support receipt (as opposed to the level of child support) is correlated with working and our results are consistent with the idea that CS has been regarded as a less reliable form of income than either earned income or state benefits.

We predict that approximately 40,000 non-working lone mothers will join the labour force because of the CS reform.

II. WORK AND THE WELFARE AND CHILD SUPPORT FOR LONE MOTHERS

Figure 1 shows the proportions of lone mothers in non-participation (zero normal weekly hours and earnings), part-time (normal hours between 1 and 31 inclusive),

FIGURE 1
Labour Market Status over Time



Source: FES tapes

and full-time (normal hours at least 32). Since each cross-section of data contains around 500 observations, there is quite considerable sampling variation. Nevertheless the figure shows very clearly the strong downward trend in labour force participation throughout the period as a whole, and the tendency for this to occur through a drop in full-time participation rather than part-time participation.

A number of other significant changes have taken place over time in our data: the proportion receiving CS has fallen from 43 per cent to 31 per cent; the number of pre-school age children per household has risen dramatically from 0.24 to 0.40; the proportion of widows has fallen from 12.7 per cent to 8.1 per cent; the average age has fallen from 35 to 33; the real level of net income for non-participants in the data has risen by 31 per cent; the average real wage in the data has risen by only 27.1 per cent; and the aggregate unemployment rate has more than trebled. These changes may well be expected to have changed labour force status over time. For example, since lone mothers with young children are much less likely to partici-

pate⁵ so a higher proportion of lone mothers with young children would contribute to a falling aggregate participation rate.

One might be tempted to think that IS could not have contributed to the decline in participation because the basic component of the “scale rates” has been largely unchanged in real terms over this period – although there has been a rise in the additions for children. In fact, IS recipients may also receive considerable help with their housing costs. Real housing costs rose dramatically over this period, so the level of net income to which non-participants might expect to be entitled has risen quite considerably over this period relative to real net incomes for those in work. In particular, there is a real increase of 47 per cent over the period, almost half of which occurred between 1981 and 1984. Thus the incentive to work may well have been considerably reduced by rising real housing costs over this period.

The disincentive effect of IS is countered in the welfare system by Family Credit (FC). The extent to which this works is undermined by the low take-up rate for FC and the difficulties that individuals have moving from IS to FC when they take work. Progress has been made on both fronts in recent years and, other things being equal, one would expect this to encourage labour force participation.

The effect of CS is complicated. The group receiving CS are much more likely to work relative to the group who do not because Income Support (IS) means tests CS so that individuals who receive IS do not benefit at all from CS – CS serves only to reduce the amount of IS paid and does not increase net income at all. In contrast, for those that do work, CS is likely to result in part-time work rather than full-time being undertaken because greater “unearned” income reduces the “need” for earned income. Thus, there is a conventional negative “income effect” associated with CS when it comes to hours of work for participants, but CS has a *positive* effect on participation because of the absence of a disregard for it in the IS scheme.

III. THE EMPIRICAL FRAMEWORK

In the empirical analysis of labour supply behaviour, it is common to assume that individuals are able to make “supply” choices about their participation and hours of work and that they do this according to their preferences. This is clearly a simplification – in particular, the demand side of the labour market also seems likely to impinge on observed individual behaviour.

It is well known that estimation labour supply equations using conventional econometric methods in circumstances where the budget constraint is non-linear

⁵ Although, for married mothers, the proportion of mothers with pre-school children who work rose by a factor of 3. There was also a major growth in all forms of child care facilities over the period, although husbands remain the principal carer in households with working married mothers.

results in biased estimates. The essence of this problem is the endogeneity of the net wage arising from the relationship between the net wage and hours of work defined by the budget constraint. Maximum likelihood (ML) techniques have been suggested to deal with this problem (see Moffitt, 1986b, for a survey). However, modelling labour supply in the face of *non-convexities* in budget constraints has proved difficult and there are relatively few examples in the literature. The difficulties arise because non-convex budget constraints require that any estimation method used needs to compare all possible points on the budget constraint to uncover which the individual would prefer most. The difficulty that this imposes in situations like the one considered here for lone parents is that a large number of such comparisons would be required to deal with the many potential non-convexities.⁶ More importantly, MaCurdy (1992) demonstrates convincingly that ML methods force the estimates to be consistent with utility-maximising theory and in simple labour supply equations this imposes strong restrictions that may not be a feature of the underlying data.⁷ MaCurdy et al. (1990) avoid these difficulties by approximating the post-tax budget constraint by a polynomial function of hours. However MaCurdy et al. have the advantage of working with the relatively *smooth* US tax system and this is unlikely to provide a good approximation for the constraints that UK lone mothers face.

