

Department for Work and Pensions

Research Report No 569

The impact of financial incentives in welfare systems on family structure

Bruce Stafford and Simon Roberts

A report of research carried out by the International Centre for Public and Social Policy, The University of Nottingham on behalf of the Department for Work and Pensions

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Abbreviations

AFDC	Aid to Families with Dependent Children
AFDC-UP	Aid to Families with Dependent Children- Unemployed Parent
BHPS	British Household Panel Survey
CPS	Current Population Survey
CTC	Child Tax Credit
EITC	Earned Income Tax Credit
FES	Family Expenditure Survey
FTBA	Family Tax Benefit Part A
JOBS	Job Opportunities and Basic Skills
MFIP	Minnesota Family Investment Program
NLSY	National Longitudinal Survey of Youth
OECD	Organisation for Economic Co-operation and Development
PAYG	Pay As You Go
PRWORA	Personal Responsibility and Work Reconciliation Act 1996
PSID	Panel Study of Income Dynamics
SSP	Self-Sufficiency Project
TANF	Temporary Assistance for Needy Families
UK	United Kingdom

US

United States

WFTC

Working Families Tax Credit

WTC

Working Tax Credit

Summary

Introduction

There are academic and policy debates about whether financial incentives in welfare (that is, benefits and tax credit) systems affect demographic behaviour. For some they are seen as leading to less marriage, and more cohabitation, non-marital births and single parents. This report reviews the evidence on the influence of financial incentives in the welfare system on union formation and dissolution and on childbearing. The review also highlights the implications of reported findings for the United Kingdom (UK).

Many countries, including the UK, have witnessed substantial changes to family lives and structures since the Second World War. In general, there has been less marriage with those marrying tending to do so later in life, more cohabitation, more same sex relationships, more divorce, childbearing has been delayed to later in life and there are more births outside of marriage. As a consequence, there has been a rapid increase in single parenthood.

The UK literature, which is very limited in quantity, tends to focus on the impact of the introduction of Working Families Tax Credit (WFTC) on family structure. Most of the literature is from the United States (US), where the focus is on the welfare effects of two means-tested programmes, Aid to Families with Dependent Children (AFDC) and its replacement, Temporary Assistance for Needy Families (TANF), as well as Earned Income Tax Credit (EITC).

Much of the literature is informed by economic theory, which sees the decision to marry, cohabit or have children as being influenced by financial incentives and disincentives. Benefits, tax credits and employment programmes can be conceived as influencing demographic behaviour indirectly through their effect on employment and family income. In addition, there are other (intervening) factors that affect family structure, such as, social norms and attitudes, race, educational attainment, self-esteem, age and so on. As a consequence, it can be difficult to predict whether the welfare system has a positive or a negative effect on family structure. For instance, work incentives in benefits and tax credits may lead to an increase in union formation as gaining work improves a woman's self-confidence,

self-esteem or widens her social network which then includes more potential partners. However, it may mean she has less time to search for a partner or to socialise and so leads to decline in marriage/cohabitation. Similarly, higher female earnings (from the welfare system and/or employment) may mean that she is more attractive as a potential partner or that she has acquired the financial independence to live on her own. The factors underpinning demographic behaviour are complex and the underlying mechanisms are not fully understood.

There are three broad methodological approaches used by analysts:

- non-experimental;
- experimental, and
- quasi-experimental.

In terms of the volume of evidence there are considerably more published analyses using non-experimental methods. Over time, researchers using non-experimental approaches have increased their degree of control over unobserved factors in their analyses, especially for factors operating at State and individual levels. With increasing levels of control for unobserved variables, the size of any welfare effect on demographic behaviour tends to diminish; indeed, what could be reported as statistically significant impacts can become insignificant. Social experiments help to address the problem of unobserved factors, but there are problems with being able to generalise beyond the locality where the demonstration project was conducted, and there are concerns about possible contamination of control groups in some studies. The main quasi-experimental method used is difference-in-difference, which involves comparing demographic outcomes for a group affected by a policy or programme with one unaffected by the intervention both before and after the introduction of the reform.

Welfare systems and partnering

Some commentators express the concern that there may be a 'marriage penalty' (as opposed to a 'marriage bonus') in the benefit and tax credit system. A union/marriage bonus (penalty) occurs when a couple receive more (less) in benefit/tax credit payments than they would if they were single. For union/marriage bonuses or penalties to exist there are two pre-conditions: the unit of assessment is the family (rather than the individual) and different marginal tax rates apply at different income levels. A benefit/tax system cannot be simultaneously neutral towards marriage, be progressive and treat families with the same income equally.

The evidence that welfare systems affect union formation is mixed. Where there is an effect it tends to be small or modest in size (typically, two to five percentage points). Moreover, the impacts appear to vary considerably by sub-group and possibly take some time before they emerge. US and Canadian studies also highlight that findings vary by local context.

In the UK, lone parents claiming Family Credit (FC) were more likely to enter marriage or cohabitation than non-recipients. This implies that FC did not act as a disincentive to forming unions notwithstanding that dual-earner families could lose entitlement to the benefit. However, following the introduction of WFTC, single parents were less likely (by 2.4 percentage points) to form a union than single childless women. This impact was more pronounced for women with younger children (two to three percentage points). This difference in UK findings might be because WFTC was more generous than FC; it reduced the opportunity cost of being a single parent.

The US literature shows that AFDC could have a negative, positive or no effect on marriage and cohabitation. Moreover, the effects varied by race and level of control for unobserved factors for those using non-experimental approaches in their analyses. For example, one study shows that for non-black, never-married mothers a \$100 increase in monthly benefit reduced the probability of marriage by 19.5 per cent, but for black, never-married mothers the probability of marriage increased by 19.8 per cent.

US results for the impact of welfare reforms (AFDC waivers and TANF) are also mixed.¹ In terms of non-experimental approaches, for example, one study finds that AFDC waivers and TANF States reduced marriage rates, but another that AFDC waivers increased marriage but TANF had no significant effects. Similarly, social experiments are inconsistent on whether there is relationship between welfare policies and marriage rates for single parents. However, a meta-analysis reveals that, in general, programmes have tended not to have an effect for single parents on rates of marriage or cohabitation.

There is some indication that welfare systems can have a longer term impact on some people's demographic behaviour. For example, one study shows that for two-parent families their rates of marriage/cohabitation were higher (by seven percentage points) 29 to 41 months after joining an employment programme; another study shows that after seven years long-term benefit recipients on an employment programme were less likely to have divorced than non-participants – although no significant effect was found for more recent recipients.

In general, the effect of EITC on partnering has been small and statistically insignificant.

US and Canadian research also shows that local context can have an important bearing on impact estimates. For instance, the Canadian Self-Sufficiency Project (SSP), which was an earnings supplement paid to single parents in receipt of benefits when they entered full-time employment, was evaluated using experiments in two culturally and geographically distinct provinces: British Columbia and New Brunswick. It decreased the probability of being ever married or cohabitating in British Columbia by 2.5 percentage points (a 16 per cent fall); but increased the probability of being ever married or cohabitating in New Brunswick by 4.3 percentage points (a 22 per cent rise).

¹ The waivers covered introducing family caps, extending income disregards, amending time limits and expanding eligibility for two-parent families.

The review also includes two pension studies: First, a Canadian study finds that the removal of marriage penalties for surviving spouses in the Canadian pension system showed that remarriage rates for females aged under 65 and for males aged 45 to 59 increased significantly. However, there are queries about the quality of the data used. Secondly, an analysis of the impact of social security (payroll) taxes for defined-benefit, Pay As You Go (PAYG) pension schemes on family formation across the Organisation for Economic Cooperation and Development (OECD) finds that social security payroll taxes slightly reduce net marriage rates. However, this analysis includes several simplifying assumptions which limit its applicability.

Tentatively, this review finds that whilst there are some studies showing a welfare effect on marriage/cohabitation typically for sub-groups, there is, overall, no consistent evidence for a large and significant impact on union formation. Indeed, there is no set of studies that encompass analyses of an extensive range of sub-groups, explores longer term effects, has high external validity, and uses robust data.

Welfare systems and union dissolution

A smaller number of studies assess whether financial incentives in welfare systems are sufficient to lead to increased levels of divorce and separation. A problem with this literature is that it does not always distinguish between the dissolution of marriages and cohabitation, yet different factors may be in operation.

Only one UK study was identified, which uses a quasi-experimental approach to explore whether WFTC had an impact on mothers' decisions to dissolve unions. Overall, it found no impact. However, a sub-group, mothers with male partners on low earnings (that is, working less than 16 hours per week), had higher divorce/separation rates (2.4 percentage points) than married women without children. Moreover, for this sub-group the divorce/separation rate was slightly higher where the mother had a higher level of education or where there were young children present.

US studies, together with an Australian study, provide mixed international evidence on whether there is a welfare effect on union dissolution. They do, however, serve to highlight the role of other factors in dissolutions. For example, husbands with poor economic positions, couples dissatisfied with their marriage, males feeling depressed or anxious are all associated with higher rates of divorce/separation.

Two US studies suggest that AFDC had little or no effect on union dissolutions, but another shows that states with AFDC waivers had lower rates of divorce (5.5 per cent) compared to those states without waivers. So welfare reform, as policy makers intended, could lead to a fall in the number of new divorces.

To the extent that there is an effect it appears to be larger for certain sub-groups; the UK and Australian studies suggest that the effect is greater in families with lower earnings. However, the small number of studies, the mixed findings,

doubts about the robustness of some of the studies and that they do not always distinguish between dissolving marriages and cohabitations mean that there is no overwhelming evidence that welfare systems have had a major impact on union dissolution.

Welfare systems, childbearing and single parents

The review found relatively few studies on fertility and moves into single parenthood at the European level. González (2005 and 2007) finds a positive and significant association between welfare benefits and the incidence of single motherhood. However, as González' (2007) analysis becomes more sophisticated the size of the impact of benefits on single motherhood and single headship becomes smaller and eventually statistically insignificant.

Of the three UK studies of WFTC reform, two find no significant impacts and the third an increase in birth rate for couples.

Findings from US literature on the impact of AFDC on female headship show only small or no effects. Hoynes (1997) finds *'no evidence that AFDC has a significant effect on female headship decisions'*. Lichter *et al.* (1997) find that many of the variables they analyse only have a relatively small effect on female headship, and argue that cultural changes underpin the observed increase in female headship. More recent studies that take into account unobserved variables at the level of the individual find that the welfare effect is not only small but statistically insignificant.

Early US studies suggest a positive welfare effect on the fertility of unmarried women. But these effects largely disappear once controls for unobserved state characteristics are introduced into analysts' models. Subsequent studies suggest minimal or no effect of welfare on fertility – with the exception of family cap policies. The family cap is a mixed picture – most studies find little or no effect; a small number of studies report either a small positive effect, or counter-intuitively a small negative effect.

Implications for the UK welfare system

Identifying the policy implications of the reviewed literature for the UK is difficult. The underlying theory can be ambiguous about the direction of any welfare effect. Factors other than the welfare system have a key role in influencing demographic behaviour. Empirical studies provide mixed findings. Moreover, differences in policies and national contexts mean that findings from overseas about the direction, magnitude and significance of welfare effects cannot simply be applied to the UK.

Nevertheless, there are policy options in the literature to address union/marriage penalties and reduce (non-marital) childbearing.

The former include:

- changing the unit of assessment from the family/household to the individual;
- introducing a transferable allowance for couples, and
- targeting families with children by, for instance, increasing the basic credit in WTC for couples with children.

Notwithstanding these policy options there may be reasons for retaining union/marriage penalties, for example, couples – in contrast to single adults – benefit from household economies of scale, usually higher incomes, and from the time that a second adult can devote to a family. The latter policy options include in the short-term, improving sex education in schools, contraceptive take-up, and access to early abortion. In the longer term, they include increasing opportunities for employment and further education for client groups (both females and males).

The complexity of welfare systems' interactions with demographic behaviour, the role of other factors, and the absence of cost-effectiveness studies on using welfare systems to influence family policy inevitably raises the question of whether other policy instruments, such as family counselling services, would be more efficient and effective at 'nudging' family structure in any desired direction. The review did not examine this other policy literature, but the mixed and small to modest impact that only some studies show for a welfare effect on family structure suggests limited scope for influencing demographic behaviour through the benefit and tax credit systems.

There are also potential tradeoffs in policy objectives. Welfare systems designed to promote certain family arrangements may have to do so at the expense of other policy goals, such as being progressive, treating families with the same total income equally, maximising work incentives and achieving simplicity in administrative systems and for customers.

Conclusions

The actual impact that financial incentives have on family structure is contested. Analysts across countries and over time report mixed findings.

The evidence base for the UK is small. However, the international literature does provide some guidance on how to conduct analyses in this area. There is a need for UK research that is more up-to-date in terms of policies/programmes covered, that has the potential to provide estimates of longer-term impacts and has sufficiently large sample sizes to allow extensive sub-group analyses.

Whilst there are studies finding significant impacts, these tend to be small and are countered by studies finding no relationship or the opposite effect. To the extent that some studies provide evidence of a welfare effect on family structure, its magnitude is often smaller than classical economic theory might predict. On balance the reviewed literature shows that there is no consistent and robust evidence to support claims that the welfare system has a significant impact upon family structure.

1 Introduction

1.1 Introduction

'All social policies create incentives, and most create at least some that are undesirable in the eyes of policymakers.'

(Ellwood (2000b:1063))

Many social and fiscal policies incorporate financial incentives and disincentives that could affect family structure. Some commentators argue that financial incentives in welfare systems affect demographic behaviour (see, for instance, Draper (2008) and Morgan (2007)). However, whether financial incentives in the welfare system actually affect behaviour is contested (Blundell and Walker, 2001). This report reviews the evidence on the influence of financial incentives in the welfare system on demographic behaviours such as partnering, separating and childbearing. The review also highlights the implications of reported findings for the United Kingdom (UK).

Most of the evidence reviewed is from the United States (US), which reflects longstanding academic and public debates about whether the tax and transfer system impacts upon family structure (Moffitt, 1998a:1). There is a popular notion that *'...welfare provides an incentive for women to not marry or remarry, to have children out of wedlock, and to live independently rather than at home with parents...'* (Moffitt, 1998a:1). Morgan (2007:121) outlines how this might happen:

'...today's benefits system can be seen as underwriting a decision to have children looked after by a lone parent when the earning potential of the father is relatively weak. Potentially, the benefits system has three effects. First, it can encourage lone parenthood rather than couple formation because of the bias in tax and benefits systems against couples – particularly single-earner couples. Second, it can encourage childbearing as opposed to a decision not to have children. Third, the benefits system can, itself, bring about labour market conditions that are less conducive to couples taking a decision to marry.'

If the welfare system discourages marriage or increases non-marital births there is a concern that this might adversely affect child outcomes given evidence (for example, for educational attainment, teen parenthood, poverty and health) that children appear to benefit from living in two-parent families (provided they have a 'low-conflict relationship') (Roberts, 2008:1; see also Ermisch and Francesconi (2001), Rodgers and Pryor (1998), and McLanahan and Sandefur (1994)); although poor outcomes for children may be more due to income poverty than family structure (see, for instance, Joshi *et al.*, 1999 and Geronimus, 1997).²

In general, this review finds that the effect that welfare systems have on family structure is mixed; some studies report a positive effect, others a negative effect and some no significant effect. Where there is a welfare effect, it tends to be relatively small sized; and less than might be expected on the basis of 'classical' economic theory. Moreover, the method used to analyse the impact of benefits and tax credits on demographic behaviour has a bearing on the magnitude and significance of any effect. Hence how the studies were conducted is an important part of this review.

The remainder of this chapter outlines the review's objectives, see Section 1.2, how it was conducted, see Section 1.3, provides background information on UK and US demographics and welfare systems, see Section 1.4, and outlines theoretical, see Section 1.5 and analytical, see Section 1.6, issues relevant to the review.

1.2 Review's objectives and scope

The review is focused on people's behavioural responses to financial incentives in welfare systems. The review evaluates evidence on the influence of financial incentives in the tax credit and benefit systems on:

- partnering (marriage and cohabitation);
- separation (divorce and separation), and
- childbearing.

It outlines the mechanisms that may influence demographic behaviour. In addition, the review considers the methodological challenges underpinning the studies, gaps in the evidence base and the extent to which international evidence is applicable to the UK.

The scope of the review has had to be limited because there is an extensive literature, especially from the US, on welfare systems and family structure. Thus the review is focused on studies:

- published after 1997; and
- conducted in English-speaking countries that have tax credits or benefits which are similar in design to those in the UK.

² There is also evidence that teen children of single parents living in three-generation households in the US have outcomes that are as good as those living in two-parent families (see Bitler *et al.*, 2006:3).

Excluded from the review are:

- any influence the wider tax system might have on family structure (see, for instance, Buffeteau and Échevin (2008));
- the identification and evaluation of work incentives;
- the outcomes for children of financial incentives in the welfare system (see, for example, Sherman (2001));
- welfare programmes where there is no direct transfer of cash, such as Food Stamps and Medicaid which are specific US programmes that have no real UK equivalent;
- the literature on child support and maintenance payments (see, for instance, Aizer and McLanahan (2005), Plotnick *et al.* (2006), and Walker and Zhu (2006)).

1.3 Conduct of the review

This review involves the synthesis of a relatively wide range of published sources. The search strategy was purposive involving 'informed', extensive sweeps rather than systematic searches (Gough, 2007). Searches were conducted using academic online databases using combinations of keyword descriptors based on the research objectives, such as 'family formation', 'marriage penalty' and 'marriage bonus'. The names of certain key authors were also used as search terms, not only to identify other sources by them but also citations of their work by other writers. In addition, a few experts in the field were contacted and asked to identify further studies and researchers.

1.4 Background: UK and US family structures and welfare systems

As most of the studies reviewed in subsequent chapters come from the UK and US, this section outlines recent demographic changes affecting families in the UK and US, as well as selected components of their welfare systems.

1.4.1 Demographic changes affecting UK families

In many countries, including the UK and US, there have been substantial changes to family lives and structures since the Second World War (Williams, 2005:18). In general, there has been less marriage with those marrying tending to doing so later in life, more cohabitation, more same sex partnerships, more divorce, childbearing has been delayed to later in life and there are more births outside of marriage (McConnell and Wilson, 2007:12). A small but increasing proportion of the population also form 'reconstituted families' as families dissolve and reform. These trends reflect a complex interplay of cultural, economic, legal, political, religious and social factors.

Families – overview

Although the motif for the discussion below is the changing nature of the family, there is a high degree of continuity in familial relationships. Most children live in two-parent families and most marriages do not end in divorce. Although cohabitations typically have a short duration (see ahead), between 2001 and 2003 most family relationships (94 per cent of couples and 83 per cent of single parents) remained unchanged (Barnes *et al.*, 2005:26-27).