An alternative strategy to approximating the constraint by a polynomial would be to approximate it by a number of discrete alternatives. Here we approximate the constraint by three points: non-participation (NP); part-time (PT) which is assumed to be 25 hours; and full-time (FT) which is assumed to be 39 hours.⁸ While this imposes measurement error because it is an approximation, it has the important advantage that it facilitates the estimation of separate wage equations corresponding to each alternative and therefore does not impose any structure of the wage–hours relationship. Moreover, apart from assuming that the gross wage is independent of hours worked, the alternative methodology assumes that hours are freely variable which invariably fails to capture the peaks that usually characterise hours of work distributions.

Our methodology allows for both demand and supply factors to influence observed behaviour. The supply-side dimension is captured by the idea that the probability of choosing a particular labour market status (NP, PT, FT) depends on the net income that the individual could be expected to receive in each state relative to the net income in alternative states. The presence of children, especially young

⁶ However, see Blundell et al. (1992) for an approach which estimates a labour supply model over a subsample of lone mothers which is selected to face the standard tax rate only.

⁷ An alternative method is to instrument the (net marginal) wage. However, because there are no obvious exclusion restrictions IV methods usually have to make arbitrary assumptions and Mroz (1987) has shown that labour supply estimates are quite sensitive to alternative assumptions.

⁸ Individuals are categorized as PT if they work less than 32 hours and FT if they work 32 hours or more.

ones, is also allowed to have an effect on the probability of choosing each position as are a number of other variables which capture either some systematic variation in tastes or constraints. For example, we might expect lone mothers whose youngest child is pre-school to have a lower probability of participation. The effect of CS is captured via its effect on net income in each state and also by including a dummy variable in the model that captures the idea that *either* CS recipients may be a different type of individual for reasons which are not recorded in our data *or* income from CS may affect behaviour in a different way to other forms of income. For example, CS may be viewed as a less reliable form of income compared with earned income or state benefits. Thus, one effect of the CS reform may be to make CS a more reliable form of income which may encourage lone mothers to work.⁹

Thus, while Walker (1990) estimates the impact of various variables on participation, this article also estimates the impact of various variables on FT as opposed to PT work conditional on individual working. Walker (1990) explains that it is the *probability* of participation that is being modelled and that a *Probit* model is the appropriate econometric framework. Here we model both participation vs non-participation *and* full-time as opposed to part-time work (conditional on working at all) and use a *bivariate* Probit model which contains two Probit equations and which we estimate jointly since it might be expected that unobservable (to the researcher) factors that affect participation (for example, the availability of cheap informal child care) might be correlated with the choice between full-time and part-time work. Further details of this framework can be found in Bingley, Symons and Walker (1992).

In order to address the determinants of labour force participation and welfare dependency the UK Family Expenditure Survey data sets were pooled over 1979 to 1992. The FES data have been compared extensively with other sources of information and have been found to be reasonably reliable, with some exceptions that are unlikely to be important in the present context and the data have remained consistent over this period in the definitions used and the variables that are available. This enables us to pool the data over time which has the advantage that the data then have time series variation in the taxes and benefits. The demand side of market is captured by the inclusion of unemployment (by month and region). Pooling FES data sets over time provides a sample size of 6303 lone mothers which allows an econometric model of labour supply decisions to be estimated.

To operationalise the estimation procedure from Section III we need to observe the levels of net income in each state for all individuals. Thus, we predict a wage relevant to each labour force state from data on individuals in each state.¹⁰ The results for our wage equations are quite conventional and we find that there is

⁹ See Jenkins (1990) for a theoretical justification of this idea.

¹⁰ Further methodological details are given in Bingley et al. (1993).

strong evidence that the determination of wages for full-time workers is different from part-time workers, as well as a large wage differential between full-time and part-time jobs.

In order to address the question of the effects of economic opportunities on labour market behaviour we need to compute exactly what these opportunities might be. We use our predicted gross wages to generate PT and FT net incomes via a complex tax/benefit program (based on the IFS programme TAXBEN2) which also computed net income for the NP state. The economic variables were calculated by applying the relevant tax and social security rules allowing for the changes that have occurred over time including the reforms in April 1988.¹¹

The empirical specification and econometric results are set out in the Technical Appendix. Here we simply provide some interpretation of those results. The results are entirely consistent with the predictions of the underlying theory. The probability of labour force participation is a decreasing function of NP net income, and an increasing function of the income gain from working either PT or FT. Moreover, conditional on participation, the probability of FT status *vs* PT is a decreasing function of PT income and increasing in the net income gain from moving from PT to FT. That is, individual behaviour seems to respond to the incentives that they are offered.

The interpretation of the other variables is more difficult. The unemployment rate is included to capture potential labour market constraints although it is insignificant in both the participation and the full-time equations. A householder dummy variable is included to capture the absence of other adults in the household who potentially could have provided informal child care for the mother and this has the expected negative effect on both non-participation and full-time as opposed to part-time work. The *level* of CS is already included in the economic variables, so one interpretation of the CS dummy is that it captures the potential uncertainty that may be currently attached to CS income. CS receivers are significantly *more* likely to work which seems consistent with the uncertainty argument although they are significantly less likely to work full-time. The widow dummy has no significant effect.

The ages of the dependent children are very important and we attempt to capture this effect using *conditional* dummy variables which equal one if the youngest child is in each of a number of particular age ranges (relative to the omitted category where the youngest child in the household is in the 11+ category). If the youngest child is aged 0–2 then participation is very dramatically reduced although, conditional on participation, full-time work is not significantly affected. If the youngest child is aged 3–4 then participation is considerably reduced, but the effect of the full-time probability conditional on participation is again insignifi-

¹¹ See Dilnot and Walker (1990) for details of the 1988 reforms.

TABLE 1
Prediction Probabilities from the Model Estimates

	<i>Zero hours</i>	<i>Part-time</i>	<i>Full-time</i>
Representative individual	30.21	37.01	32.79
Age 41–45	22.91	39.76	37.33
Age 36–40	18.50	42.30	39.20
Age 30–35	24.91	36.05	39.04
Age 26–30	22.91	32.10	44.99
Age 16–25	27.28	32.05	40.66
Non-householder	22.07	25.19	52.74
Child Support > 0	27.12	39.33	33.55
Youngest child 5–10	40.29	46.11	13.60
Youngest child 3–4	60.88	30.12	9.00
Youngest child 0–2	75.72	18.11	6.17
Unemployment 5%	32.19	36.60	31.21
1992	40.10	38.81	21.09

cant. If the youngest child is aged 5–10 (i.e. at primary school) then participation and full-time work conditional on participation are significantly reduced but by a smaller amount.¹²

In Tables 1 and 2, we outline the predictions of the model. In Table 1 we show the predicted labour force status probabilities for a *representative* individual (with average wages and housing costs, unemployment 10 per cent, 1979, South East, Age 45+, non-widower, not receiving CS, householder, youngest child 11+) and how those probabilities change with changes in those characteristics. The table illustrates the effect of age, the importance of householder status and the age of the youngest child, and the relative unimportance of unemployment. Thus, being a non-householder seems to be correlated with a much higher participation rate, other things being equal. Having a very young child makes participation much less

¹² Age, time and regional dummies are included for a number of reasons: the differences in the composition of the type of lone mother over time and cohorts and across regions, differences in the fixed costs of work, etc. There has been a noticeable increase in the provision of child care facilities over this period, a marked deterioration in unemployment over the first half of this period, and quite marked changes in the composition of lone parents, all of which may be expected to play a role but may be only imperfectly captured by the included variables. Similarly job market and child care opportunities may differ systematically across regions, but the local level of unemployment may not adequately capture the former. Finally, age dummies are included for both cohort and life-cycle reasons and to capture the time series changes that have occurred in the composition of lone mothers: for example, there has been a quite marked reduction in the proportion of widowed and a marked increase in the proportion of never married lone mothers over the period considered here.

likely than for the representative household with an older child. Note that a fall in unemployment from 10 per cent to 5 per cent increases the probability of working by 2 per cent points, but reduces the full-time probability more than the part-time probability. The year dummy, which picks up the effects of all unmeasured changes over time, is clearly very important, although this does not deny that microeconomic tax/benefit policy is also important.