Nevertheless, families in the UK have been changing since the 1980s. The overall number of families in the UK is growing; in 2006 there were 17.1 million families which was over two million more than in 1971 (McConnell and Wilson, 2007:2). Whilst the majority, 71 per cent (over 12 million), of the families in 2006 were married couple families, over the previous ten years the proportion of married couples has fallen by over four per cent. This decline has been accompanied by an increase of over 60 per cent in cohabitating couples (to 2.3 million) and an increase of eight per cent (to 2.6 million) in single parent families.

Most dependent children live with two parents, but this proportion has been falling. In the UK, in 2006, there were 7.4 million families with dependent children (McConnell and Wilson, 2007:5). Most of these children (65 per cent) lived in married couple families, whilst around a quarter (24 per cent) lived in single parent families and just under an eighth (12 per cent) lived in cohabitating couple families.

In general, cohabitating couple families are younger than married couple families (McConnell and Wilson, 2007:6). This reflects that cohabitation can be a precursor to marriage and that younger generations are increasingly tolerant of cohabitation. Similarly, heads of families with dependent children tend to be younger (in their 30s or early 40s) than those with no children or with non-dependent children.

Marriage

There has been a decline in marriage rates in most European countries, including the UK. Marriage rates have declined in the UK since the 1970s (McConnell and Wilson, 2007:13).³ For instance, the number of single women who got married in 1971 per 1,000 of the single population aged 16 or over was 97 and by 2004 it was 30.8. In 2006, England and Wales had the lowest number of marriages since 1895.

In recent years, people are entering their first marriages later in life. In England and Wales, the median ages of first marriages increased from 24 for males and 21.6 for females in 1961 to 30.4 for males and 28.3 for females in 2004 (McConnell and Wilson, 2007:12). This reflects delays in first marriages and more remarriages (Wilson and Smallwood, 2008:19). The trend is associated with an increase in cohabitation, and most marriages (70 per cent) are preceded by a period of

³ In England and Wales between 2000 and 2004 the marriage rate increased, but since 2005 the rate has continued its longer term downward trend.

cohabitation (Williams, 2005:14). Thus the '*shift to cohabitation*' is the '*main engine*' for current trends in marriage (Ermisch and Francesconi, 2000:159).

Male and female rates of remarriage following divorce have also fallen; for example, in 1971 the number of divorced men marrying per 1,000 divorced people aged 16 or over was 227.3, but by 2004 it was 45.7 (McConnell and Wilson, 2007:13). However, whilst the number of divorces has been increasing, the number of remarriages in England and Wales has, since the early 1970s, remained '*fairly*' constant. Moreover, divorcees as a proportion of those marrying has been increasing, between 1963 and 2003 it increased by 20 percentage points to over a quarter (Wilson and Smallwood, 2008:18).

Cohabitation

As already mentioned previously, in recent years the number of couples cohabiting, either as a precursor or as a substitute to (re)marriage, has been increasing. Thus the proportion of women aged 18 to 49 in cohabiting unions trebled between 1976 (nine per cent) and 2004 (28 per cent) (McConnell and Wilson, 2007:15). In 2005, 39 per cent of single people aged 25 to 34 were cohabiting. McConnell and Wilson (2007:15) observe that the rate of cohabitation for the most recent age cohort (those born 1956-60) is more stable. Consequently, the rate of increase in cohabitation may slow.

In most Western European countries, including the UK, cohabiting unions tend to be short-lived, either dissolving or converting into marriage (Ermisch and Francesconi, 2000:157-158; Kiernan, 1999:32). In the UK during the 1990s, almost a half (45 per cent) of cohabiting unions ended within two years by either converting into marriage or dissolving (Ermisch, 2002:1-2). In 2004, 16 per cent of adults aged 16 to 59 said that they had experienced at least one cohabiting union that did not lead to marriage (McConnell and Wilson, 2007:15). Unions with children were less likely to convert to marriage and were more likely to dissolve than those for childless women (Ermisch, 2002:2), although mothers tend to remain in cohabitations for longer than non-mothers (Ermisch and Francesconi, 2000:168). Thus, cohabiting women giving birth to a child were at a relatively high risk of becoming a single parent. Those cohabiting unions at greater risk of having a baby were those facing poorer financial circumstances, notably those where the male was not in employment and the woman's father had had semiskilled or unskilled manual job (Ermisch and Francesconi, 2000:169). Unions that did convert to marriage tended to be those where the male had higher earnings and so contributed more income to the couple (Ermisch, 2002:2; see also Ermisch and Francesconi, 2000:168).

People leaving cohabitation tend to repartner sooner than those divorcing, mainly because they tend to be younger (Ermisch, 2002:3-4). The median duration for repartnering after dissolution of a cohabiting union was 2.3 years (compared to five years following the dissolution of a marriage) with most (70 per cent) of those leaving the cohabitation repartnering within five years. Those with children

leaving a union tend to take longer to repartner; for instance, the proportion repartnering with children within five years was 15 percentage points lower than for those without children.

Union dissolution

The divorce rate in England and Wales has increased in recent years. It increased from 12.9 per 1,000 married population in 1998 to 14 per 1,000 married population in 2004, but fell slightly to 13.1 in 2005. Historically, increases in divorce follow legal reforms, such as the Divorce Reform Act 1969 and the Matrimonial and Family Proceedings Act 1984, which allowed couples to divorce after one year of marriage. Since the early 1970s there has been a rapid rise in the rate of divorce after one to two years of marriage; the rate peaks at three to four years of marriage and then declines over time (Ermisch, 2002:4-5). Nonetheless, the annual divorce rate has stabilised at about six per cent for those born after 1951 (McConnell and Wilson, 2007:13).

Unions may dissolve for a variety of reasons, and the causal mechanisms are complex with how, for instance, economic factors interact with 'marital quality' and well-being unclear (see Bradbury and Norris, 2005:426-427). However, Blekesaune (2008), using longitudinal data from the British Household Survey Panel, shows that in the UK male or female unemployment increases the risk of partnership dissolution (of both married and cohabitating couples). Male unemployment is associated with a 33 per cent larger risk of partnership dissolution and female unemployment with an 83 per cent larger risk of dissolution compared to partnerships with no unemployment in the previous year (Blekesaune, 2008:8; see also Böheim and Ermisch, 1999). Moreover, the increased risk due to male unemployment is associated with low levels of financial satisfaction amongst partnered women and this also helps to explain why unemployment leads to increased union dissolution. Thus low family income would appear to destabilise partnerships for women. The increased risk of female unemployment terminating a union was associated with mature, rather than recent, partnerships. (Indicating some support for an 'independence effect' (see ahead) for women in relationships that have lasted some years.) Blekesaune (2008) did not include receipt of benefits in her models, but presumably many of the unemployed couples would have been in receipt of Jobseeker's Allowance (JSA). Nonetheless, the research suggests that the presence of unemployment, rather than the welfare system *per se*, is a key factor in union dissolution.

Other research suggests that age at marriage is also an important factor in marital instability, with couples marrying at a younger age more likely to separate (see Bradbury and Norris, 2005:426; Ermisch and Francesconi, 2000:168; and Böheim and Ermisch, 1999). This is possibly because they have spent a shorter period of time looking for a 'good' match. In addition, for couples with dependent children, union dissolution (married and cohabiting) is less likely if the couple enjoys an unexpected improvement in their financial circumstances (Böheim and Ermisch, 1999).

Single parents

There has been a rapid increase in single parent households. The proportion of dependent children living in single parent families has increased from 18 per cent in 1981 to 23 per cent in 2001 (Bakeo and Clarke, 2004:7). The growth in single parents in the 1970s and early 1980s was due to increases in divorce and separation. Since the mid-1980s, the increase is mainly due to the increase in non-marital births. In the 2000s the flow from couple families into single parenthood was three per cent per annum (Clarke and McKay, 2008:59-60), whilst the rate at which single parents form new unions (with children) was nine per cent per annum. There are also ethnic differences in single parenthood, with high rates amongst African-Caribbean women and lower rates amongst Pakistani and Bangladeshi households (Williams, 2005:22).

Fertility

Since the mid-1960s, and until recently, there has been a rapid fall in the fertility rate. The total fertility rate fell rapidly during the 1960s and 1970s, but increased from 1.63 in 2001 to 1.84 in 2006. The decline in fertility reflects that more women have remained childless, more women have been having children later in their lives and fewer women are having larger sized families (Dixon and Margo, 2006:72-73). Women may be delaying having children in order to maximise their life-long earnings – a ‘mid-skilled’ women forgoes, on average, £564,000 (at 2005 prices) in lifetime earnings if she has a baby at 24 compared to a childless women (Dixon and Margo, 2006:76). Not surprisingly, increases in women’s earnings are associated with postponing childbirth. As a proportion of forgone earnings this ‘fertility penalty’ is larger for women with lower skills (and hence low-income potential).

In the UK, the number and proportion of non-marital births has been increasing since 1975. In 1999, 39 per cent of births in Great Britain were outside marriage (Ermisch, 2000:3) but by 2006 it was 43.7 per cent.⁴ There has been an increase in childbearing in first cohabitations (Ermisch, 2000:5). Unemployment is associated with higher non-marital childbearing (Ermisch, 2000). A one percentage point increase in unemployment increases, on average, the annual probability of a woman having a non-marital birth by 0.4 percentage points (a ten per cent increase). In addition, the risk of non-marital childbearing is lower for women with more educational qualifications (Ermisch, 2000:15).

This increase in non-marital live births suggests that the previously strong association between marriage and fertility has weakened (Buffeteau and Échevin, 2008:2-3). More generally, it signifies a weakening of the link between marriage and parenting.

⁴ Table 2.2, Population Trends (2008:49).

1.4.2 UK welfare system

The UK research reviewed here mainly involves two components of the welfare system: Income Support (IS) and tax credits. Accordingly, other elements of the UK benefit and transfer system are not discussed here.

Income Support

IS is an income-based benefit available to people on low-incomes, mainly lone parents, people who are sick or disabled and carers. To be eligible recipients must not work more than 16 hours per week. The amount of benefit includes a personal allowance that varies by age and household composition. IS included child premia which in 2003, were transferred to the Child Tax Credit (CTC).

Critically, for analysts that investigate the impact of policy changes on family structure, when Working Families Tax Credit (WFTC) was introduced in 1999 (see ahead), IS payments to families with children were increased.

Tax credits

The UK studies reviewed in this report tend to focus on WFTC, which replaced Family Credit (FC) (a means-tested in-work benefit) in October 1999.⁵ WFTC was designed to enhance the work incentives of parents in low-income households. To be eligible for WFTC (or FC) a family had to have at least one dependent child, at least one adult who worked 16 hours or more per week and a 'low' or 'middle' household income. Incomes below a threshold received the maximum credit which was gradually withdrawn (the taper) as income rose up to the level at which eligibility ceased. In comparison to FC, WFTC was more generous due to an increased credit for children aged up to 11 years; a higher income threshold; a lower taper rate; excluding child maintenance from its definition of income; and a more generous childcare credit.

WFTC, and the associated Disabled Person's Tax Credit and Children's Tax Credit, were replaced by Working Tax Credit (WTC) and CTC in April 2003.⁶ For families with children WTC essentially replicates the non-child elements of WFTC; however, it is also payable to singles and couples without dependent children. The credit comprises a basic element, a lone parent/couple element, a childcare element (if applicable) and additional elements for working 30 or more hours per week, having an impairment or being aged 50 years or over. Although WTC and CTC are separate programmes they are subject to the same means-test, which is applied to a couple's joint annual income.

⁵ FC was introduced in 1988 and replaced Family Income Supplement (which was introduced in 1971) (see Strickland, 1998).

⁶ The Children's Tax Credit was introduced in April 2001 and provided families with extra income tax relief. Effectively, it was replaced by CTC.

CTC separated out and merged the child premia in WFTC and IS/JSA.⁷ It is means-tested, but payable irrespective of the employment status of the recipient. It consists of a family element (a higher rate is paid if there is a child aged under one year), premia for each dependent child and, where appropriate, an element for disabled children. The CTC is paid to the adult with the main responsibility for caring for the dependent child(ren).

For the purposes of WTC and CTC couples are defined as men and women who are married or cohabitating (that is, living together as if they are married), or two people of the same sex in a civil partnership, or living together as if they are in a civil partnership. Tax credits in the UK take account of the joint income of couples. There is no difference in the treatment of couples or single adults for families with children. For WTC, an additional element is payable to working childless couples (as against working childless single people), and the eligibility requirements in terms of hours worked are slightly different for couples as against single people. However, apart from the support for childcare in tax credits, households with children with the same income and the same number of children will still receive the same amount of tax credits.

In addition, when CTC and WTC were introduced, the 30 hour element was changed so that couples could combine their usual working hours to qualify for this element of the credit. This might have had some impact on any couple penalty/bonus after 2003 as where couples were both working less than 30 hours individually, but 30 or more hours jointly would benefit.

1.4.3 Demographic changes affecting US families

Marriage and cohabitation in the US

Most Americans (about 90 per cent) marry at some point in their lives (Roberts, 2007:2), but there is a wide variation by race – flows into marriage are lower in States with higher proportion of African Americans (Bitler *et al.*, 2004:224). However, since the end of the Second World War rates of marriage have been declining in the US. In 1970, the marriage rate per 1,000 unmarried adult women was 76.5 but by 2004 it had fallen to 39.9 (Burstein, 2007:388). The corollary is an increase in non-marital cohabitation. By the mid-1990s most marriages were preceded by cohabitation (Burstein, 2007:388).

The decline in the rate of marriage varies by sub-group and is higher for African Americans and for those with lower educational qualifications. Amongst never-married women living in poverty, rates of marriage are low and declining (Gassman-Pines and Yoshikawa, 2006:11). Moreover, women with more education are tending to marry later in life (Burstein, 2007:388; Ellwood and Jencks, 2004:13).

⁷ Existing families on IS/JSA have been gradually migrated onto CTC, although the process is not yet complete – in April 2008 around 365 thousand families still received CTC-equivalent support via IS/JSA, compared with 1.018 million out of work families receiving CTC.

Most American marriages and remarriages follow a period of cohabitation (Smock *et al.*, 2005:680). Research shows that in the US cohabitation is associated with age, race, educational background, religiosity and family background (Moffitt *et al.*, 2003:267).

As in the UK, cohabiting unions in the US have shorter durations and higher exit rates compared to marital unions (Moffitt *et al.*, 1998:260). Compared to the general population, rates of cohabitation amongst benefit recipients are higher (Moffitt *et al.*, 1998:262).

Cohabiting couples with children in the US have lower household incomes than married couples with children (Acs and Maag, 2005:2). This difference reflects the lower age and educational attainment of the mothers and the lower employment status of fathers in cohabiting couples compared to married couples. Their lower incomes mean that cohabiting couples were more likely to participate in the welfare system than their married counterparts.

Divorce

In the US rates of divorce have increased since the Second World War. The rate of divorce per 1,000 married women was 9.2 in 1960, rose to 22.6 in 1980 but has fallen since then; it was 17.7 in 2004 (Burstein, 2007:388). The introduction of no-fault divorce in the US is partly responsible for facilitating the increase in the number of divorces (Morgan, 2007:128-129). Divorce and separation rates vary by race and level of education. Rates of divorce and separation are highest for African Americans and women with less than 12 years of schooling, and lowest for non-Hispanic whites and college educated women.

Divorced men in the US are more likely to remarry than divorced women, and divorced women with children are less likely to remarry than those without children (Bergstrom, 1996:1917).

Single mothers

The number of unmarried women having children, including teenage pregnancies, has increased in the US. The proportion of children aged under 18 living in single parent families was about ten per cent in 1965 and this rose to 29 per cent in 1997 but fell back to 27 per cent in 2001 (Ellwood and Jencks, 2004:10). Indeed, between 1997 and 1999 the share of children living in single parent families fell by 2.1 percentage points (Acs and Nelson, 2004:274). The drivers for this have changed over time. In the 1960s and 1970s the rise was due to the increase in divorce rates, whilst in the 1980s and 1990s it was due to non-marital births. The more recent decline in single parenthood may be due to welfare reform and a tight labour market. This trend is also accompanied by an increase in the share of children living in cohabitating families.

The increase in female-headed households with children has been more dramatic for African American women than for white women – for the former the increase

has been from about 30 per cent in 1970 to over 50 per cent in 1993, compared to an increase from eight per cent in 1968 to 17 per cent in 1993 for white women (Bergstrom, 1996:1917). The reasons for this difference are poorly understood (Ellwood and Jencks, 2004:10).

However, there is evidence that rates of single parenthood are lower for women with lower levels of educational attainment (and hence earnings potential) (Ellwood and Jencks, 2004:10-11; Hoynes, 1997a:104).

Fertility

Births outside of marriage were relatively rare in the US until the 1960s (Ellwood and Jencks, 2004:9), but they have increased from 11 per cent in 1970 to 34 per cent in 2002 (Martin *et al.*, 2003 cited by Ryan *et al.*, 2006:104). In addition, second or higher order non-marital births have risen with half of all non-marital births in 1998 to women who already had at least one child (Terry-Humen *et al.*, 2001 cited by Ryan *et al.*, 2006).

Rates of non-marital births are higher amongst African Americans and increasingly for Latino communities, and are higher for those with less education (Ellwood and Jencks, 2004:11-13). Thus:

'...highly educated women are postponing both marriage and childbearing, while less educated women are postponing marriage but not childbearing. The result has been a rapid rise in the fraction of less educated women who have had children but have not married.'

(Ellwood and Jencks (2004:13))

This increase in non-marital childbirth is mainly due to the fall in the marriage rate, and not because women are more likely to have children – that is, most of the increase in non-marital births has occurred in cohabitating unions (Ellwood and Jencks, 2004:9).

1.4.4 US welfare system

The US literature reviewed in subsequent chapters is focused on three components of the welfare system: Aid to Families with Dependent Children (AFDC), its replacement Temporary Assistance for Needy Families (TANF) and the tax credit, Earned Income Tax Credit (EITC). These three programmes are discussed ahead.

ADFC

AFDC or AFDC-Basic was introduced in 1935 by the Social Security Act and provided cash benefits to low-income families with dependent children. 'Dependent children' were defined as those without the support or care of a biological parent due to death, disability or absence from the home. In practice, this meant AFDC covered mainly single mother families – indeed, since the 1980s the majority of recipients were unmarried single mothers (Moffitt, 2003:313). The definition of a dependent child also implied that AFDC could be claimed by a parent who

remarried or was cohabitating with someone who was not the natural parent – that is, AFDC was payable as long as any partner was not the biological parent of the woman's children. In addition, the incomes of step-parents (up until 1981) and cohabiters were effectively excluded from the assessment of benefit (Moffitt, 2003:294). Since a Supreme Court ruling in 1968, AFDC could not be denied to cohabiting mothers; although the male's relationship to the child and his degree of economic support must be considered. However, states had some discretion in setting the rules and so cohabitation within AFDC could still be difficult to achieve in certain states.