In Table 2 we show the contribution of each of the variables to the changes in labour force status between 1979 and 1992. These are computed by taking the average values of all the variables in 1979 and changing each variable (or set of variables) to their average 1992 values in turn. Table 2 confirms the importance of the year effects which pick up everything that has changed over time but which we cannot account for directly, and these effects account for about one-third of the observed fall in participation. The table also shows that the increasing proportion of lone mothers whose youngest child is pre-school has had an important impact on non-participation *vs* part-time work. Note that around one-third of the predicted increase in non-participation between 1979 and 1992 can be accounted for by the changes in the economic variables that has occurred over the period. A third important factor has been the decline in CS receipt. Another feature is that the increase in lone parenthood seems to have been skewed towards those regions where the participation rate is low, for regional specific reasons, and this effect has induced an overall fall in participation of about 2 percentage points.

TABLE 2
Accounting for Falling Participation

	<i>Zero hours</i>	<i>Part-time</i>	<i>Full-time</i>
Status in 1979	33.82	32.20	33.98
1992 year dummy	43.33	31.22	25.45
Regional dummies	35.91	31.92	32.17
Age dummies	34.22	30.05	35.73
Child dummies	40.01	30.29	29.70
CS dummy	37.03	29.12	33.85
Widow dummy	33.93	30.55	35.52
Householder dummy	34.22	32.82	32.97
Unemployment	35.02	28.11	36.87
Net incomes in 1992	43.82	33.02	23.16
1992 status	62.93	25.56	11.51

IV. CHILD SUPPORT REFORM

The proportion of lone mothers who receive IS *and* who receive CS has been falling dramatically while the proportion who receive CS but who are not on IS has been approximately constant in our data. The IS system treats CS as *unearned* income and imposes a 100 per cent tax on it (up to the point where all IS entitlement is exhausted) so that, while the present system provides an incentive to work, since the benefit from CS is greatest for those who are not on IS, there is no real incentive for absent parents to pay CS when the caring parent is unlikely to work. The introduction of a CS disregard for IS, as there is for earnings, would improve the incentive to provide (and seek) CS but, on the other hand, would reduce the work incentives associated with the system.

Recent legislation introduced, from April 1993, levels of CS that are related to the needs and resources of both parents, and the creation of a CSA to enforce the payment of this support via wage withholding if necessary. Moreover, the legislation proposes to *increase* the work incentive effect associated with CS by introducing disregards into Family Credit (FC) and Housing Benefit (HB) *but not in* IS. An additional work incentive is provided by the reduction in the minimum hours required to generate an entitlement to FC from 24 to 16 per week.¹³

The CS formula introduces a *maintenance bill* to be “paid” by both the parents out of their disposable incomes (essentially after tax and housing costs) to the caring parent. That is, assessable incomes would be taxed at 50 per cent up to the point where the maintenance bill is met. Thereafter, assessable income would be taxed at 15 per cent so that children could benefit from having a high income absent parent.¹⁴

The effect of such a policy should be to increase the net incomes of those not on IS but who currently receive little or no CS, and to increase the incentive for those on IS to work. For both reasons one would expect a considerable reduction in the welfare costs associated with lone parents and a reduction in welfare dependency.¹⁵ Thus, while the new arrangements might offer substantial increases in CS for those on IS, the effect on the net incomes for such individuals may well be small. The ability of the new system to generate work incentives is complicated. On the one hand, the disregards in FC and HB and the absence of a disregard in IS promote the incentive to work. On the other hand, the 15 per cent tax rate may well

¹³ Some of the social policy aspects of the legislation not considered here are discussed in Bradshaw and Millar (1991).

¹⁴ Minor changes to the formula and arrangements for phasing in large changes in CS payments have just been introduced and these are not included here.