In 1961 the Federal Government gave states the option of introducing the AFDC-Unemployed Parent (AFDC-UP) programme, which included two parent families where the primary earner was unable to find employment of over 100 hours per month. AFDC-UP was believed to encourage marriage, because a low-income couple might be financially better off if they married and claimed AFDC-UP rather than if they cohabitated and the woman received AFDC-Basic. It operated in approximately a half of States before 1990 and subsequently (as required by the Family Support Act 1988) in all states. The income and employment eligibility conditions for AFDC-UP were more stringent than for AFDC-Basic; for instance, the unemployed parent had to have a history of employment and both parents' income was counted.

Over time, the AFDC caseload has varied; it increased dramatically in the 1970s and gradually declined until 1982 when it stabilised before increasing rapidly again during the early 1990s and then declined (Moffitt, 2003:307-9). Nonetheless, there was a general decline in the real value of AFDC benefits from the late 60s to the early 1990s when there was a modest increase in value (Hoynes, 1997a:100-102; Moffitt, 1998b:60 and 2003:307). For instance, real spending on AFDC fell from \$21.7m in 1984 to \$20.4m in 1996 (Meyer and Rosenbaum, 2000:1036). Yet over the same period the caseload increased from 10.9m to 12.6m; a 15 per cent increase.

The Omnibus Budget Reconciliation Act 1981 allowed states to waive Federal AFDC rules and experiment with different forms of provision. Between 1993 and 1995 approximately a half of states implemented some sort of waiver programme (Bitler *et al.*, 2004:216). Two policy areas directly relevant to this review are demonstration projects with 'family caps' and AFDC-UP (Maynard *et al.*, 1998:139-140). In 1992, New Jersey was the first state to experiment with not increasing AFDC benefits when recipients had additional children after ten months of claiming benefit (the 'family cap'). Family caps became a feature of several AFDC waiver and TANF programmes (Maynard *et al.*, 1998:141-146). Waivers for AFDC-UP could relax the eligibility criteria on two-parent families, such as the rule that the principle wage earner had to work for less than 100 hours per month (Maynard *et al.*, 1998:146-150). In general, however, State waiver programmes did not concentrate on family formation, but on getting recipients into employment (Fein *et al.*, 2002:1).

All AFDC recipients (and, later on, TANF participants) were eligible for Food Stamps and Medicaid (Moffitt, 2003:295). The Food Stamp programme involves awarding food coupons to low-income households that are redeemable for food items, and Medicaid provides subsidised medical care to low-income families. For those people that are eligible, Food Stamps are paid irrespective of family structure.⁸ In calculating the amount of AFDC benefit, Food Stamp benefits as well as EITC (see ahead) and housing subsidies were, generally, excluded.⁹

Critically for the US research reported here AFDC benefits were set at state level, and there was a high variation between states; there was a sixfold difference between the most and least generous (Hoynes, 1997a:90; Moffitt, 2003:293). This variation has been used in studies to consider the impact of AFDC on family structures.

TANF

TANF, which was introduced by the Personal Responsibility and Work Reconciliation Act (PRWORA), replaced AFDC and AFDC-UP in 1996. Concerns that AFDC might have encouraged single mother families were reflected in the objectives of TANF, which included preventing and reducing non-marital births and teen pregnancies and births, and promoting the formation and maintenance of two-parent families as well as encouraging moves into employment (Burstein, 2007:412; Maynard *et al.*, 1998:134). Implicit in TANF is the assumption that financial incentives can be used to influence attitudes towards family structure and so change actual behaviour (Mauldon *et al.*, 2002:6). Indeed, underpinning the programme is a belief that marriage is an exit route from welfare and poverty (Bitler *et al.*, 2004:213). Although states could impose family caps and extend support to two-parent families as well as require that teenage single mothers in receipt of TANF live with their parents and stay in school (see ahead), there were few provisions in the legislation directly linked to its family-related objectives (Moffitt, 2003:307) and few states have taken substantial steps to change demographic behaviour (Fein *et al.*, 2002:1).

The programme has four key features. First, it is a workfare programme – parents' receipt of benefit is linked to undertaking activities to gain paid work.¹⁰ Secondly, TANF established lifetime time limits (up to five years) for the receipt of Federal

⁸ Eligibility for Food Stamps is based on the 'assistance unit' and a cohabitating couple that shares and prepares food together would, like a married couple, be eligible for benefits (Acs and Maag, 2005:5).

⁹ How EITC interacts with AFDC and TANF has changed over time, at times it has been counted as income, but at other times it has been disregarded (see Meyer and Rosenbaum, 2000:1032). However, since January 1991 it has mainly been disregarded in means-tested programmes. Nonetheless, the Food Stamp programme counted AFDC benefits as income.

¹⁰ Post-1981 workfare-type demonstration projects were also a feature of some states with AFDC waivers.

funds by families (although 20 per cent of the state caseload was exempt from this provision). Thirdly, aspects of the design of the programme and its financing, via block grants, were devolved to state level. As with AFDC, states were free to set their own benefit levels; however, benefits could be in cash and/or in-kind services (such as childcare) (Moffitt, 2003:311). As a consequence there are substantial differences in welfare programmes across the US (Schoeni and Blank, 2000:8) and the magnitude of any TANF effect on family structure will vary. Fourthly, as States could serve two-parent families based on their income, TANF removed the AFDC disincentives '*against either living with or marrying the children's father, or against marrying rather than living with another man.*' (Burstein, 2007:412). The expansion of benefits to two-parent families under TANF (and previously some state waiver reforms) is '*...the only aspect of welfare reform that directly affects the incentive to marry.*' (Bitler *et al.*, 2004:216). However, for the women to be eligible for benefits the husbands' earnings must be low and this might make the men unattractive as potential spouses. Thus the extension of benefits to two-parent families might not have provided an incentive for women to marry. Although for women who were already married, it might have removed an incentive to divorce and become single in order to be eligible for benefit, something that might have been the case under the previous system.

Eligibility for TANF, like AFDC, does not depend upon marital status, but on family living arrangements. In general, adults unrelated to the TANF unit are assumed not to contribute to it financially, even if they are cohabiting. Related partners, that is, married couples and cohabiting biological fathers, are assumed to contribute to the household. In general, this can generate some complex outcomes (Alm *et al.*, 1999:196):

- a single mother marrying the father of her children who was not previously living with her and who was in low paid work may lose some or all of her benefit, because of her husband's earnings;
- a single mother marrying the father of her children who was not previously living with her and who was unemployed may retain some or all of her benefit, because two-parent families may be eligible for TANF;
- a single mother who marries someone unrelated to her children who is in employment may lose some or all of her benefit regardless of the previous living arrangements, because of her husband's earnings;
- a single mother marrying the father of her children who was previously living with her will not lose any TANF because his earnings would already have been taken into account in the TANF calculation.

The focus of welfare reform in the US was to increase work incentives and the changes have been accompanied by an increase in employment by women (Bitler *et al.*, 2004:216). In real terms, expenditure on TANF has fallen as caseloads have reduced (Moffitt, 2003:307-8).

The Deficit Reduction Act 2005, signed by President Bush in February 2006, reauthorised TANF and also provided funding for marriage and relationship education programmes to promote *'healthy marriages'*.

EITC

EITC, which was introduced in 1975, is an in-work refundable tax credit paid to low-income households.¹¹ In terms of caseload and expenditure EITC expanded rapidly, especially during the mid-1980s and 1990s.¹² In real terms, the value of EITC increased more than ten-fold between 1984 and 1996 (Meyer and Rosenbaum (2000:1027). Currently, EITC is the largest cash assistance programme in the US (Acs and Maag, 2005:2; Ellwood, 2000a:189). It is a large part of the 'package' that (along with a decline in benefits) has increased work incentives for single parents (Ellwood, 2000a:190-193).

The majority of the credits are received by single parents (Meyer and Rosenbaum, 2000:1030), although it is also available to married taxpayers. Since January 1991, the credit has been larger for taxpayers with two or more children than for those with one child (Hotz and Scholz 2003:146-151). In 1994, a small credit was introduced for childless low-income taxpayers aged between 24 and 65.

To complement the Federal EITC, states can operate their own schemes. The states' EITCs are calculated as a percentage of the Federal EITC and the credit is refundable in most but not all states. EITC is administered through the Federal (and in some cases the state) tax system and is usually paid once a year in the form of a tax refund or adjustment to tax liabilities.

Eligibility is based on the earnings of the 'tax filing unit', and marital status determines who is included in the tax unit. Whilst married couples must file a joint return, unmarried individuals can file either head of household returns (if they have qualifying children) or single returns (if they have no qualifying children). The credit is based on annual family income, not wages.

A non-refundable Federal child tax credit was also introduced in 1998 (Ellwood, 2000b:1064).

1.5 Theoretical perspectives and empirical observations

Much of the research reviewed here is informed by economic theory that sees the decision to marry, cohabit or have children as being influenced by financial incentives and disincentives. However, evidence suggests that other factors are influential. For example, Ono (2001, cited in Harknett and Gennettian, 2003:456) argues that the gendered nature of work affects how a woman's economic

¹¹ Refundable means that if the household's credit is greater than its tax liability the difference is paid to the tax filer by the Treasury.

¹² Ventry (2000) provides a political history of the growth of EITC.

circumstances influence marriage decisions, whilst Wu and Balakrishan (1992) (cited in Harknett and Gennetian, 2003:456) show that attitudes towards marriage have a mediating role on structural variables, such as employment.

This section begins by outlining a heuristic framework for considering the possible links between welfare systems and family structure. It then outlines some of the theoretical debates on the factors influencing demographic behaviour and draws upon supporting empirical sources as appropriate.

1.5.1 Understanding welfare systems and family structure

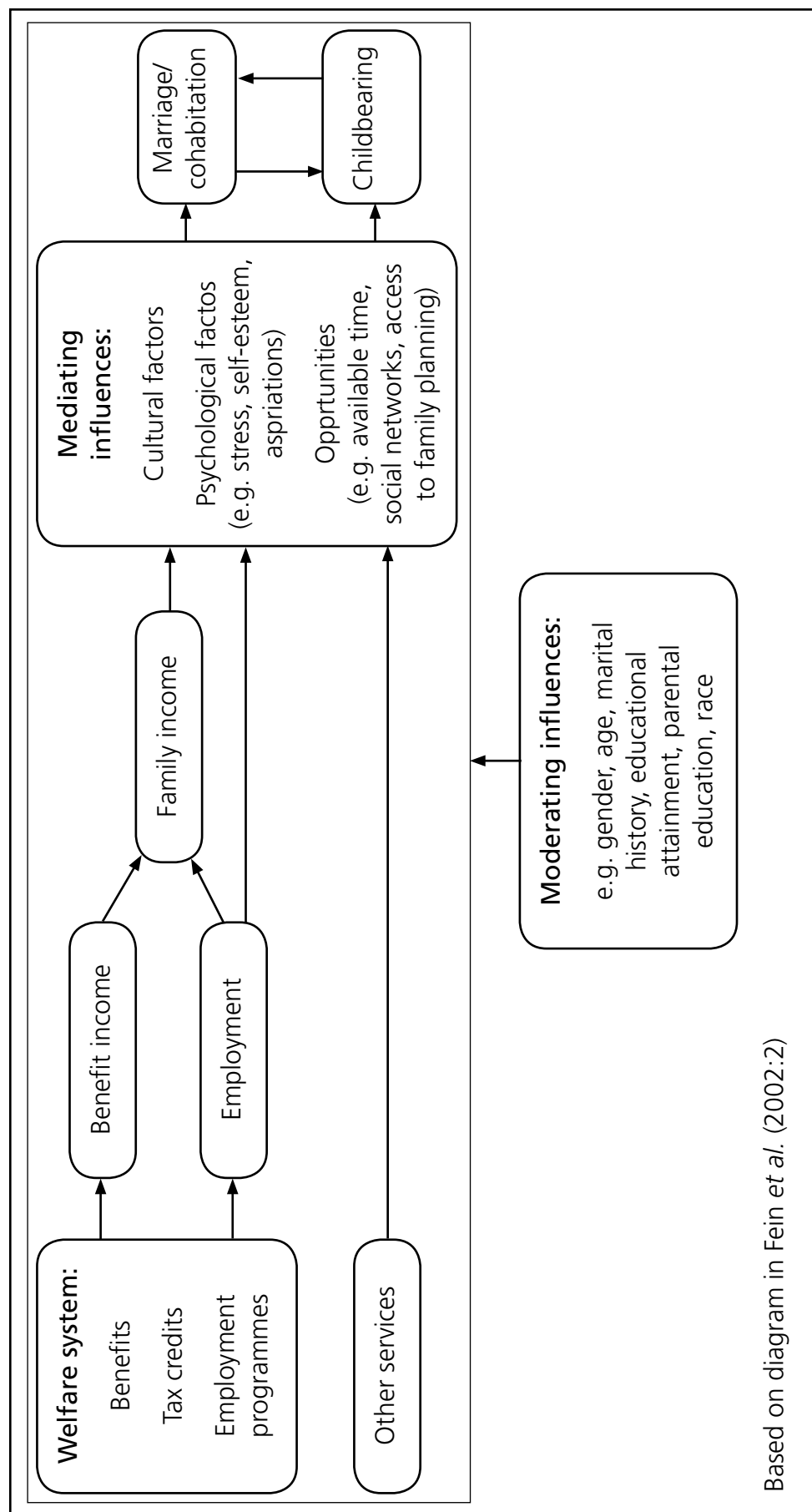
A wide range of factors influence demographic decision-making. Conceptually, the welfare system can be depicted as affecting family structure through its impact on employment and family income (see Figure 1.1) (Fein *et al.*, 2002). To the extent that the welfare system affects family income then it influences the direct financial costs and benefits that people consider when making partnership and childbearing decisions. So, for instance, for single women entering employment the welfare system may increase union formation by eliminating the marriage penalty (or disincentive) previously associated with being on benefits. On the other hand, entering employment may reduce marriage because it enhances women's financial independence. (These possible mechanisms are discussed further ahead.) In some instances the benefit may directly target demographic behaviour, for instance, in the US, TANF payments can be capped when recipients have additional children (known as the 'family cap').

In addition, there may be other non-financial factors arising from the welfare system's effect on employment that affect demographic behaviour. For example, union formation may increase because gaining work improves a woman's self-confidence, self-esteem or widens her social network which then includes more potential partners. However, it may also mean she has less time to search for a partner or to socialise or even for childbearing, so marriage or cohabitation is less likely to occur. (These factors, may, of course, also affect men.)

Whether and how employment and family income affect demographic behaviour will be mediated by individual and cultural factors – and as such they help explain, or clarify the nature of, the relationship between the variables. There are also moderating individual factors that will affect the direction and strength of the relationship between the variables.

Exploring the relationships between these numerous variables is further complicated by decisions on marital status, childbearing and employment being inter-linked (or joint) rather than independent events. Failure to take the interaction between these processes into account will lead to biased estimates in empirical models (Aassve *et al.*, 2006:781-782).

Figure 1.1 Heuristic model for how the welfare system might influence family structure



1.5.2 Marriage and welfare systems

Becker's household production theory of marital formation and dissolution (for instance, Becker (1981)) is very influential in the studies reviewed here. His theory posits that women will choose marriage when its economic benefits exceed the economic benefits of being outside of marriage – that is, people marry to increase their material well-being (that is, to maximise their utility). The relative economic opportunities available both inside and outside of marriage are seen to influence the decision to marry. Marriage is seen as beneficial where there is specialisation between partners – one engages in paid work and the other in home production. Gains in efficiency – through one being employed and earning and the other engaged in household production – allow both to have more leisure time and a higher standard of living when married than when single. Specialisation leads to the prediction that higher-wage women will marry lower-wage men, and vice versa (Burstein, 2007:390). In this way, efficiency is maximised because the relative abilities of each partner, their comparative advantages, differ the most. However, if the wages for males and females converge and/or partners secure similar non-monetary gains from employment or childrearing then the benefits from specialisation and so the gains from marriage decline (Ellwood and Jencks, 2004:14).

However, the notion that material gains only accrue from specialisation has been challenged. Lam (1988 cited in Burstein, 2007:390) argues that sharing 'public goods' (for instance, housing and the benefits of having children) is another source of material gain within marriage. Contrary to Becker's theory these gains may lead to women and men with similar wages marrying. Oppenheimer (1997 cited in Burstein, 2007:391) argues that specialisation is a risky strategy due to possible job loss or desertion. She maintains that couples can maximise their material gains if they both work (full-time) and buy-in household services. Weiss (1997 cited in Burstein, 2007:391) highlights other sources of material gain in marriage: economies of scale from a larger household and that whilst one partner works the other can undertake education and training (that is, invest in human capital). Indeed, economies of scale, in terms of resources and time, provide a '*powerful incentive*' (Ribar, 2003:6) for individuals to join together in a single household and share resources.

Traditional economic theory implies that for women there is a choice between being married and being single and the decision is influenced by the woman's wages, the wages of potential partners, and benefits and tax credits as well as other observable and unobservable factors (Dickert-Conlin and Houser, 1999:4). However, the effect of earnings on the decision to marry or cohabit is ambiguous. Females with higher earnings or good employment records are **more** likely to marry or cohabit because they are attractive as potential partners, but equally they are **less** likely to marry or cohabit because they have the financial independence to do so (the 'independence effect'). The former implies that marriage is a 'normal good' – as opposed to an 'inferior good' where consumption falls as income increases – and the correlation between wages and prevalence of single motherhood is

negative. The latter implies that with rising female labour participation rates and higher real wages the economic or 'opportunity cost' of remaining single (or getting divorced) has fallen.

Studies that have sought to investigate the association between women's employment and marriage have had mixed results, finding both positive and negative effects (Burstein, 2007:405; Harknett and Gennetian, 2003:457). More recent studies suggest that women – like men – are more likely to marry the more they earn (Gassman-Pines and Yoshikawa, 2006:12-13). Yet studies have tended not to consider the distinction between deciding not to marry and marrying later on in life (Burstein, 2007:405-406). The independence hypothesis does not help to explain why women with higher incomes might choose to marry later on, say, after they have established their careers.

A related idea is the 'marriage market' – as expressed by the ratio of men to women. Geographically, the number of marriageable men and women may be constrained and out of balance. The reason why some low-income single women do not marry has been attributed to the lack of marriageable men within a locality (Burstein, 2007:396). Here marriageable men may be seen as those with steady earnings from employment – a view associated with the sociologist William Julius Wilson. In some communities in the US the availability of marriageable men may be reduced by unemployment, imprisonment or premature death (due to gang violence) (Roberts, 2007:4) or long-term severe socio-economic disadvantages (Geronimus, 1997:415). However, simply dividing people into marriageable and unmarried may be too crude a distinction, especially as what someone looks for in a potential partner may change over time and some individuals may restrict their preferences for non-economic reasons, such as not considering people from a different ethnic community. In addition, falls in marriage rates have also been observed for 'marriageable men', such as those with higher levels of education (Del Bono, 2004:3; see also Lichter *et al.*, 1997:115). Indeed, high-earning African American males, who due to their incomes could be regarded as 'marriageable', have lower marriage rates than white Americans.

Moreover, in a marriage market where there is a scarcity of marriageable men, the marriageable men may use their relative scarcity to avoid marriage. Not surprisingly some studies find that the marriage market is not significant in accounting for marriage or cohabitation (see Eissa and Hoynes, 2000b:15).

Nevertheless, there is empirical evidence from the US that increasing men's employment does increase rates of marriage (Burstein, 2007:389; Bitler *et al.*, 2004:215). The related theory is that falls in levels of male unskilled employment and wage levels have created imbalances in marriage markets, especially amongst African Americans. However, Edin (2002) claims that whilst this view is persuasive, the fall in US marriages is greater than the theory would imply (see also Gennetian and Knox, 2003:9). Moreover, if in the US the fall in marriage rates amongst African American single mothers is due to increased unemployment amongst African American males, then welfare programmes that increase female employment

and earnings may not have large effects on marriage rates, indeed they might accelerate the decline in marriages (Gennetian and Knox, 2003:10).

The impact that the welfare system has on marriage is theoretically ambiguous. Some writers have used Becker's theory to suggest that increases in benefits and tax credits will **decrease** the chances of marriage. Tax credits and benefits are seen to influence behaviour because of the loss of income (the marriage penalty) a woman would incur being married compared to being single. Similarly, the emphasis on obtaining paid work in welfare systems might mean that greater financial independence for women leads to less marriage (the 'independence effect' (see previously)). However, the increasing emphasis in welfare systems on conditionality and work requirements might mean that remaining on benefit is less attractive and leads to **more** marriage. In the US, there is some evidence that women are less likely to enter marriage unless they have sufficient bargaining power in the form of their own income or self-sufficiency (Gennetian and Millar, 2004:279). This implies that increases in employment/earnings will promote marriage. Indeed, men may prefer to marry women who are financially independent. So, in practice, it is difficult to predict how increases or decreases in benefits and tax credits will affect marriage (and cohabitation). Moreover, the theory is unable to give clear predictions of the magnitude of the effect of the welfare system on marriage; it might be large or small.

Furthermore, it is possible that the economic factors influencing union formation and dissolution through the welfare system operate differently for low-income and high income groups (Burstein, 2007:389). This is because: benefits might have a larger impact upon individuals with lower incomes compared to the effect that tax credits have on people with 'higher' incomes; employment programmes usually increase the employment prospects and so the earnings of lower income males rather than those of better-off males (who tend to be in full employment); and for low-income women the benefits of employment in order to improve union stability (reduced financial pressures) may not exceed the costs (less leisure time) because their work is often poorly paid. Thus, indicators of (potential) income, such as educational attainment, may be used in empirical studies to explore associations between tax and transfer payments and family structure to see if economic mechanisms vary between disadvantaged and non-disadvantaged groups.

There is empirical research that shows that decisions to marry (or divorce) are not simply affected by the tax and transfer systems. Other factors that appear to influence such decisions include:

- Characteristics that affect the suitability of a person as a potential spouse (Carasso and Steuerle, 2005:161), including drug and alcohol abuse, mental health conditions (such as depression), fear of divorce and experience of domestic violence (Roberts, 2007:4-5). Men and women with low-incomes may have less access to services that help them to address these issues than people with higher incomes and so, it is argued, they avoid people with these characteristics.

- A related point is the degree of trust that can be placed in a potential partner. Changes in gender roles mean that women may be less willing to tolerate 'bad' behaviour by men (Ellwood and Jencks, 2004:20). For women this can be with respect to a male's sexual faithfulness, money management skills and the nature of his interactions with her children (Edin, 2002; Carasso and Steuerle, 2005:161). For some the level of risk might mean avoiding marriage and for others delaying marriage in order to observe and assess a potential spouse's behaviour.
- A potential spouse's suitability as a parent (Carasso and Steuerle, 2005:161). For single mothers this may in turn be influenced by the number and age(s) of her child(ren). In the US separated women with no children are more likely to remarry than women with three or more children (Bumpass *et al.*, 1990 cited in Gennetian and Knox, 2003:11). This might be because some men are unwilling to take on the additional responsibilities associated with marrying a woman with children, especially if he is not the biological father. Or he may be concerned about the effect of the marriage on any children he already has and he may have ongoing financial commitments to these children (Roberts, 2008:4). Unmarried mothers may also be worried about the effect that a marriage may have on her existing children, especially if she expects they will respond negatively (Roberts, 2008:3-4).
- The family context, in terms of parental education and the family's religion (Plotnick, 2004:7).
- For single people there is a possible cost of marriage in terms of forgoing possible gains from any investment in human capital (Plotnick, 2004:8). Thus higher levels of education can lead to delayed union formation (Aassve *et al.*, 2006:795).
- The desire for a fulfilling relationship (Carasso and Steuerle, 2005:161), and young people's expectations and desires about marriage (Plotnick, 2004). More recent cohorts are more likely to endorse gender equality and increasingly women expect to have an equal say in family decisions (Ellwood and Jencks, 2004:20-21). The level of autonomy or control desired by single women may convince them that they do not wish to become dependent upon men and that they want to live alone (Edin, 2002; Gennetian and Knox, 2003:8). Or it may mean that women postpone marriage until their children are in school when they could then enter employment and through making a financial contribution to the household be entitled to have a say in family decision-making. In any event in the UK younger cohorts have a lower rate of union formation (marriage and cohabitation) than older cohorts (Aassve *et al.*, 2006:795).

- Having financial stability in order to minimise the stress that would otherwise characterise low-income households (Edin, 2002). Low-income mothers have to worry about money because they have so little, and erratic financial contributions from males can mean that couples separate or do not marry. In the US low-income mothers can impose a 'pay and stay' rule – if male partners are out of work and not making a financial contribution to the household they can lose their right to co-reside.
- Wider socio-cultural norms about the need for substantial assets and income prior to marriage (Burstein, 2007:396).
- Individuals in the UK with a limiting long-term health condition have been less likely to establish a first or subsequent relationship than those without a health condition (Clarke and McKay, 2008).
- Race and ethnicity (see previously).
- Educational attainment which in turn will affect potential earnings (see previously).

There are other approaches to family formation and dissolution in the economics literature (see Bergstrom, 1996). For instance, cooperative and non-cooperative bargaining models, which build upon game theory, acknowledge that the members of a 'family unit' may have different objectives (Bergstrom, 1996:1924- 1930; Ribar, 2003:6). Thus how married and unmarried parents respond to financial incentives in the welfare system may differ.

1.5.3 Cohabitation and welfare systems

Many of the economic factors promoting marriage also favour cohabitation. Indeed, for low-income groups the benefits of marriage over cohabitation may be small, as the latter can provide some of the benefits of marriage such as companionship and economies of scale in household production. Cohabitation can be conceptualised as a substitute for marriage or as a complement to marriage (see Moffitt *et al.*, 1998:260). If it complements marriage, cohabitation can be seen as a precursor to marriage. Partners can use this trial period to gather information on the suitability and quality of the union. Cohabitation may also be attractive for single mothers as it provides a degree of flexibility during periods of financial instability and uncertainty (Edin and Lein, 1997) cited in Harknett and Gennetian, 2003:458). However, cohabitation is not necessarily a perfect substitute for marriage (Gassman-Pines and Yoshikawa, 2006:12; Moffitt *et al.*, 1998:260):

- It is not a good predictor of a successful marriage; in many countries former cohabiters have higher rates of divorce than non-cohabiters (Svarer, 2004).¹³ Indeed, some cohabiters claim they have no intention of marrying their partner.
- What is distinctive about marriage is a commitment that is backed with some legal rights and its contractual nature may reduce risks and encourage investment in human capital (Burstein, 2007:391).
- Some people give reasons for cohabitating, for example, sharing household expenses, that imply the arrangement is not a trial for marriage.
- Cohabiting unions may be less stable than married unions (see ahead and Section 1.4).

According to economic theory, to the extent that benefits are reduced by taking into account the additional income of a partner then there is a disincentive to cohabit. However, some argue that single parents may have an incentive to cohabit rather than marry if it is possible to conceal the additional income from a partner from the authorities.

Financial considerations can be an important consideration for cohabiters when deciding whether to marry (Smock *et al.*, 2005). Specifically, male earnings, occupation and educational level are positively associated with transitions from cohabitation into marriage. In the UK union formation is influenced by male economic opportunities. Male unemployment is negatively associated with union formation – high levels of unemployment restrict women’s partnership options. The influence of women’s earnings and employment is more ambiguous. Qualitative research (conducted in the US) suggests that the main economic issues that can affect the transition from cohabitation to marriage are (Smock *et al.*, 2005:687-692):

- ‘*having enough money*’ – marriage requires a certain level of financial stability, cohabitating couples are unlikely to marry if they are struggling financially;
- being able to pay for a ‘real’ wedding – the cost of a wedding can be an impediment to marriage;
- having achieved a set of financial goals before the marriage, for example, buying a house or a car and completing education;
- whether the male partner earns enough to be an economic provider; and
- lacking money can lead to stress and relationship conflict which in turn adversely affect the quality of relationships.

¹³ This is not a universal finding – Denmark is an exception, where cohabiters have a lower risk of marital dissolution, possibly because there is little social stigma associated with cohabitation couples are able to use it as a ‘trial’ for marriage (Svarer, 2004:533).

A cohort analysis of British single parents over the period 1991 to 2001 shows that the 1991 lone parents who were married or cohabitating by 2001 tended to be (Marsh and Vegeris, 2004:35-37):

- younger (and age had the largest effect controlling for other factors);
- those in 1991 who had been never partnered or who had been married were more likely to be married by 2001 than those who left a cohabitating relationship in 1991;
- those with a new child since 1991; and
- those working 16 hours or more a week in 2001.

Moreover, the factor that influenced whether they married rather than cohabited was whether the 1991 single parent had a new child. Getting a new partner (and paid work) was often associated with being on an *'upward and improving path'* (Marsh and Vegeris, 2004). Many became dual-earner families, although for younger single parents entering a new union could be accompanied by having a baby and a temporary exit from employment.

Union formation (marriage and cohabitation) in the UK can be influenced by the birth of a child, specifically birth order:

'...experiencing a first birth has a strong positive effect on forming a union, and this is so for both genders. However, having a second birth outside a union actually lowers the rate of union formation. The positive effect of the first birth event is consistent with economic theory, in that individuals consider a cohabiting union or a marriage to be more beneficial once they have acquired marital-specific capital. However, there might also be normative forces at play, in the sense that individuals might feel a pressure to 'legitimize' the child. The negative sign of the second birth event indicates that those who do not form a union after the first birth are at a disadvantage in the marriage market when they have the second child. There might also be a selection effect here: individuals who are willing to have one child outside a union might be more willing to repeat the experience. The subsequent birth events have no significant effect on union formation.'

(Aassve et al. (2006:796))

1.5.4 Union dissolution and welfare systems

The Beckerian model of marriage is also influential within the literature on separation and divorce. It posits that people divorce/separate when the benefits minus costs of becoming single exceed those of remaining married/cohabitating.

Some argue that welfare benefits contribute to divorce – fathers are seen as prepared to leave their spouses (and children) knowing that the State will provide adequate financial support (Zimmerman, 1991:139). Indeed, it is claimed that women might agree to this arrangement since it provides them with enhanced

economic security and stability. However, research shows that there is a wide range of other factors that influence divorce/separation (and union) decisions including (Dickert-Conlin, 1999; Harknett and Gennetian, 2003):

- The earnings potential of the spouses (Ono, 1998): There is some evidence that women's employment and earnings increase marital stability, although other studies show a decrease (Burstein, 2007:407). Indeed, the outcome is theoretically ambiguous, see Ono, 1998:
 - 'the stability effect' posits that if the spouse has a high earnings potential this will make the person more attractive as a partner and/or by reducing financial hardships lessens the likelihood of relationship conflict and so reduces the risk of separation. Unions where the male is in full-time employment and/or has high earnings are more stable because the couple have a higher standard of living (Burstein, 2007:404) – known as the husband's income hypothesis (Ono, 1998). Similarly, increases in women's earnings may reduce levels of financial distress and so reduce the risk of dissolution; but
 - 'the independence effect' suggests that a person with high earnings is less in need of a partner and hence if already in a partnership separation is more likely. Typically, this independence effect is seen as applying to women – a wife's resources are positively related to marital dissolution. Any increase in the wife's resources must, however, be sufficient for her to live separately from her husband (Ono, 1998:686). Alternatively, employment can increase the stress on partners and impose time constraints, which in turn increase the likelihood of union dissolution.
- Presence of children may reduce the likelihood of separation because they represent an emotional and time investment in a marriage. However, in households with young children and mothers with specific impairments (for instance, depression) there is a higher risk of union dissolution (Clarke and McKay, 2008). Moreover, two-parent families with a disabled child aged one to two years are at greater risk of becoming single parent households.
- The duration of the marriage: Those married for longer are less likely to separate.
- Age at marriage: Women who marry early are more likely to separate from their husbands.
- In the UK younger cohorts are more likely to dissolve a union than other cohorts (Aassve *et al.*, 2006:795).
- The presence and stability of an impairment: Households where adults have no impairment or where the experience of the impairment was stable are less likely to dissolve their union (Clarke and McKay, 2008).
- The existence of a prenuptial agreement may affect the likelihood of a divorce, although there is disagreement as to whether it increases or decreases the likelihood of marital dissolution (Rainer, 2007:338).

- The liberalisation of divorce laws is seen by some as making divorce easier (Rainer, 2007).
- Educational attainment: however, in the UK there is no evidence that level of education has an effect on union dissolution (Aassve *et al.*, 2006:795).

1.5.5 Fertility and single motherhood and welfare systems

Decisions on fertility and single motherhood are complex decisions influenced by a wide range of cultural, economic, legal, political, social and religious factors (Kearney, 2004: 296; Maynard *et al.*, 1998:152-153). However, the nature of the interaction between the various factors is still not fully understood.

The view that there is a systematic interplay between economic considerations and fertility dates back to Malthus (1798, cited by Clarke and Strauss (1998)). The classical theory of population was summarised by Blaug (1978):

'...the production of children, [is] not a means of spending income on 'consumer goods' to acquire satisfaction, but as a method of investment in 'capital goods' for the sake of a future return.'

(Blaug, (1978:78, cited by Clarke and Strauss, 1998))

The work of Becker is, again, influential in the literature with decisions on single parenthood and childbearing seen as being affected by the benefits and costs of the options available to women. The underlying economic model assumes that marriage will immediately lead to parenthood (Ellwood and Jencks, 2004:14), with children regarded as consumption rather than investment goods (Clarke and Strauss, 1998). A basic economic model of fertility would therefore predict that the opportunity cost of bearing and raising children affects parental decisions about starting families and increasing family size. Thus, an increase in family income would increase fertility, at least over short periods in which the cost of human capital does not change significantly (Baughman and Dickert-Conlin, 2007). However, Clarke and Strauss (1998) suggest that:

'...for individuals in poverty, various public cash and in-kind transfers create a series of economic incentives which...make the childbearing decision equivalent to the Malthusian analysis that children are income-producing assets as well as sources of utility. In the modern welfare state, it is the transfer system...that creates income-producing opportunities.'

((Clarke and Strauss, 1998:825)

Yet this 'traditional' economic model has relatively little to say about non-marital births and the 'decoupling' of marriage and parenthood (Ellwood and Jencks, 2004:19).

There are two broad approaches in the literature on the effects of economic factors on non-marital births (Del Bono, 2004:2). The first highlights the role of welfare systems in '*making single motherhood more economically attractive*' and is particularly associated with Charles Murray (1984). The second approach

focuses on men and women's economic opportunities, including the availability of marriageable men, and male and female unemployment and potential earnings.

The literature suggests that welfare benefits promote both single parenthood and non-marital births. So, for instance, benefits and tax credits could be expected to generate incentives for single childless women to have children, as entitlement may require having a dependent child. AFDC in particular has been seen as providing a financial incentive leading to a higher incidence of single parent families (Moffitt, 2003:332); although the welfare effect is complicated by the programme's eligibility rules which mean that AFDC '*...does not discourage marriage or cohabitation universally but only if it is with the male who is the children's actual father.*' (Moffitt, 2003:333). However, and as already noted in Section 1.4.3, the real value of AFDC declined during the 1970s and 1980s, when female headship rates were increasing, so undermining the argument that there is a simple connection between welfare benefits and single parenthood. Moreover, the impact of benefits on single parenthood is theoretically ambiguous. If marriage entry is voluntary and its dissolution a random event then AFDC is effectively a form of insurance that ought to encourage individuals to marry, as it reduces the risks to the woman relative to what they would have been in the absence of the benefit (Moffitt, 1998b:53 and 2003:332-333). In practice this 'insurance role' is unlikely to have a significant impact because many women become single mothers before marriage and the moral hazard problem is potentially large (that is, those in receipt of AFDC have an incentive to engage in behaviour that might lead to parenthood).

It is also posited that receipt of welfare benefits will lead women to have larger families than they might otherwise have (Presser and Salsberg, 1975:227; Gauthier and Hatzius, 1997:295-6). Indeed, that additional benefits for each dependant child reduces the direct and indirect costs to families of having children. (An alternative view is that benefits may alter the timing of childbearing – encouraging early entry to motherhood – but not family size.) It is this economic theory that has been used to justify the imposition of family caps (Maynard *et al.*, 1998:150). The cap increases the recipients' net economic cost of childbearing (by an amount equal to the benefit increase that previously would have been paid), and, *ceteris paribus*, ought to discourage extra childbearing. However, Maynard *et al.* (1998:151) argue that the effect of family caps on fertility is likely to be small. First, the resulting income changes were small both relative to the cost of having children and in absolute money terms. In addition, the reductions could be offset by increases in Food Stamps and housing subsidies; and access to Medicaid was unaffected by family caps. Secondly, non-economic factors were likely to be more influential on fertility decisions than economic incentives. Moreover, pregnancies can be unintentional, and by implication not susceptible to economic factors.