¹⁵ However, there is no guarantee that the new formula-driven levels of CS would exceed the actual present levels, especially since the former depend on the earnings of the mother while under the present arrangements the existing CS levels are essentially independent of earnings.

TABLE 3
Pre- and Post-Reform CS Levels

Pre-reform CS (£/week)	0	Post-reform CS				Total
		0.01 – 20.00	20.01 – 40.00	40.01 – 60.00	60.01 +	
0	54	52	62	71	132	371
0.01–20.00	1	10	12	4	25	52
20.01–40.00		3	8	14	18	43
40.01–60.00				2	9	11
60.01+		2	3	6	19	30
Total	55	67	85	97	203	507

encourage part-time work relative to full-time work. Moreover, CS ought to become a reliable source of income under the new enforcement regime and this may also encourage individuals with low prospective wages to work and take advantage of this now more reliable source of income.¹⁶

One difficulty with using the FES data for this purpose is that, over time, the proportion of mothers in receipt of CS has fallen considerably. This makes it difficult to “age” the data and construct a sample that is representative of the present population from the history of pooled cross-sections. Thus our simulation results here are based solely on the 1992 data (507 observations) where real wages have been predicted from the wage equation, setting the 1992 dummy to unity, and the unemployment rates to their 1993 levels, and then reflating to 1993 prices.

Table 3 shows a cross tabulation of pre- and post-reform CS receipts. Notice that, while the majority of CS recipients are likely to be entitled to much greater support under the reform there are a small number of mothers who receive large

¹⁶ In order to assess the labour market impact we need to be able to compute the level of CS under the reform as well as know the existing level. This poses a considerable problem since the proposed CS formula is driven partly by the earnings of the both the caring parent and the absent parent. In the absence of specific information about the earnings of absent parents in FES data we have estimated an earnings equation for a sample of *married men* with children and a spouse present in the household where the explanatory variables are the characteristics of the wife. This equation is used to predict the incomes of absent parents – the presumption being that separation is exogenous so that the equation produces unbiased predictions of the earnings of absent parents. These predictions allow us to compute the maintenance bill if we make a further assumption about the housing costs, and new domestic circumstances of the absent parent. The main drawback of this procedure is that it assumes that absent fathers have the same earnings as employed married men. It seems likely that men who are “unsuccessful” in marriage are likely to be less successful than average in the labour market – although it is possible to think of arguments that go in the other direction. Moreover, they may be more likely to be unemployed than married men with spouse present. We ignore both these sources of error which would lead us to predict lower government expenditure than would otherwise be the case.

TABLE 4
Simulated Effects on Net Incomes and Labour Force Status

	<i>All</i>		<i>CS=0</i>		<i>CS>0</i>	
	<i>Base</i>	<i>Post-reform</i>	<i>Base</i>	<i>Post-reform</i>	<i>Base</i>	<i>Post-reform</i>
Net income at $h=0$	110.27	115.30	110.19	111.21	110.00	117.92
Net income at $h=25$	140.21	160.81	137.91	156.31	145.11	162.92
Net income at $h=40$	154.91	175.19	150.11	166.95	160.39	182.82
Non-participation	50.01	46.11	57.99	52.10	30.55	28.22
Part-time	30.19	29.19	30.11	31.80	40.02	38.12
Full-time	19.80	24.70	11.90	16.10	29.43	33.66

amounts in the data, but are predicted to have smaller entitlements under the reform (below the diagonal in the table).

Table 4 shows the net incomes for the 1992 sample, reflatd to 1993, pre- and post-reform under the assumption that there are no labour supply effects. Notice that the reform increases net incomes at all points, but especially for those individuals who currently do not receive CS when they work – for those that do not work, the increased CS is mostly offset by the reduction in IS. The table also shows the expected proportions of the sample in each labour force state – i.e. the average probabilities of being in each of the labour market states across all individuals.

Table 4 also gives the labour supply consequences. The small increase in net income at zero hours that typically occurs would tend to reduce participation but this, in practice, is more than offset by the larger increases in net income that occur in part-time and especially full-time work. Notice that the effect on participation for those currently receiving CS pre-reform is small, but for the CS=0 sample there is a large increase in in-work income and this is reflected in a larger increase in participation.

The reform clearly transfers some of the cost associated with CS from the government to the absent parent. However, it is not easy to see precisely what the Exchequer gains would be under this reform since account has to taken of the impact of the reform on the tax liabilities of both the caring and absent parent and the behavioural responses of the caring parent. In order to compute these effects, we take the probabilities predicted by the estimates and compute the probability weighted levels of IS, FC, HB and tax and NIC and average across all individuals. The results of this exercise are given in Table 5.

On average CS increases by more than £40 per week although there is a small reduction due to the effects of the reform on increasing the work incentives for lone

TABLE 5
Simulated Effects on Benefit Expenditure and Tax Revenue
(£ per household per week)

	<i>Pre-reform</i>	<i>Post-reform (h fixed)</i>	<i>Post-reform (h variable)</i>
Child Support	11.21	54.11	53.78
Income Support	52.26	28.35	25.78
Family Credit	12.37	11.82	13.11
Housing Benefit	4.92	8.78	8.92
Mother's NIC	3.92	3.92	3.99
Mother's tax	8.25	9.12	9.20
Father's tax + NIC	84.12	78.32	78.32
Net government revenue	26.74	42.41	43.70

mothers which gives rise to an increase in their earnings and reduces the amount of CS that the absent fathers need to pay. However more than half the gain in CS is offset by falls in IS entitlements. The effects on FC and HB are complicated. HB for lone mothers is low because most of them have their housing costs paid by IS, and those that work tend to be more likely to be owner-occupiers (who are not entitled to help with their mortgage payments under the HB system). HB rises because many lone mothers cease to be entitled to IS and can then claim help with their housing costs from the HB system. This effect is exacerbated by the increase in participation which takes more individuals off IS. FC receipts fall because some individuals lose some (or all of their FC because of their additional CS. Once we allow for labour supply responses, FC entitlements rise because of individuals shifting from NP (where they are not entitled to FC) to PT (where they may well be). The mother's tax liability rises because of the additional CS and because of the additional earnings. Similarly there is a rise in NIC payments from the additional earnings. The fathers' tax liabilities fall because of their additional CS payments.

Note that the decrease in IS payments arising from greater CS payments is exacerbated by the behavioural response towards non-participation (and dependence on IS) driven by the large negative coefficient on NP net income in the participation equation.

The expected increase in net revenue is a little lower when one allows for the behavioural responses, and the analysis suggests that there would be a per capita reduction in net government expenditure close to £900 per annum [$52 \times (43.70 - 26.74)$]. The net saving to the Exchequer is therefore likely to be in the order of £800 million per year since the legislation seems likely to cover all non-widowed lone parents, of whom there seem likely to be more than 900,000 (and, we assume,

the impact of the proposals on lone fathers will be negligible – either because they work full-time and would not be receiving any financial support from the DSS, or because they are widowers).

These results should be treated with caution since they are derived from untestable assumptions about the characteristics of the absent fathers. Ideally one would want panel information on the incomes of the father before and after separation, but this is not available in the UK. Indeed we do not even have information on the distribution of characteristics of absent fathers since there is no way of identifying which individuals are fathers unless the children live in the household.¹⁷

V. CONCLUSIONS

This article has been concerned with analysing the impact of recent changes to the UK Child Support (CS) using a model of the determinants of the pattern of labour market behaviour of lone mothers. Lone parents are distinctive in the UK as being eligible for Income Support payments without having to satisfy an availability for work eligibility criterion. The modelling concentrated on estimating the effects of the budget constraint, of demographic variables, and of CS. The results show that the labour market status of lone mothers is quite sensitive to the nature of economic incentives. The presence of young children has a dramatic negative effect on the participation probability, but no significant effect on the full-time/part-time decision conditional on participation, while older children have a smaller negative effect on participation.

CS was incorporated into the budget constraint, but we attempted to see if there was any additional effect on the labour market behaviour of those who receive CS from those that do not. We found that those who receive CS were more likely to work. This finding seems consistent with the argument that the uncertainty of current CS payments is important – such an argument would suggest lower labour force participation might be a consequence of greater enforcement of CS orders.