Other economic explanations focus on economic opportunities, notably male unemployment and employment. The notion of a marriage market is influential (see Section 1.6.2), and that in poor neighbourhoods (notably inner city areas) the increase in single mothers was due to a lack 'marriageable men'. Willis (1999)

argues that unmarried women are more likely to have children if there is an excess supply of women and the benefits of marriage are limited by available males having low-incomes. On the other hand, if there are marriageable men this can lead to increases in the marriage rate and the fertility rate, which in turn increases the pool of women at risk of becoming single mothers due to divorce and separation. Empirically, however, the marriage market thesis only accounts for a small part of the decline in marriage rates amongst African Americans (see previously and Del Bono, 2004:3).

Other writers have adopted a broader perspective and examined the affect of local labour market factors on cohabitation and childbearing decisions. These studies emphasise not only the influence of male employment and unemployment on female marriage and fertility rates, but also the opportunity cost to women of childbearing. The expectation is that increases in male employment within an area will lead to an increase in marriage rates, but a fall in fertility.

The effect of female wages on single parenthood is theoretically ambiguous. Improved economic opportunities for women, via higher incomes, could enable them to support their dependant children on their own (an 'independence effect'). However, higher female wages might discourage women from childbearing (a 'substitute effect'), because the perceived 'opportunity cost' of a birth is higher – women will have to forgo some potential earnings and will have less leisure time. It is also possible to argue that a lack of labour market opportunities may increase the attractiveness of single motherhood, because in these circumstances its perceived 'opportunity costs' are reduced.

In the UK, predicted female wages are negatively associated and male unemployment positively associated with non-marital childbearing (Del Bonon, 2004:11-14). That is, the better the economic prospects for women the lower the likelihood of non-marital births. Thus, women with higher levels of education or who are in employment have lower rates of childbearing (Aassve *et al.*, 2006:795-796). Similarly, college educated women in the US are more likely to delay childbearing than those with less schooling (Ellwood and Jencks, 2004:28). This might be because the former, faced with a satisfying alternative, choose to delay having children, or in order to maximise life-long earnings they have to invest in their careers early on and this necessitates delaying childbearing. These findings for predicted wages suggest that there is an opportunity cost to childbearing.

Other factors influencing fertility and single parenthood include:

- Cultural and social norms: For instance, in the US teenagers from immigrant families that are less well socially integrated into society hold more traditional views about non-marital childbearing (Plotnick, 2004:28).
- Being in a union: In the UK, having children is positively associated with being in a union (especially for men) (Aassve *et al.*, 2006:796). Moreover, for UK single parents having additional children is positively associated with having a new partner and being younger (aged under 30 years) (Marsh and Vegeris, 2004:41-43).

- Advances in reproductive technologies: Women have increased control over their reproductive choices and this, arguably, has led to behavioural changes and an increased tolerance for cohabitation (Ellwood and Jencks, 2004:25-26; Roberts, 2007:2).
- Levels of self-esteem and confidence: For young women, high levels of self-esteem are less likely to be associated with non-marital childbearing (Plotnick, 2004:9).
- Family background, including religious upbringing (Plotnick, 2004).
- Race and ethnicity (Plotnick, 2004).
- In the UK younger disabled adults (aged 20-34) were more likely to have dependent children than their peers (Clarke and McKay, 2008). However, older disabled people (past mid-30s) were less likely to have dependent children.

Some writers, especially in the US, have attributed the increase in single parenthood amongst low-income women to their values and attitudes. Indeed, nationally representative survey data shows that AFDC benefit recipients compared to other women have held statistically significant different familial values and attitudes towards marriage and childbearing ($p < 0.001$) (Mauldon *et al.*, 2002:2). However, Mauldon *et al.* (2002:2-3) argue that the differences between the two groups of women are small and can be attributed to factors other than welfare receipt. When controlling for demographic characteristics the difference for views on childbearing disappears. Suggesting:

'...that the reasons these women became single parents may have more to do with their social circumstances and economic conditions than with their fundamental preferences.'

(Mauldon *et al.* (2002:1))

Indeed, most female recipients at risk of further unmarried childbearing aspired to marriage (Mauldon *et al.*, 2002:3).

1.6 Methodological issues

Within the reviewed literature there are three broad methodological strategies:

- non-experimental;
- experimental, and
- quasi-experimental.

In terms of the volume of evidence there are considerably more published analyses using non-experimental methods.

1.6.1 Non-experimental methods

Within the non-experimental literature there is a further distinction between those

that seek to establish the magnitude of any welfare effect on family types, but do not explore whether actual behavioural changes as a consequence (referred to here as *scenario modelling*); and those that use empirical data to investigate the relationship between taxes and transfers and **actual** behavioural responses.

Scenario modelling

For the literature reviewed in this study, the *scenario modelling* approach is conducted only for estimating union/marriage bonuses and penalties. (A bonus (penalty) occurs when net income (from work and benefits) for a married/cohabitating couple is greater than (less than) for two single people.) Typically, studies adopting this approach find that there is a financial disincentive for single parents to marry – but (by definition) do not provide evidence of actual behavioural changes. Studies use either (a) ‘stylised’ or prototype families to estimate typical union bonuses or penalties, or (b) survey or administrative data to simulate outcomes. A weakness of using ‘stylised’ families is that they cannot do ‘*justice to the wide variation in family circumstances, and does not provide any guide to the relative importance of each effect.*’ (O’Donoghue and Sutherland, 1999:566).

Studies adopting this *scenario modelling* approach tend to impute union bonuses and penalties by ‘divorcing’ married couples, rather than ‘marrying’ single people, and calculate the difference between what they would receive in benefits/tax credits as married couples and as two unmarried individuals. As a consequence the studies may be better at estimating the potential marriage bonuses and penalties of those who have chosen to marry rather than remain single, as the latter may differ from the former in a number of important ways (for instance, in income and number of children).

Whichever approach is adopted, the comparator for estimating the bonus/penalty is unobserved, and the calculations are sensitive to the assumptions made about living arrangements and dependents (Eissa and Hoynes, 2000:690; Holtzblatt and Rebelein, 2000:1131). In calculating partnership bonuses and penalties researchers can, for instance, assume that benefit take-up is 100 per cent, and ignore housing benefits (see, for example, Ellwood (2000b: 1065-1068)). Critically, when ‘splitting’ married couples, the analysis tends to assume that the employment patterns and earnings of the now separated couple are unaffected. Yet people’s behaviour, including their labour supply, does often change following a divorce – the assumption of no change is essentially unrealistic (Burstein, 2007:410; Ellwood, 2000b:1089 – Anderberg (2007) and Rosenbaum (2000) provide examples of where these assumptions are relaxed). For this reason some analysts use longitudinal data in order to estimate incentives and disincentives following a change in marital status.

The estimates of marriage bonuses and penalties also tend to ignore the economies of scale from running one household rather than two.

Furthermore, the estimates tend to assume that people are aware of the incentive structures they face. However, benefit and tax systems can be relatively complex

with individuals having to estimate interactions between multiple benefits and tax credits. Something which the analysts' own models can have difficulty achieving. According to Ellwood (200b:1073) models often have problems capturing the administrative arrangements that interact with benefit and tax systems. For instance, the models do not allow for variations across states in, say, sanctions regimes or the requirements claimants must meet before they can register for benefit under TANF. This omission will bias the estimates obtained.

In addition, it is unlikely that partners '*re-optimize each period*', that is, re-determine their marital status each year. There are (fixed) costs for entering and leaving marriage that will constrain some people's ability to simply respond to financial incentives.

Moreover, the interpretation of the analysis is made more complex if incentives and disincentives do affect behaviour. For instance, if survey data are used to estimate union bonuses and penalties and the welfare system affected behaviour, then a sample of married couples (to be 'divorced' in the calculations) would over-represent families with large bonuses and under-represent those with large penalties (Hoffman and Seidman, 2003:87).

Empirical studies of demographic responses using non-experimental methods

In terms of the second *behavioural* non-experimental approach that focuses on actual behavioural responses to welfare systems, there is a sizable body of mainly US research that explores the impact of the benefit and tax system on family structure. These studies require that similar family types receive different levels of benefit and, in order to see if variations in welfare affect demographic behaviour, US researchers are able to take advantage of the variation in levels of benefit (AFDC and TANF) between states. Researchers have used the following non-experimental approaches to identify the impact of welfare benefits on demographic behaviour (Hoynes, 1997a:92-94; Moffitt, 1998b:57-59; Moffitt, 2003:336):

- Cross-sectional analyses of data for a point in time. Regression analysis is used to examine how, say, marriage or fertility varies by differences in the level of benefits between states, individual characteristics, and, less often, other state characteristics. However, the estimated impact of the welfare system will be biased if there are any omitted state factors from the dataset, such as social norms or religious characteristics, that are correlated with both family structure decisions or (through voter preferences) state welfare policy (Ellwood and Bane, 1985, cited in Hoynes, 1997a:91; Hoynes, 1997b:129; Moffitt, 1994; Ribar, 2003:1). This is addressed by the next approach.
- Analyses using pooled cross-sectional data or panel data for more than one point in time. Using these data with regression analyses, researchers can control for unobserved variables. Known as 'state fixed effect' models, they can be used to capture unobserved factors common to all residents of a state, such as State divorce laws or support services. Their advantage is that the analyst does

not have to specify exactly which variables are missing, only the structure of the omitted variable (Ribar, 2003:19). Most fixed effect models reviewed here are for US States, but they can be developed for other geographical areas – counties, regions or countries.

Compared to cross-section designs, the inclusion of area fixed effects can reduce the significance and magnitude, even the direction, of any welfare effect on family structure (see, for instance, Moffitt, 1994). For example, Lichter *et al.* (1997:126-128) report that a \$100 change in welfare payments is associated with 0.817 percentage point change in female headship when there are no controls for unobserved state level variables ($p < 0.01$). However, the inclusion of state fixed effects reduced this impact by more than 50 per cent to 0.392 percentage points ($p < 0.01$).

Models with State fixed effects also tend to include year fixed effects. These control for average changes in, say, marriage or divorce within a given year that are common to all areas (say, States).

- The use of panel data enables the identification of unobserved individual effects (Hoynes, 1997a:91). To the extent that studies do not control for individual effects, but only State effects, they may be biased through inter-State migration and sample attrition and entry. The individual effects models capture time-invariant unobserved variables at the level of the individual.
- Time series analyses have been used. However, a number of US researchers (for instance, Hoynes, 1997b:125-126) have observed that if financial incentives affect family formation then the observed fall in the real value of welfare benefits (especially in AFDC since the mid-1960s) should be associated with declines in female headship and non-marital births, but instead they have continued to increase. Suggesting that factors other than financial incentives are operating to influence demographic behaviour. Yet, controlling for all the possible factors that change over time is very difficult.

In summary, the main non-experimental methods used in the US seek to investigate whether there is a welfare effect on family structure by using variations in benefits between individuals within states, between states and between states over time (Hoynes, 1997b:124; Moffitt, 1998b:57). These non-experimental methods are discussed further in Appendix A. However, and not wishing to prejudge the review, it appears which source of variation and controls for unobserved heterogeneity are used affects the reported significance and magnitude of the welfare effect on demographic behaviour.

1.6.2 Experimental methods

There has been some use of social experiments to assess the impact of welfare reforms on family structure. Random assignment designs do overcome one of the potential problems with non-experimental methods – having to control for unobserved variables. Social experiments can also help to establish causation between variables (see Stafford, 2002).

However, social experiments may not be ideal for assessing welfare effects on family structure (Hoynes, 1997b:133; Moffitt, 2003:348; Maynard *et al.*, 1998:162-165). This is because the programmes to be tested have a wider impact on the community, possibly changing expectations and attitudes and thus the behaviour of the control group. This 'contamination' of the control group could bias the experimental results. (However, this might be overcome if the unit of analysis was the community. That is, if there was a random assignment of communities to those that received an intervention and those that did not, as opposed to the random assignment of individuals within a given community.)

Moreover, the designs of the demonstration projects tend not to isolate particular reforms so that impacts of specific measures on demographic behaviour can be identified (Maynard *et al.*, 1998:157-162). Instead packages of reforms are evaluated, making it difficult to determine the effects on demographic behaviour of particular programme elements. Camasso (2004:453) points out that a package of reforms is likely to have a greater impact than each of the components separately. Thus experiments '*...have not been very successful in isolating which broad components of reform...influence recipient outcomes*' (Camasso (2004:453); and see Moffitt and Ver Ploeg, 2001; US General Accounting Office, 2001). The challenge facing policy evaluators, according to Camasso (2004:454), is that, unlike some earlier programmes which introduced varying levels in phased implementations, more recent programmes have introduced components simultaneously to all recipients in the treatment group. According to Camasso, this has resulted in 'black box' evaluations which are only able to examine the impact of the bundle rather than its component parts (Camasso, 2004:454; and see Greenberg and Shroder, 1997; Wiseman, 1993). Fien (1994) has identified four strategies to evaluate 'reform bundles'; as summarised by Camasso (2004:453) these are:

- examine customer exposure to each provision separately;
- identify the unique goals of each component;
- conduct cross-state comparison where components differ between states; and
- design multiple treatment experiments.

The particular context of these experiments also means that their findings do not necessarily apply to other contexts – for example, that findings from low benefit areas apply to high benefit areas. Any findings from evaluations incorporating interventions that are meant to affect family structure tend to be site-specific and hence cannot be readily generalised to other geographic areas. In addition, even if the design was robust, the outcomes reviewed here – marriage, childbearing and divorce – could take several years to respond to policy interventions and so any experiment would have to be administered for a long period of time (Moffitt, 1998b:56).

1.6.3 Quasi-experimental methods

A number of studies also incorporate difference-in-difference designs; in particular UK studies use this approach to explore the impact of WFTC on demographic behaviour. These allow for impacts before and after a policy reform to be investigated. They involve comparing demographic outcomes for a group affected by a policy or programme with one unaffected by the intervention both before and after the change. The use of a comparison or control group means that unobserved variables that change over time are to some extent controlled for in the analysis.

One issue is the selection of an appropriate control group, for instance, single women without children are often used as the control for single parents. However, women without children may not be a good comparator – their trends in, say, union formation may be very different from women with children. Similarly, married women may not be a good comparator for single women, due to selection effects. Women who marry typically have lower earnings than those that do not and this might be because they would be at a relative disadvantage in the labour market and so '*...concentrate more of their efforts towards finding a spouse who likes work or has a comparative advantage in the labor market.*' (Rosenbaum, 2000:9).

Moreover, if the impacts of the welfare system on family structure are both positive for some groups of individuals but negative for others, then difference-in-difference may not capture these effects, because they are 'averaged out'. In addition, if the intervention being assessed is a 'package' of different proposals, difference-in-difference cannot precisely disentangle the effect of just one policy/programme.

1.6.4 Other methodological issues

Tax credits and benefits

In general, the studies reviewed here consider the impact of the benefit system or the tax system on family structure. However, the two systems for low-income families may interact and as a consequence estimates based on only benefits or only tax credits may be biased. Dickert-Conlin (1999:232) (see also Dickert-Conlin and Houser, 1998) looks at the impact of the US tax and transfer system on separation decisions and, following sensitivity analysis, finds that analysts ought to consider both as:

'...earlier work on the effect of taxes or transfers in isolation obtained results that were biased towards zero.'

Longitudinal data

In some instances, non-experimental and experimental studies use longitudinal data in the form of repeated cross-sections. However, analyses based on such data adopt a 'stock approach' through examining states at given points in time (Anderberg, 2007:21). An alternative approach is to use panel data, which allows a 'flow approach' whereby transitions into, say marriage, can be explored. The advantage of examining flows is that the stock might not be typical of, for instance, married women divorcing, as those becoming divorced are more likely to have been married for a shorter period of time than the stock of all married women.

Lags in response

Several studies seek to examine the association between current welfare provision and demographic outcomes. However, there may be a considerable lag between changes in transfer and tax programmes and demographic responses, especially if family-related decisions are influenced by social norms which might take time to evolve. The extent to which the literature takes into account this possible lag is limited (Hoynes, 1997b:126).

1.7 Structure of report

The next three chapters review in turn the impact of welfare systems on partnering, union dissolution and childbearing and single parenthood. Chapter 5 considers the implications of the reviewed literature for the UK and some conclusions are drawn in Chapter 6.

In Chapters 2, 3 and 4 some of the more 'technical' details about individual studies are placed in text boxes. Readers focusing on substantive findings can skip over these boxes, whilst those seeking more information about the data and analytical methods used should read the text boxes.

As the impacts of the welfare system on family structure are often reported in the literature to two decimal places the effects are expressed in subsequent chapters as numbers and not, as is customary in this report series for numbers under ten, in words.

2 Partnering

Summary

This chapter considers the evidence on whether, as some commentators argue, welfare systems discourage marriage. A union/marriage bonus (penalty) occurs when a couple receive more (or less) in benefit/tax payments than they would if they were single. For union/marriage bonuses or penalties to exist there are two pre-conditions: the unit of assessment is the family (rather than the individual) and different marginal tax rates apply at different income levels. Trade-offs in policy objectives mean that a benefit and '*...tax system cannot be simultaneously progressive, treat family as unit of taxation and be neutral with respect to marriage.*' (Hotz and Scholz, 2003:163).

United Kingdom

Two United Kingdom (UK) studies were reviewed. One study finds that single parents who were Family Credit (FC) recipients in 1991 were more likely to have found a partner by 2001 than were non-recipients. However, the second study reports that following the introduction of Working Families Tax Credit (WFTC), single parents were less likely (by 2.4 percentage points) to form a union than single childless women. This impact was more pronounced for women with younger children (two to three percentage points). The difference in the direction of the impacts might be because WFTC was more generous than FC. Effectively, WFTC may have reduced the opportunity cost of being a single parent.

Organisation for Economic Cooperation and Development

A study of the impact of social security (payroll) taxes for defined-benefit, Pay As You Go (PAYG) pension schemes on family formation across the Organisation for Economic Cooperation and Development (OECD) finds that social security payroll taxes slightly reduce net marriage rates. However, a number of simplifying assumptions are made which limit the usefulness of this analysis.

Continued

United States

Compared to the UK, there is a more extensive United States (US) literature; although it is focused on single parents. The US literature on the impact of welfare systems on union formation presents mixed findings – there are studies showing increases, decreases and no significant effects.

A review of earlier research by Moffitt (1998b) shows that some studies found a marriage penalty; a significant minority found no effect; but all those studies with statistically significant results show that Aid to Families with Dependent Children (AFDC) had a negative effect on marriage. His review, together with other research, also highlights that impacts in the US vary by race and gender.

Studies of US welfare reform (that is, AFDC waivers and Temporary Assistance for Needy Families (TANF)) using non-experimental approaches also report mixed findings, whilst a meta analysis of six experimental programmes reveals no consistent relationship between welfare programmes and union formation (Gennetian and Knox, 2003).

There is, however, limited evidence from the Minnesota Family Investment Program (MFIP) and New Hope projects that in the longer-term welfare systems may increase the stability of marriage.

The impact of Earned Income Tax Credit (EITC) on actual marriage decisions is small and statistically insignificant – there is no *'real evidence that EITC marriage penalties were reducing marriage.'* (Ellwood, 2000b:1100).

Canada

The Self-Sufficiency Project (SSP) (a wage supplementation programme) highlights the importance of local context. The programme was implemented in two culturally diverse provinces and found that it decreased the probability of being ever married or cohabitating in British Columbia by 2.5 percentage points (a 16 per cent fall); but increased the probability of being ever married or cohabitating in New Brunswick by 4.3 percentage points (a 22 per cent rise).

A second Canadian study on the removal of marriage penalties for surviving spouses in the pension system showed that remarriage rates for females aged under 65 and for males aged 45 to 59 increased significantly. However, there are outstanding queries about the quality of the data used.

Overall

The studies demonstrate that any welfare effect on union formation varies by sub-group and they can also be lagged. US and Canadian studies also highlight that findings vary by local context. Data problems also undermine the robustness of some studies.

Tentatively, this review finds that whilst there are some studies showing an effect on marriage/cohabitation, there is in general no strong evidence for a large and significant welfare effect on union formation – the evidence is inconclusive.

2.1 Introduction

Do welfare systems encourage or discourage marriage? Some UK commentators, for example, Campbell and Roberts (2002), Civitas (2002) and Morgan (2007) have – like many US researchers and policy makers – expressed the concern that there may be a ‘marriage penalty’ (as opposed to a ‘marriage bonus’) in the benefit and tax credit system. So, for instance, did WFTC provide an incentive for single mothers not to marry because of the ‘extra’ resources it provided to single parent families?

Ensuring that the welfare system does not, at least, penalise marriage may be a policy concern, not simply because policy makers might wish to promote ‘*healthy marriages*’ as an end in itself, but also because some argue that child outcomes are better in two-parent families (Roberts, 2007:3). Marriage may also have other benefits for partners, such as a lower incidence of health problems (see Arnato, 2007:952; Gassman-Pines and Yoshikawa, 2006:11). Indeed, given that the family income of married women is higher than that for single women, some see (stable) marriages as a route out of poverty for low-income single women (Morgan, 2007:35).

This chapter briefly discusses union/marriage bonuses and penalties, then considers the published evidence for whether welfare systems affect union formation decisions for the UK, see Section 2.2.1, across the OECD, see Section 2.2.2, the US, see Section 2.2.3 and Canada, see Section 2.2.4.

2.1.1 Union/marriage bonuses and penalties

Tax and transfer systems can generate union/marriage bonuses and penalties.¹⁴ In the tax system a marriage penalty or bonus arises when a change in marital status leads to a change in disposable income (Alm *et al.*, 1999:194; Carasso and Steuerle, 2005). A penalty occurs when net income (from work and/or benefits) for a couple is less than for two single people living apart. The penalty arises because the earnings of one spouse are taxed at a different rate because of marriage (Carasso and Steuerle, 2005:168). In general, marriage penalties are higher when couples’ earnings are similar; and lower when one earns significantly more than the other (Carasso and Steuerle, 2005:168; Hotz and Scholz, 2003:163). As Alm *et al.* (1999:195) note:

‘When people with similar earnings marry, their combined income pushes them into higher tax brackets than they face as singles, and they pay correspondingly higher income taxes with marriage. Conversely, the marriage of two people with very dissimilar earnings means that the individual with higher income moves into a lower marginal tax bracket as a result of the marriage, thereby reducing the combined tax burden of the two partners.’

¹⁴ The term ‘union/marriage bonus and penalty’ is used in this report rather than ‘cohabitation bonus and penalty’.

The tax system can also generate union/marriage bonuses - when a couple receive more in tax payments than they would if they were single. Bonuses tend to occur when partners have dissimilar earnings or only one partner is in paid work (Hotz and Scholz, 2003:163). The benefit system, like the tax system, generates union/marriage bonuses and penalties. The complexity of the tax and benefit systems mean that individuals can face both marriage bonuses and penalties (Carasso and Steuerle, 2005:158).

In principle, any tax or transfer scheme can generate union/marriage penalties and/or bonuses. Two pre-conditions are required: first, the unit of assessment for taxes or benefits must be the family (rather than the individual), and secondly, different marginal tax rates apply at different income levels. So, as Carasso and Steuerle observe:

'If graduated taxes were accommodated by individual filing or if all income and transfers were taxed at a flat rate, there would be no marriage penalties.'

Carasso and Steuerle (2005:157)

That is, the only way to avoid union bonuses and penalties is to have an individualised tax and benefit system or a proportional joint tax system (with no tax allowances) (Brewer, 2007:218). As a consequence a benefit and '*... tax system cannot be simultaneously progressive, treat family as unit of taxation and be neutral with respect to marriage.*' (Hotz and Scholz, 2003:163; see also Holtzblatt and Rebelein, 2000:1110). By treating families with the same income equally (so achieving horizontal equity) and having a progressive tax system it is impossible to be marriage neutral (Eissa and Hoynes, 2000b:2-4; Rosenbaum, 2000:3).

Varying tax rates and the withdrawal of benefit as income rises can combine to produce high effective marginal rates of taxation and so union/marriage penalties. (The effective marginal rates of taxation is the proportion of the next pound (or dollar) of income that is lost due to benefit withdrawal or payment of income tax and National (Social) Insurance.) Effective marginal rates of taxation can be higher for low- to moderate-income families compared to higher income households. For low-income households with one or more earners high effective marginal tax rates can be the result of the interaction of a number of tax and benefit programmes. High effective marginal tax rates arise when policy makers pursue two policy objectives: vertical redistribution of income (giving more tax and benefits to those on lower incomes) and containment of benefit programme costs (by restricting entitlement to low-income groups). Thus union/marriage penalties in the transfer system can arise, not because policy makers wish to penalise marriage, but as a consequence of targeting benefits (Alm *et al.*, 1999:198).

Union/marriage penalties and bonuses reside in the UK tax and transfer system. Although assessment in the personal income tax system is individually based, tax credits (like benefits) are assessed on joint income. Furthermore, whilst contribution tests for National Insurance benefits tend to be based on individual income (Adam *et al.*, 2002:16), the expansion of means-tested benefits means that there has been

an expansion in joint assessment. Union/marriage penalties can arise because a single parent already in receipt of Income Support (IS) or a tax credit can experience a fall in benefit or tax credits due to the extra income brought to the family by any new partner. Union/marriage penalties can be relatively large; in the UK many two-parent married couples needed a joint income of £50,000 per annum in 2004/05 to avoid any marriage penalty (Beighton and Draper, 2007:12).

In the UK, for out-of-work benefits and tax credits a cohabiting couple will generally receive a lower income transfer payment if they declare they are living together than if they claim to live separately. This is because (Brewer and Shaw, 2006:9):

- out-of-work benefits and tax credits are assessed on the joint income of a couple; and
- entitlement to tax credits is based on the joint income of a family and not the number of adults in a family.

The main exceptions to this union/marriage penalty are as follows (Brewer and Shaw, 2006:9):

- couples claiming tax credits and the secondary carer has no income – here it would not matter if the family claimed as a couple or as a single parent;
- couples with a joint income of less than £50,000 claiming tax credits and the primary carer has an income high enough to only have entitlement to the family element of CTC if s/he were to claim tax credits as a single parent;
- couples where the primary carer has an income in excess of £58,000 as they would have no entitlement to tax credits even if they claimed as a single parent; and
- couples claiming out-of-work benefits where the secondary carer has a low-income (less than £31.95 per week) or is in receipt of disability benefits.

FC and WFTC generated union/marriage bonuses and penalties because they were only available to families with children, see Section 1.4.2 for further details. The typical case for a partnership bonus was when the woman was not working and the man worked for a low wage (see first bullet above). This is because under FC and WFTC neither the woman nor the man were likely to be eligible for the credit if they separated; the woman because she was unlikely to work for 16 or more hours per week, and the man because he was unlikely to be the primary carer. In couples where the woman already worked full-time (more than 30 hours per week) the couple would never receive a tax credit partnership bonus, because the presence of the male could never increase their tax credit award. Under FC and WFTC a partnership penalty was likely if the woman in a couple was the primary carer and worked for 16 hours or more per week (and consequently could receive the credit as a single parent) but they received a smaller credit as a couple due to the joint income test.

For WTC/CTC there are similar partnership bonuses and penalties (Anderberg *et al.*, 2008:5). In addition, childless couples face bonuses and penalties. Further details of partnership bonuses and penalties in UK tax credits and out-of-work benefits are provided in Appendix B.

Means-tested benefits, notably IS, mainly generate partnership penalties. For a couple where the woman does not work and the man works less than 16 hours per week, the IS partnership penalty is equal to what benefit the woman would be eligible for if she were single. Prior to the introduction of CTC the size of the penalty depended upon the number and ages of the children in the family. Under CTC, the child premia in IS were transferred to the new tax credit.

Whether these union bonuses and penalties actually affected marriage and cohabitation decisions is discussed in Section 2.2.

2.2 Research evidence on welfare systems and partnering

2.2.1 UK evidence on union formation and the welfare system

There are UK studies that estimate the size and distribution of union bonuses and penalties and who is affected, but do not provide evidence of any impacts on actual demographic behaviour (see Appendix B for two examples). Unfortunately, there is relatively little UK evidence on the effect of welfare systems on actual partnering decisions. A key UK study is by Francesconi and van der Klaauw (2007), who use British Household Panel Survey (BHPS) data for 1991 to 2001 to explore the impact of the WFTC on the formation of unions (marriage and cohabitation) by single mothers.¹⁵

¹⁵ The authors also examine the impact of WFTC on employment, use of childcare and fertility (see Section 4.2.1).

Box 2.1 Further details - Francesconi and van der Klaauw (2007)

The BHPS data comprised unmarried, non-cohabiting females aged 16 or over, born after 1940 and living in England (Francesconi and van der Klaauw, 2007:8). The data excluded females who were in school full-time, or were long-term sick or disabled. The sample comprised 3,333 women, of whom 1,507 were lone parents and 1,826 were childless throughout the period.

They used linear probability models to estimate transitions into partnership by single childless women and single parents. A difference-in-difference approach is used with outcomes for single mothers compared with those for single childless women (the control group) before and after the introduction of WFTC. The use of panel data means that whether WFTC led to changes in the rate at which single mothers move into partnership can be estimated. To account for compositional changes over time, the analysis controls for certain socio-demographic variables (woman's age, number of children by age band (0-4; 5-10; and 11-18 years), ethnic origin, highest educational qualification, tenure, region, and the interactions between woman's age and number of children by age, age and educational qualification, and educational qualifications and number of children by age group. The models also include fixed effects (see Appendix A) to capture non-WFTC policy changes; the underlying assumption is that single mothers and single childless women responded in the same way to these other policy reforms, enabling the analysis to identify the net impact of WFTC. The use of panel data also allows the inclusion of individual fixed effects to account for changes in unobserved characteristics at the micro level.

The authors find that WFTC resulted in a '*substantial*' reduction in the partnership rates of single mothers (Francesconi and van der Klaauw, 2007:25-26). Following WFTC single parents were on average 2.4 percentage points **less** likely to form a union than single childless women ($p < 0.05$). This represented a 28 per cent decrease on the average annual rate of union formation by single mothers (8.5 per cent), which they view as a '*large effect*'. Most of this effect was due to a reduction in partnership formation by mothers with one pre-school child (aged 0-4 years), who were 2.8 percentage points less likely to form a union than single childless women. However, if the single mothers had an older child there was no statistically significant effect. For mothers with two or more children partnership rates were also lower for those with pre-school children (2.5 percentage points) as well as for those with primary age school children (5-10 years) (1.5 percentage points). Therefore, the effect of WFTC on reducing the chances of union formation for single parents (compared to single childless women) was more pronounced for those with younger children.

Further analysis shows that if the comparison group is changed to those single childless women with low educational qualifications similar results are obtained (to the overall sample). (This comparison is undertaken because single parents tend to have low educational qualifications (Francesconi and van der Klaauw, 2007:8).) In addition, an analysis of women by age (those aged up to 30 and those older) revealed similar results – the fall in partnership rates affected all single mothers irrespective of their age.

However, these findings contrast with an earlier analysis of a 1991 cohort of lone parents (Marsh and Vegeris, 2004). An analysis of what factors were associated with a 1991 lone parent being married or cohabitating by 2001 showed that those claiming FC for at least 12 months between 1991 and 2001 were **more** likely to find a partner (44 per cent compared to 30 per cent) (Marsh and Vegeris, 2004:37). That is, FC did not always act as a financial disincentive to forming unions notwithstanding that dual-earner families could lose entitlement to the benefit.

'This is partly due to the fact that some of those who became single-earner couples claimed Family Credit as a couple and partly due to the fact that people rarely referred to the Family Credit rulebook when deciding who to live with. Becoming a couple whose earnings are above the qualifying level for Family Credit would be an incentive of itself.'

Marsh and Vegeris (2004:37)

In addition, the length of the duration claiming IS since 1991 was **not** significantly associated with entering a union by 2001.

The difference in the direction of the impact between these two studies might be due to WFTC being more generous than FC, see Section 1.4.2. Thus, FC may have not been a disincentive to union formation, but the more generous WFTC was. Effectively, WFTC may have reduced the opportunity cost of being a single parent.

The review found no studies on the impact of WTC on union formation.

2.2.2 Cross-country comparative studies on union formation

Not only may the payment of benefits affect union formation, but the contributions levied to finance benefits may also affect behaviour. Ehrlich and Kim (2007) investigate the impact of social security (payroll) taxes for defined-benefit, PAYG pension schemes on family formation and fertility across the OECD (the findings for the latter are discussed in Section 4.2.2). They use two approaches to assess this effect: a simulation model and regression analysis.

The simulation model uses OECD data for 1965 to 1989 and shows that a one per cent increase in defined-benefit, PAYG taxes **reduces** the probability of adult marriages by 0.231 per cent.¹⁶ However, this simulation model incorporates a

¹⁶ Formally, the social security tax rate used is the old-age, survivor and disability-insurance proportion of social security benefits as a share of GDP (Ehrlich and Kim, 2007).

number of (simplifying) assumptions that limit its applicability to policy making. For example, the authors assume that births only occur within marriage, that only social security finances retirement, and that all adults pay the same taxes and receive the same defined benefits (and hence only children born to married parents pay social security contributions).

The regression analysis uses data for 28 OECD countries for the period 1960 to 1992, and shows that a one per cent increase in the pension portion of social security benefits as a percentage of GDP **reduces** the net marriage rate for those aged 15 and over by 0.369 per cent. Moreover, social security taxes for defined-benefit, PAYG schemes accounted for 51.5 per cent of the fall in net marriages (from 9.97 to 4.86) in OECD countries over this period (Ehrlich and Kim, 2007:18). The analysis controls for stage of economic development, other government taxes and benefits and for unobserved country-level variables.

Although Ehrlich and Kim (2007) identify a negative effect on union formation from social security taxes, their analyses, which are limited by the simplifying assumptions made, only find a small sized reduction in net marriages across the OECD.

2.2.3 US evidence on union formation and the welfare system

Compared to the UK there is a more extensive literature in the US on the impact of the welfare system on marriage/cohabitation. In part this reflects that some supporters of welfare reform in the US saw legislative changes, such as the Personal Responsibility and Work Responsibility Act 1996, as partly designed to increase the marriage rate (and to reduce the birth rate) of unmarried women.

As outlined in Appendix D, analysts have demonstrated that tax credits (EITC and child tax credit) and a wide range of means-tested transfer programmes (AFDC, TANF, food stamps, housing assistance, child care and Medicaid) include marriage penalties (and to a lesser extent marriage bonuses) (Carasso and Steuerle, 2005:158-9). Transfer programmes for low-income families in particular contain marriage penalties – benefits received before marriage can be reduced or even terminated on marriage. Moreover, under the tax system married and cohabiting couples are treated differently, but in the benefit system their treatment can vary – depending upon the father's biological relationship with the child, and how open the couple is about their relationship with welfare agencies (Carasso and Steuerle, 2005:160).

Traditional economic theory would suggest that AFDC should lead to a reduction in the marriage rate (see Section 1.5.2), whilst the policy intent behind AFDC waivers and TANF was that reform should lead to an increase in the marriage rate. Overall, however, the evidence from the US on the impacts of the welfare system on partnering is mixed. Some studies find that the tax and transfer systems can lead to increases in marriage (see Schoeni and Blank (2000) ahead), others report a decrease in marriage (see, for instance, Bitler *et al.* (2004) and Moffitt *et al.* (1998)) ahead) and others find small or insignificant effects (see, for instance,

Ellwood (2000b) ahead). As mentioned in Section 1.6.1, the significance and magnitude of estimated effects in non-experimental studies is sensitive to the specification of the analytical models – especially controls for unobserved variables (state and individual effects), which tend to reduce the size and significance of effects. Moreover, a meta-analysis of social experiments conducted by Gennetian and Knox (2003) (see ahead) suggests that, in general, welfare reforms had no impact on marriage or cohabitation rates.

This section considers the impact of welfare benefits (AFDC/AFDC-UP, AFDC waivers and TANF), tax credits (EITC) and an area initiative, the New Hope project, on union formation. For each of these three areas there is a general discussion, followed by an outline of the non-experiment and experimental findings as appropriate.

US welfare benefits and union formation

This review benefits from a major review of the early US literature on the impact of welfare systems on union formation (and childbearing) by Moffitt (1998b), see Appendix C¹⁷. He reviews 68 estimates from a variety of studies made available between 1970 and May 1996 and found that whilst some found a marriage penalty, a significant minority found **no** effect. However, all of the analyses with statistically significant results show that AFDC had a **negative** effect on marriage (Moffitt, 2003:336); a finding that is in-line with traditional economic theory on benefits and family formation.

Work by Moffitt and colleagues also shows that studies of the presumed anti-marriage bias of AFDC have been based on the belief that AFDC benefits are mainly (even solely) available to single mothers (Moffitt *et al.*, 1998:259). As a consequence models estimating the effects of the programme on marriage tend to assume that women face a simple choice: being unmarried and on AFDC or married and off welfare. In other words, early studies often ignore the possibility of cohabitation, or effectively estimate an impact on unions by including it with marriage.

An earlier study by Moffitt (1990) also illustrates the importance of producing separate estimates for the impact of AFDC on marriage for men and women by race. He finds, using Current Population Survey (CPS) data for 1985, that a more generous benefit system significantly reduced the likelihood of black American males being married, but had no significance for women or white males.