The model was used to simulate the impact of replacing the existing CS payments by amounts suggested by the new legislation. Under this scheme CS payments would be means tested against the absent parent's income (net of tax and various allowable expenses) and would depend on the needs (and means) of the caring parent. The new arrangements would be accompanied by new CS disregards in the Housing Benefit and Family Credit programmes but, importantly, not in Income Support. The estimates here were used to predict the impact of these changes on (expected) labour market behaviour and government revenue and

¹⁷ Moreover, we interpret the CS dummies in the model as indicating that this source of income is uncertain, and in our reform simulation we assume that the reform has the effect of eliminating this uncertainty.

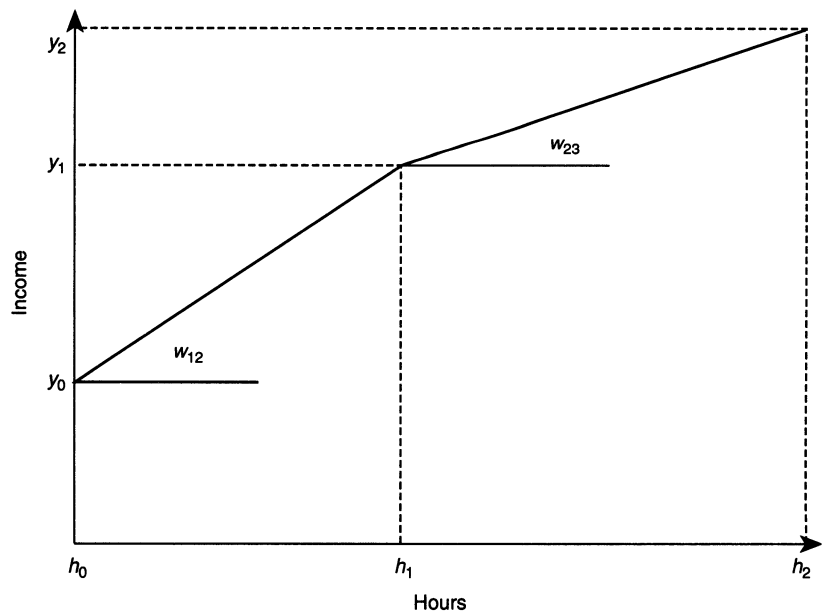
expenditures. The revenue impact amounts to a likely reduction in government expenditure of £800 million per annum (close to 1 per cent of the total social welfare budget for the DSS). The estimates also suggest that approximately 40,000 non-working lone mothers,¹⁸ who depend on IS, would join the labour market.

TECHNICAL APPENDIX

Figure A1 depicts the basic theory. The neoclassical labour supply model suggests that participation will be a decreasing function of income when out of work and an increasing function of how worthwhile it is to work. Similarly if an individual does work then he or she will be more likely to work part-time the higher is income when part-time work is chosen and the less lucrative it is to work full-time.

In this figure we let y_1 be income when hours of work are zero; y_2 be income when hours of work are part-time; w_{12} is the wage per hour for moving from zero hours to part-time hours (so $w_{12} = (y_2 - y_1)/h_2$, where h_2 are part-time hours; w_{23} is the wage per hour of extra pay or moving from part-time to full-time hours (so $w_{23} = (y_3 - y_2)/(h_3 - h_2)$ where y_3 is full-time income and h_3 is full-time hours).

FIGURE A1
Economic Variables and Labour Market Status



¹⁸ The participation rate is predicted to rise by approximately 4 percentage points.

The theory suggests that participation is an decreasing function of y_1 and an increasing function of both w_{12} and w_{23} ; and that, conditional on participating at all, full-time work is more likely than part-time work the lower is y_2 and the higher is w_{23} .