Post-1997 studies that show AFDC had a **negative** effect on marriage include Moffitt *et al.* (1998). They find that a \$100 increase in monthly benefit reduced the probability of marriage by 2.5 to 4.9 percentage points (the former estimate

¹⁷ Moffitt (1992) also conducted an even earlier review of the literature, which concludes that AFDC has some effect on marriage (and non-marital childbearing) but not enough to account for the increase in single mothers in the US during the 1980s.

is obtained using PSID data and the latter NLSY data; see Box 2.2 for further details of the study) ($p < 0.10$) (Moffitt *et al.*, 1998:266-72). However, these results are for a model that included a limited number of demographic controls. When additional controls are included, for instance, for the marriage market and family background, the percentage point estimates change; the PSID estimate remains negative but is no longer statistically significant and the NLSY estimate is significant but reduces slightly in size to 4.5 percentage points. Thus this study provides only limited evidence of a negative effect of AFDC on marriage rates.

Relative to single motherhood, Moffitt *et al.* (1998) do show that the marriage rate was positively related to age, education and the presence of young children; and was lower for black women compared to non-black women. In addition, further analysis controlling for AFDC-UP shows, using the PSID data (but not the NLSY data), that this programme did encourage marriage. This contradicts other earlier studies that tend to find that the AFDC-UP programme had little or no positive effect on marriage rates.

Furthermore, Moffitt *et al.* (1998:266-72) find only weak evidence that AFDC rules provided incentives to cohabit. Specifically, they found that cohabitation rates compared to rates of single parenthood were not significantly related to the state level of AFDC, but were negatively related to education and were lower for black women compared to non-black women. However, a telephone survey of state AFDC agencies conducted in 1993 shows that in most states the programme's rules were relatively conducive to cohabitation (Moffitt *et al.*, 1998:264-5). In particular, the cohabitation of men unrelated to the children in the family was treated leniently – their income was not counted against the grant and contributions to the family were often ignored. These rules appear, according to Moffitt *et al.* to give a '*... significant monetary encouragement to cohabitation while on AFDC ...*' (1998:266). Indeed, having a lenient policy for in-kind contributions by unrelated contributors was positively associated with AFDC recipients' cohabitating; albeit the evidence of incentive effects is only '*weak*'.

Box 2.2 Further details - Moffitt *et al.* (1998)

Moffitt *et al.* (1998) developed multinomial logit models for partner status (cohabiting, married or neither) and for the joint decision of partner status and welfare status (on or off welfare, and cohabiting, married or single mother). The analysis used two data sets: the Panel Study of Income Dynamics (PSID) and the National Longitudinal Survey of Youth (NLSY). It was, nevertheless, a cross-sectional analysis. The PSID data were of all women aged 18-55 with children aged under 18 when interviewed in 1987 (1,258), whilst the NLSY data were of all women in the 1987 survey, who at that time were aged 22-29 with children aged under 18 (1,430).

For each dataset the authors give a 'small model' which includes controls for demographic variables (age, education, race and number of children) and an 'extended model' that incorporates additional controls for family background, the marriage market, religiosity and urban residency.

The extent of the analysis was constrained by the small number of cohabiting women in the two samples in receipt of AFDC (43 and 82, respectively). The authors also highlight that some of the results obtained are spurious or anomalous.

A more recent study by Blackburn (2000) illustrates how the impact of benefits on marriage can vary by race. He examines the association between the generosity of benefits and the probability of never-married mothers marrying. Using the NLSY for 1979 to 1992 he finds that for the non-black population of unmarried single mothers an increase in benefits is associated with a significant **fall** in the probability of marriage – a \$100 increase in monthly benefit reduced the probability of marriage by 19.5 per cent (Blackburn, 2000:129-131). Moreover, states with AFDC-UP had a higher likelihood of marriage.

However, for black never-married mothers higher benefits were associated with **increased** chances of marriage, and AFDC-UP reduced marriage probabilities. That, for instance, a \$100 increase in monthly benefit increased the probability of marriage by 19.8 per cent was not expected nor anticipated by the underlying economic theory. Thus, the study only provides limited support for the hypothesis that unmarried women with children will find marriage less desirable when benefits available outside of marriage are higher. However, its findings should be treated with caution as it does not include controls for unobserved heterogeneity.

The study also found that higher expected earnings were associated with a higher probability of marriage, and that never-married mothers who grew up in female headed households were less likely to marry (Blackburn, 2000:141). The analysis found no evidence of a marriage market effect; in the male labour market opportunities were not significantly associated with the likelihood of marriage.

Box 2.3 Further details - Blackburn (2000)

Blackburn (2000) estimates proportional hazard models for the duration between first birth and marriage. The NLSY covers people aged 14 to 22 in 1979, and the analysis is based on women who had their first non-marital birth between 1978 and 1991.

It excludes observations where the mother is married within six months of the first birth – a procedure adopted by other analysts.

Two welfare benefit variables are used: the sum of AFDC and Food Stamp monthly benefits for unmarried women living in each State with no other income, and whether or not the State had AFDC-UP. Other hazard rate model variables include the time period since the women became never-married mothers, the woman's expected earnings (as measured by age, years of schooling and a cognitive and applied skills aptitude test), and 'marriage market' variables (such as, percentage of a county's population in manufacturing and the area's unemployment rate). Three separate analyses are conducted for 'pooled' data, black people and non-black people. The non-black never married sample includes a small number of Hispanic women.

Non-experimental and experimental studies of welfare reform (that is, AFDC waivers and TANF) and union formation find mixed evidence of a welfare effect. Some programmes appear to increase union formation, but only for sub-groups, and other programmes decrease union formation. In terms of non-experimental studies Bitler *et al.* (2004) find that AFDC waivers and TANF **reduced** marriage rates, but Schoeni and Blank (2000) find AFDC waivers **increased** marriage but TANF had **no** significant effects. For both studies the comparison is made with states not implementing 'major' AFDC waivers. The waivers covered introducing family caps, extending income disregards, amending time limits and expanding eligibility for AFDC-UP. These two non-experimental studies are discussed ahead, and then findings from experimental studies of welfare reform and marriage are outlined.

Bitler *et al.* (2004) use state level vital statistics on marriage and divorce for 1989 to 2000 to assess the impact of state waivers and TANF on flows into (and out of) marriage.¹⁸

¹⁸ The findings for divorces are discussed below in Section 3.2.2.

Box 2.4 Further details - Bitler *et al.* (2004)

Bitler *et al.* argue that flow, rather than stock, data are required to assess the 'immediate impacts of welfare reform' (2004:219). The authors regress the rate of new marriages (or divorces) with measures of welfare reform, labour market characteristics and demographic variables and other controls (including state and year fixed effects). The labour market variables cover unemployment and earnings and the demographic variables include the proportion of the states' populations that were African American and Hispanic, the proportions of the population living in metropolitan areas, the age distribution of women and female educational attainment. The analysis gives average estimates for the impacts of AFDC waivers and for TANF, and in both cases the comparison is AFDC without waivers.

The disadvantages of using state level vital statistics are: the effects across different age, race and educational backgrounds cannot be explored and the data are aggregated by the state within which the marriage or divorce occurred and not by state of residence. Sensitivity analysis using more detailed data suggests that the latter did affect the impact estimates, but the coefficients were always negative and sometimes significant.

Bitler *et al.* (2004:222-223) find that, as with other studies, adding state and year fixed effects to the model to control for unobserved variables leads to a large reduction in estimated impacts, see Appendix A. For example, for AFDC waivers the estimated effect on the rate of new marriages is, with labour market and demographic controls, a 15.6 per cent decline relative to the AFDC programme. However, adding state and year fixed effects gives a 4.8 per cent **decline** in new marriages ($p < 0.10$). Moreover, welfare reform, in the form of AFDC waivers, which might be expected to increase the number of new marriages (given the policy objectives) instead, resulted in a decline of nearly five per cent. Similarly, TANF led to a **reduction** of 23.3 per cent in new marriages compared to the AFDC programme ($p < 0.01$)¹⁹. Although the TANF estimate is relatively large there is little variation in the data because it covers a short period of time, and so may not be a robust estimate. The authors also show that the maximum amount of benefit paid to a family of four produced a fall in marriage; however, when State and fixed effects are included in the model this effect became positive, but was statistically insignificant (Bitler *et al.*, 2004:223). The authors conclude that: '*we can say with some confidence that welfare reform is not "pro-marriage" on balance.*' (Bitler *et al.*, 2004:232).

Schoeni and Blank (2000) use data on all women aged 16-54 years from the CPS for 1977 to 1999 to investigate the impacts of AFDC waivers 1992 to 1996 and of TANF. The estimates show that the AFDC waivers significantly **increased** rates of marriage by 2.3 percentage points for those with less than 12 years of schooling (Schoeni and Blank, 2000:17 and 31) ($p < 0.10$). As the authors anticipated, the effects for more educated women are lower; there is a statistically significant

¹⁹ Bitler *et al.* (2004) also specify models that include state specific time trends, and these models give similar impact estimates to those reported here.

reduction in the rate of marriage of 1.4 percentage points for women with 12 years of schooling, and the impact for women with more than 12 years of schooling is insignificant (0.7 percentage points). So whilst the impact for the Schoeni and Blank (2000) study is in the opposite direction to the Bitler *et al.* (2004) study, it is for a sub-group – those with less education – admittedly one likely to be affected by welfare reform. However, the CPS is believed to underreport both marriages and divorces and this undermines the robustness of studies using the dataset (Bitler *et al.*, 2004:219).

Their estimates also show that post-1995 policy changes (TANF) had **no** significant impact on marriage (Schoeni and Blank, 2000:21 and 33). That is, the less educated were as likely to get married as the better education following the introduction of TANF.

Box 2.5 Further details - Schoeni and Blank (2000)

The analysis involves collapsing CPS data by calculating the mean marriage rate (and single headship rate, see Section 4.2.3, for four age groups and three educational attainment groups for each state and year – giving a dataset with 14,076 observations (Schoeni and Blank, 2000:9).²⁰

Schoeni and Blank (2000) are particularly interested in the outcomes for women with less than 12 years education (high school dropouts) because they were the group most likely to be affected by AFDC and TANF. They did not expect women with 13 or more years of schooling to be affected by the welfare programmes. (The third educational group was women with 12 years of schooling.)

Different analyses are conducted to obtain the AFDC waiver and TANF estimates. For the waiver analysis, regression is used.²¹ The analysis involves comparing outcomes in waiver and non-waiver states, controls for the labour market (as the performance of the economy was lower in waiver states compared to non-waiver states) and demographic characteristics (age, education and race), state fixed effects, year fixed effects and state specific time trends (Schoeni and Blank, 2000:13-14).

To estimate the impact of TANF on marriage rates, Schoeni and Blank (2000:20-23) adopt a difference-in-difference approach. Differences in marriage outcomes for 1995 and 1998 are compared for women with less than 12 years schooling against women with more than 12 years schooling. Controls, year effects and fixed effects similar to those in the regression analysis are included in the analysis (the trend data are excluded).

²⁰ As well as marriage and headship, Schoeni and Blank (2000) estimate a range of outcomes, such as welfare participation, percentage working earnings, and hours worked.

²¹ The regression analysis is also used to estimate the effects of TANF, but they are regarded as being unreliable because there is a lack of observations and state TANF programmes were implemented over a relatively short period of time.

Both the Bitler *et al.* (2004) and Schoeni and Blank (2000) analyses of the impact of TANF on marriage (and divorce) is limited by the relatively short period of time over which TANF was implemented nationally. All states had implemented TANF between September 1996 and January 1998 – a 16 month period (Bitler *et al.*, 2004:218). The speed of implementation means that – unlike the AFDC waiver data – there is relatively little variation between states. Their findings could be biased by random factors that only affected this 16 month period and hence do not provide a good guide to longer term impacts. Both sets of authors are more confident about their AFDC waiver results.

Random assignment studies have also been analysed to investigate the impact of benefits on partnership decisions. In general, social experiments, like non-experimental studies, are inconsistent on whether there is relationship between welfare policies and marriage rates for single parents (Gennetian and Knox, 2003:1). Overall, experimental programmes have tended not to have an effect on marriage, although some have effects for sub-groups. Some of these studies are discussed ahead and in Section 2.2.4.

Gennetian and Knox (2003) conducted a meta-analysis of six welfare programmes at the 18 months to four years follow-up point and find **no consistent relationship** between these programmes and union formation for either the benefit population overall or sub-groups. The studies cover a ten year period, from 1991 to 2001. All of the programmes were random assignment experiments and incorporated different treatments or were implemented in different areas giving Gennetian and Knox (2003:46) 14 sets of results to review.²² Whilst the nature of interventions in the programmes varied, across all programmes they included: increased earnings disregards, treating two-parent families the same as single parent families, mandatory employment services, and time-limited eligibility to welfare benefits. A focus of the Gennetian and Knox (2003) review is to explore differences by sub-groups of single parents, as they anticipate that the programmes' effects on marriage and cohabitation will vary by sub-group. The sub-groups examined were defined by: age of youngest child, number of children, age of single parent, priori marital status, race, level of disadvantage (defined in terms of benefit and work history and educational attainment), whether has prior work experience and length of benefit receipt.

Gennetian and Knox (2003:12) report findings for whether the single parents were either married or cohabiting when they were surveyed at the follow-up point of each study. As a consequence their reported marriage and cohabitation rates are lower than if respondents had been asked whether they had **ever** been married

²² This review includes one of the studies discussed below, namely the MFIP. The other five programmes were Florida's Family Transition Program, Vermont's Welfare Restructuring Program, the national Evaluation of Welfare-to-Work Strategies, Connecticut's Jobs First Program, and Los Angeles Jobs First/Gain. Gennetian and Knox (2003:6) also selectively include the estimates from other programs when appropriate.

or cohabited. The authors estimate the impacts on marriage and cohabitation for sub-groups for each study and then use meta-analysis to estimate average effects across the studies overall and for both sub-groups and types of intervention.²³ Their findings are as follows:

- For single parents across all the studies the welfare programmes had **no** significant effect on marriage or cohabitation (Gennetian and Knox, 2003:14-15). There was an insignificant and small fall in the marriage rate of 0.3 percentage points to 10.6 per cent for those in the treatment group; and an insignificant and small increase of 0.1 percentage points to 10.9 per cent in the cohabitation rate.

The analysis also finds a wide variation in rates of marriage and cohabitation across individual sites. Gennetian and Knox (2003:15) suggest this variation is due to both differences in the length of the follow-up time period of the studies and differences in local cultural, economic or political factors.

- The welfare programmes had **no** significant effect on marriage or cohabitation for specific family sub-groups (Gennetian and Knox, 2003:16).²⁴
- By type of policy intervention the only significant effect found is the small effect that improved earnings disregard policies without time limits had on increasing marriage amongst young mothers, those not previously married, and those most disadvantaged (an increase of 3.2 percentage points) (Gennetian and Knox, 2003:21). This finding is consistent with those from wage supplement programmes such as the Canadian Self-Sufficiency Project described ahead.

The implication is that the positive findings of some other studies are '*... idiosyncratic to the particular programs, populations or sites ... rather than part of a consistent story of effects on marriage for a broad set of programs.*' (Gennetian and Knox, 2003:21).

The Gennetian and Knox (2003) meta-analysis did not include results for the California Work Pays Demonstration Project (CWDP), which was an AFDC waiver project commencing in 1992. Hu (2003) uses this programme to explore short- and long-term impacts of AFDC-Basic and AFDC-UP on marriage formation and dissolution. It is the explicit modelling of two-parent married families that makes this study of particular interest. The treatment group received enhanced work incentives in the form of lower maximum benefits, a lower benefit withdrawal rate (from 100 per cent to 67 per cent) and an extension of the income disregard (\$30 per month) beyond 12 months (Hu, 2003:947). The dataset comprised

²³ A key assumption underpinning the analysis is that each study's sample is drawn from the same underlying population which has one 'true' effect size.

²⁴ One statistically significant relationship was found, but within this sub-group there was a ten per cent likelihood of finding two significant relationships by chance alone. Thus Gennetian and Knox (2003:16) conclude that there was no variation in effects by family sub-group.

longitudinal administrative and survey data. The latter was administered in two waves: between October 1993 and September 1994 and between May 1995 and May 1996. The analysis is for female respondents only and includes controls for demographic characteristics.

Hu (2003:949-951) finds that, compared to the control group, those women in the AFDC-UP treatment group had significantly **higher** rates of marriage and cohabitation at wave 2.²⁵ That is, two-parent families receiving the stronger work incentives had marriage/cohabitation rates seven percentage points higher than the control group. Further analyses suggest that this increase is due to a higher proportion being married, rather than due to more cohabitation (Hu, 2003:953-954). The results also imply that there is a time lag before financial incentives affect behaviour – wave 2 was conducted between 29 and 41 months after the start of the experiment.

In addition, for single parents on benefit (AFDC-Basic), the work incentives had **no** statistically significant effect on the proportion married/cohabiting at waves 1 or 2. However, further analysis shows that single parents in receipt of AFDC-Basic and in the treatment group were **more** likely to *cohabit* with the children's father by wave 2 compared with the control group (Hu, 2003:954-955). Cohabiting with the father meant that the family became eligible for AFDC-UP, but the treatment group's lower maximum benefit meant that the woman faced a lower loss of benefit, and hence there was a smaller disincentive to cohabit.

So Hu (2003) provides some evidence that benefits can promote the stability of marriage over approximately three and a half years, albeit for a relatively small proportion of the then total AFDC caseload, that is, two-parent families. In the analysis Hu (2003:946) ignores the effect of other welfare programmes (notably EITC) and as Dickert-Conlin and Houser (1999) and Ellwood (2000b) show, this may be a serious omission that limits the applicability of the findings. The Gennetian and Knox (2003) observations about the importance of local context and the idiosyncratic nature of experimental findings potentially apply to the study.

The MFIP was included in the Gennetian and Knox (2003) meta-analysis discussed previously. However, it is discussed further here because further analysis is available on its longer-term impacts on union formation. Gennetian and Millar (2004) explore whether MFIP had an impact on the marriage of single and two-parent families. MFIP included an enhanced disregard whereby recipients received a higher basic award and were allowed to retain 38 per cent of their earnings (compared to the rapid withdrawal of benefit under AFDC) and changed eligibility rules by removing the 100 hour per month and work history requirements in AFDC-UP, which had served to limit the eligibility of two-parents for AFDC. Thus MFIP should have led to an increase in marriage rates.

²⁵ There were no statistically significant findings for wave 1 of the survey. This might be because wave 1 was administered only 10 to 21 months after the commencement of the experiment, possibly too soon to measure changes in marriage/cohabitation and divorce/separation (Hu, 2003:951).

The authors make use of survey data from a social experiment used to evaluate the MFIP. The survey is of a representative sample of programme participants who were randomly assigned to treatment and control groups between April and October 1994 and the follow-up survey was administered three years after they joined the programme. The analysis is regression-adjusted to allow for slight differences in the survey data for the treatment and control groups. Separate analyses are conducted for single and two-parent families (defined as both married and cohabitating couples) by benefit status (that is, whether they were new applicants or long-term recipients) in order to reflect differences in MFIP eligibility rules.