TABLE A1
Bivariate Probit with Sample Selection

Variable	Participation vs non-participation	Full-time vs part-time
Constant	1.012 (0.25)	0.618 (0.31)
$y_1/100$ (£/week)	-0.811 (0.12)	—
$y_2/100$ (£/week)	—	-0.331 (0.15)
w_{12} (£/week)	0.231 (0.05)	—
w_{23} (£/week)	0.255 (0.05)	0.402 (0.05)
Unemployment rate (%)	-0.172 (0.09)	0.311 (0.12)
Householder	-0.222 (0.08)	-0.418 (0.12)
Widow	-0.025* (0.10)	-0.405 (0.12)
CS recipient	0.333 (0.05)	-0.212 (0.07)
Youngest child 0–2	-1.199 (0.09)	0.178* (0.20)
Youngest child 3–4	-0.815 (0.09)	-0.259* (0.19)
Youngest child 5–10	-0.310 (0.06)	-0.300 (0.10)
ρ_{uv}	-0.660 (0.19)	
Log-likelihood	-5489	

Note: Age, region and year dummies are included throughout. 6309 observations in the participation equation, 2761 in full/part-time equation. Standard errors in parentheses. Coefficients marked with * are not statistically significant at the 5% level.

REFERENCES

- Bartholomew, R., Hibbett, A. and Sidaway, J. (1992) "Lone parents and the labour market: evidence from the labour force survey", *Employment Gazette*, November, pp. 559–78.
- Bingley, P., Symons, E. and Walker, I. (1992) "The labour supply of UK lone mothers: the effects of maintenance and the welfare system", IFS Working Paper 92/19.
- , Lanot, G., — and — (1993) "Child support reform and the labour supply of UK lone mothers", *Journal of Human Resources*.
- Blundell, R.W., Fry, V. and Walker, I. (1988) "Modelling the take-up of means tested benefits in the UK: the case of housing benefits", *Economic Journal*, no. 98, pp. 58–94.
- , Meghir, C. and Duncan, A. (1992) "Taxation in empirical labour supply models: lone mothers in the UK", *Economic Journal*, no. 102, pp. 265–80.

- Bradshaw, J. and Millar, J. (1991) *Lone Parents in the UK*, London: HMSO.
- Brown, J.C. (1989) "Why don't they go to work: mothers on benefit?", Social Security Advisory Committee Research Paper 2, London: HMSO.
- Department of Social Security (1990) *Children Come First*, London: DSS.
- Dilnot, A. and Walker, I. (1990) *The Economics of Social Security*, Oxford: Oxford University Press.
- Ermisch, J. and Wright, R. (1992) "Welfare benefits and lone parents' employment", *Journal of Human Resources*, no. 26, pp. 424–56.
- and — (1993) "Wage offers and full-time and part-time employment by British women", *Journal of Human Resources*, no. 28, pp. 111–33.
- Fraker, T. and Moffitt, R. (1988) "The effect of food stamps on labour supply", *Journal of Public Economics*, no. 35, pp. 25–56.
- Haskey, J. (1993) "Estimated numbers and demographic characteristics of one-parent families in Great Britain", *Population Trends*, no. 71, pp. 26–35.
- Hausman, J. (1980) "The effect of wages, taxes, and fixed costs of work on women's labour force participation", *Journal of Public Economics*, no. 14, pp. 161–95.
- Jenkins, S.P. (1990) in Dilnot and Walker (eds.).
- Jenkins, S.P. (1992) "Lone mothers' employment and full-time work probabilities", *Economic Journal*, no. 102, pp. 310–20.
- MaCurdy, T. (1992) "Work disincentive effects of taxes: a re-examination of the evidence", *American Economic Review (Papers and Proceedings)*, no. 82, pp. 243–9.
- , Green, D. and Paarsch, H. (1990) "Assessing empirical approaches for analysing taxes and labour supply", *Journal of Human Resources*, no. 25, pp. 415–90.
- Moffitt, R. (1986a) "Work incentives in the AFDC system: an analysis of the 1981 reforms", *American Economic Review (Papers and Proceedings)*, no. 76, pp. 219–23.
- (1986b) "The econometrics of piecewise linear budget constraints: a survey and exposition of the maximum likelihood method", *Journal of Economics and Business Statistics*, no. 4, pp. 317–28.
- Mroz, T.A. (1987) "The sensitivity of an empirical model of married women's hours of work to economic and statistical assumptions", *Econometrica*, vol. 55, pp. 765–800.
- Walker, I. (1990) "The effect of income support measures on the labour market behaviour of lone mothers", *Fiscal Studies*, vol. 11, pp. 55–74.