Compared to the AFDC control group Gennetian and Millar (2004:285-295) estimate that:

- For single parents who were long-term recipients MFIP **increased** marriage – after three years the proportion married had increased by 4.2 percentage points to 12.6 per cent ($p < 0.05$). The authors describe this increase as '*modest*'; however, it represents a 50 per cent increase on the control group. (The authors suggest that this increase in marriage might be due to an increase in the MFIP mothers' income, which would increase their '*bargaining power within marriage, thus making them more comfortable and willing to marry ...*' (2004:296)).
- For single parents who were recent applicants (that is, families who had received AFDC for less than 24 months at the time of random assignment or who made a new claim on the day of assignment) MFIP had **no** impact on marriage.
- For two-parent families who were already in receipt of AFDC-UP when they started on the programme, MFIP significantly **increased** the proportion in marriage and cohabitation over the three years by 19.1 percentage points to 67.3 per cent. Most of this increase is due to a significant reduction in separations (-9.5 percentage points) – the divorce rate for the treatment group was also lower (three percentage points), but this fall was not statistically significant. Thus for two-parent recipients MFIP increased marriage/cohabitation stability by nearly 40 per cent compared to the control group.²⁶ MFIP might have had this effect because it reduced the stresses on these families by increasing family income which in turn allowed some two-earner families to reduce their working hours.

With respect to two-parent families, Gennetian and Millar (2004:296) conclude:

'... the MFIP results suggest that providing more generous benefits to low-income working families can help keep families together – at least in the short term – perhaps by reducing the many stresses that these couples face.'

Whether the Minnesota's impacts last beyond three years is considered in Gennetian (2003), who examines the impact of MFIP on the full sample of two-

²⁶ Sample sizes were too small to estimate the impacts of MFIP on marriage/cohabitation for two-parent who were recent applicants.

parent families over a seven year follow-up period.²⁷ The outcomes of interest are the divorce rate for those that were married at the start of the study, and the marriage and any subsequent divorce for those that were cohabitating at the beginning of the study. As with the findings for the three year follow-up period, the analysis distinguishes between families who had been long-term and recent recipients at the time of random assignment. She finds that effects were more pronounced for the former group than the latter group.²⁸

For existing benefit recipients, MFIP (in comparison to the AFDC control group) increased overall marital stability by significantly decreasing divorce by 3.5 percentage points to 10.4 per cent (a 25 per cent reduction) over the seven years of the follow-up period (Gennetian, 2003:6-8). Moreover, this effect was more pronounced for: black married couples (minus 9.9 percentage points), families with children whose youngest child was aged under six years at study entry (minus five percentage points), and larger sized families (three or more children) (minus 5.2 percentage points). In addition, MFIP reduced the divorce rate of those that were married when they entered the study (by minus 2.9 percentage points), but this fall is not statistically significant. However, for black, non-Hispanic married couples at baseline, MFIP did reduce the divorce rate by 20.5 percentage points over the seven year follow-up period (a 73 per cent reduction to 7.8 per cent) (Gennetian, 2003:14-16).

For existing recipients who were cohabitating at study entry, MFIP did **not** encourage marriage (Gennetian, 2003:17). However, of those that did subsequently marry the couples in MFIP were less likely to get divorced by the end of the follow-up period compared to the AFDC control group (minus 5.3 percentage points in the divorce rate, or a 66 per cent reduction). Thus MFIP also promoted marital stability amongst this group of former cohabitating couples.

For recent two-parent applicants, MFIP had **no** significant effect on the divorce rates over the seven year follow-up period (Gennetian, 2003:21).

Both the three- and seven-year follow-up studies suggest that newer and existing benefit applicants may respond differently to marriage incentives. Implying that other studies should explore the distinction between longer term and more recent claimants. However, a limitation of the Gennetian (2003) analysis is that it only focuses on formal/legal divorces and the data do not capture separations or living apart. In addition, whilst Gennetian (2003) shows that benefits might help to sustain marriages by decreasing the divorce rate, the quality of these sustained marriages is unknown.

This finding confirms that of Hu (2003), namely, that benefits can promote the

²⁷ The analysis required the matching of administrative marriage and divorce records with MFIP data.

²⁸ Note, effects are for marital status at the time the respondent entered the study (whether treatment or control groups).

stability of two-parent families (see previously). However, the MFIP was included in the Gennetian and Knox (2003) meta-analysis and, as Gennetian and Millar (2004:277) acknowledge, the finding that earnings disregards could increase marriage and marital stability, might not be generalisable from Minnesota to other localities.

Both the Hu (2003) and Gennetian and Millar (2004) studies also only show that their treatment groups had less adverse effects on union formation than the old AFDC policy (as represented by the control group). They are of limited use in increasing our understanding of the overall effect of TANF on current rates of union formation and dissolution (Burstein, 2007:413). By definition they also provide no evidence of any impacts on non-participants in the experiments.

In practice, welfare reform may have had a relatively small impact on marriage because welfare reform gave women greater financial independence through the emphasis on obtaining employment. This argument is supported by Nandi (2008), who, using data from the National Longitudinal Survey of Youth for the period 1979 to 2002, finds that single, non-employed women who at some point in time were welfare recipients gain more, in terms of household income, if they obtain full-time employment (whilst remaining single) compared to if they enter marriage or cohabitation. The estimated income gains from full-time employment were 220 per cent if they worked full-time compared to 119 per cent from cohabitation, 182 per cent from marriage and 113 per cent from working part-time ($p < 0.01$) (Nandi, 2008:20 and 23). As a route out of poverty, therefore, full-time employment is a better option than marriage or cohabitation. This arises because female benefit recipients' potential partners tend to have low paid jobs; even though spouses tend to have higher earnings than cohabitators.

EITC and union formation

The US literature on the impact of EITC on partnering is less extensive than that for benefits, but still broader than the UK literature. There are a small number of studies that have examined actual behavioural responses, and, in general, the effect of EITC on actual marriage decisions is small and statistically insignificant (Hotz and Scholz, 2003:184-5; Hoffman and Seidman, 2003:98; see also Baughman and Dickert-Conlin, 2003).²⁹

For example, Dickert-Conlin and Houser (2002:35) conclude that, on average, EITC did **not** influence marriage decisions. Their analysis is based on women aged between 18 and 50 with children, using panel data from the Survey of Income and Program Participants for the period 1989 to 1995. (The EITC received is imputed as the maximum Federal and State EITC for a woman holding constant her demographic and family characteristics. Their model includes controls for individual and State characteristics, individual fixed effects and time varying covariates. It

²⁹ This contrasts with the US *general* tax system, where the probability of marriage does fall as the marriage penalty increases (see Alm *et al.*, 1999; Eissa and Hoynes, 2000). The EITC effects are small possibly because marriage related tax liabilities are small relative to total income for most households (Dickert-Conlin, 1999:222; Dickert-Conlin and Houser, 2002:30).

also treats cohabitating couples as unmarried.) However, there were differences by whether the women were married or unmarried the first time they entered the panel (Dickert-Conlin and Houser, 2002:35-36). For the initially married women, EITC encouraged them to remain married (or discouraged divorce) – a \$100 increase in EITC increased the probability of marriage by 0.8 percentage points. For unmarried women there was no statistically significant correlation.

Ellwood (2000b) comes to a similar conclusion, namely, that EITC - and other welfare reforms - estimated impacts on marriage are small and ambiguous. Ellwood (2000b:1100) concludes that there is no '*real evidence that EITC marriage penalties were reducing marriage.*'

Box 2.6 Further details - Ellwood (2000b)

Ellwood (2000b:1073) uses a difference-in-difference approach to examine changes in outcomes for sub-groups both geographically and over time. This is done by treating the rapid expansion in EITC, which did not affect people equally, as a natural experiment. Using data from the Current Population Survey 1975 to 1999 he takes women aged between 18 and 44 and using their personal characteristics (such as age, education and race) predicts a 1998 wage for them for each year. The women are then allocated to wage/skill quartiles for each survey year. Ellwood (2000b:1075) then tracks what happens to similar quartiles of women over time. If financial incentives vary for women in the bottom quartile compared to the top quartile, and he argues that they do, then there is a natural experiment allowing within and between quartile comparisons for groups of women. The expectation is that over time marriage should be more common for women with children in the bottom quartile (Ellwood, 2000b:1093-1097). However, the data show that the marriage rate for those in the bottom quartile continued to fall over the observation period – they had not responded to the incentives created by EITC and other welfare reforms. A finding confirmed by a small impact estimate on marriage of **minus** four percentage points when using difference-in-difference to compare the bottom quartile with the third quartile for 1986 and 1999. This finding is inconsistent with economic theory, which would predict a marriage effect. A similar impact estimate for marriage (minus three percentage points) was found for a comparison of women with children and women without children in the bottom quartile. However, as Ellwood (2000b:1096) points out, his analysis uses women's ages to predict wages, and women in the bottom quartile tend to be younger than those in the other quartiles, and if younger women postponed marriage decisions for reasons unrelated to EITC this could bias the findings. So Ellwood limits his sample to women aged 24 to 44 years. This shows that the proportion of married women in the lowest quartile flattens out after the early 1990s, implying that the decline in marriage amongst the lowest skill women aged over 24 had been slowed. Unfortunately, the differences in the trends with other quartiles are '*too tenuous to draw strong conclusions.*' (Ellwood, 2000b:1096).

Eissa and Hoynes (1999 cited in Dickert-Conlin and Houser, 2002:28 and Hoffman and Seidman, 2003:97-99) also find that EITC had modest impacts on marriage. They calculate the income tax cost of marriage and *simulate* how EITC affects the probability of marriage.³⁰ They find that increasing the tax cost of marriage by \$1,000 reduces the probability of marriage by 1.3 percentage points. Further simulations show that EITC (as operating in 1997) increased the marriage rate by one percentage point for families with low-incomes (less than \$15,000) and reduced the marriage rate for those with incomes over \$25,000. Moreover, changes in EITC between 1984 and 1997 increased marriage rates by one to five per cent for low-income families (that is, with incomes below \$25,000), and reduced marriage rates by one per cent for families with middle incomes (of between £25,000 and \$75,000). These are weak incentive and disincentive effects.

Eissa and Hoynes, (2000b) extend this analysis to look at the trade-off between marriage and cohabitation. They impute the presence of cohabitating households using data on the relationship to the head of household for other household members. Their analysis shows that increasing the tax cost of marriage by \$1,000 significantly **reduces** the probability of marriage by 0.4 percentage points compared to cohabitation. This analysis incorporates Federal taxes and EITC. The analysis is used to simulate the effect of EITC (and other tax components) on marriage rates. Simulations for the same period (1984 to 1997) show that EITC for low-income families (\$10,000 to \$15,000) increased the likelihood of marriage by 4.3 percentage points, but decreased it for higher income groups – two to three percentage points for middle income groups and less than one percentage point for the higher income group (\$75,000 and over) (Eissa and Hoynes, 2000b:19 and 37). These simulations for EITC are described as '*modest*'.

However, other factors, even for a married couple in the phase-out stage, may help maintain marriage (Ellwood, 2000b:1070-1072). Whilst a woman in a low-income married couple where both partners are working might gain a larger EITC by divorcing, the family does enjoy the extra income from EITC and this might reduce the level of family stress and increase the probability of the marriage surviving. Moreover, EITC also provides a lower work incentive for the second earner to work, and they may decide to spend more time with the family because in Beckerian terms, see Section 1.5.2, this extra time gives marriage a comparative advantage over divorce. Moreover, people may consider longer-term benefits and costs of marriage and so not respond to shorter-term gains or losses arising from EITC.

New Hope programme

One other US study, the New Hope programme, deserves mentioning because it is in effect an outlier – finding a relatively large positive effect on marriage.

³⁰ In their analysis they use repeated cross-sectional data from the Current Population Survey for 1985 to 1998 for women aged 18 to 47 years, and use childless women as controls. The models include controls for individual characteristics and state fixed effects.

New Hope was a US voluntary programme operated in two low-income neighbourhoods in Milwaukee, Wisconsin during the mid and late-1990s that sought to increase participants' levels of employment and income. It offered participants in full-time employment an anti-poverty package comprising earnings supplements, low-cost health insurance, child-care subsidies and community service jobs for those unable to find paid work in the private sector (Gassman-Pines and Yoshikawa, 2006:15). Programme benefits were provided for three years. The programme was provided outside of the welfare system and was open to both welfare recipients and non-recipients.

New Hope was evaluated using random assignment. Gassman-Pines and Yoshikawa (2006:13) assess whether New Hope increased marriage rates five years after random assignment for never married mothers. (Participants were randomly assigned in the New Hope programme between August 1994 and December 1995.) The programme has been shown to increase participants' employment rates and income. Gassman-Pines and Yoshikawa (2006) consider whether the increased financial stability and feelings of well-being it provided also led to an increase in marriage rates.

Box 2.7 Further details - Gassman-Pines and Yoshikawa (2006)

Gassman-Pines and Yoshikawa (2006:16) count as being married at year five those women whose spouse lived with them and those whose spouses lived apart. Their measures of income and employment relate to years one and two and the indicators of the woman's well-being, such as depression, parenting stress and material hardship, relate to year two only. There is, therefore, a three year gap between the main outcome variable of interest and some of the factors Gassman-Pines and Yoshikawa (2006) believe may have affected marriage rates of never-married women. The logit analysis includes some demographic and socio-economic baseline variables to help control for confounding variables. These covariates include race, presence of two or more children, earnings, whether they had a car, and respondent's age (Gassman-Pines and Yoshikawa (2006:18).

They find that New Hope significantly **increased** the rates of marriage of never-married women (Gassman-Pines and Yoshikawa, 2006:18). Five years after random assignment 20.7 per cent of those in the New Hope action group were married compared to 11.8 per cent of those in the control group – an 8.9 percentage point increase. This is one of the largest reported increases. Gassman-Pines and Yoshikawa (2006:25) suggest that this might be because the follow-up period (five years) is longer than for most other studies (see, for instance the Gennetian and Knox (2003) meta-analysis discussed previously). They argue that to detect changes in demographic behaviour longer follow-up periods are required (Gassman-Pines and Yoshikawa, 2006:25).

Additional (non-experimental) modelling shows that (Gassman-Pines and Yoshikawa (2006:20):

- There was an association between annual income and marriage ($p < 0.10$). Each \$1,000 increase in annual income raised the likelihood of a woman who was never-married at baseline being married by year five by 1.08 times.
- Women who endured higher levels of material hardship at year two were less likely to be married by year five ($p < 0.05$).

However, Gassman-Pines and Yoshikawa (2006:26) acknowledge that how increases in women's income might promote marriage is unknown. In addition, there was no association between marriage and other measures of financial stability and women's wellbeing.

Gassman-Pines and Yoshikawa (2006:24) seek to establish that the economic effects of New Hope (increases in employment and earnings) preceded marriage. Analysis shows that New Hope had no significant effect on marriage by year two (eight per cent of the action group were married compared to six per cent of the controls). Yet New Hope had significantly increased employment amongst never-married women by year two. Moreover, over years three to five, when most of the marriages occurred, New Hope did not significantly increase employment or earnings (albeit income did significantly increase ($p < 0.10$)). Thus according to Gassman-Pines and Yoshikawa (2006:24) New Hope:

'... provides evidence that an anti-poverty program that increases employment and income among never-married mothers can affect their entry into marriage.'

Nonetheless, the majority of women who were never-married at baseline were five years later neither married nor cohabitating. Moreover, New Hope had no significant impact on unmarried cohabitation (Gassman-Pines and Yoshikawa (2006:18).

The New Hope study finds a relatively large effect. However, the sample used in the Gassman-Pines and Yoshikawa (2006) study is relatively small (337). It also comprised a group of participants who were likely to be less disadvantaged than the population in receipt of welfare benefits in general. The study is also of one location, and as outlined in Section 1.6.2 and ahead social experiments may not adequately take into account local context, which may affect the results obtained.

2.2.4 Canadian evidence on union formation and the welfare system

This sub-section considers two Canadian studies. The first is of the Canadian SSP, which is an important study because (like MFIP) it highlights the importance of local context. The second study is unusual because it is focused on pension reforms.

SSP

Two social experiments in Canada provide differing findings on whether an earnings supplement paid to single mothers altered rates of marriage and cohabitation. Harknett and Gennetian (2003) explore the effect of SSP on union formation (marriage and cohabitation) using experiments in two culturally and geographically distinct provinces: British Columbia and New Brunswick. SSP was an earnings supplement paid to single parents in receipt of benefits (Income Assistance) when they entered full-time employment and was payable for up to three years (see Harknett and Gennetian (2003:452-453) for further details). SSP also disregarded any income or assets from a spouse or partner, and so eliminated any union/marriage penalties. The amount paid was also unaffected by whether they married or cohabitated with a partner. The experiment was conducted between 1992 and 1998 and single parents were randomly allocated to a 'supplement offer' group and a control group. Members of the treatment group only received SSP if they obtained full-time work within one year of the experiment commencing.

Qualitative research reveals that some former single parents attributed their subsequent marriage to their move into employment as it allowed them to meet their husbands, although, for some, paid work did not lead to an enhanced social life due to increased exhaustion and lack of time (Harknett and Gennetian, 2003:458-459). The financial independence provided by employment also allowed a small number of recipients to leave physically and emotionally abusive relationships. The analysis of welfare effects is based on surveys of the 'supplement offer' group and a control group and it excludes male single parents and mothers who were married or cohabitating at baseline. Control variables (such as age, educational attainment, marital status, age of youngest child and prior earnings) were used in the regression analysis to adjust for some slight differences in the composition of the sample groups.

Harknett and Gennetian (2003:463-467) find that over the 36 month follow-up period:

- SSP significantly **reduced** single mothers' rate of marriage in British Columbia from month nine onwards;
- SSP had **no** effect on rates of cohabitation in British Columbia;
- SSP significantly **increased** the rate of marriage amongst single mothers between months six and 34 in New Brunswick; and
- SSP significantly **increased** cohabitation rates in New Brunswick for a few months in the second and third years of the follow-up period.

Overall, compared to the control group, SSP decreased the probability of being ever married or cohabitating in British Columbia by 2.5 percentage points (a 16 per cent fall) but increased the likelihood of being ever married or cohabitating in New Brunswick by 4.3 percentage points (a 22 per cent rise). The difference in the two impact estimates is statistically significant. SSP had a larger impact on marriage compared to cohabitation in both provinces: -2 percentage points

compared to -0.1 in British Columbia; and 2.4 percentage points compared to 1.6 in New Brunswick. It follows that the effects of SSP were larger in New Brunswick than in British Columbia.

Harknett and Gennetian (2003:467-474) suggest that the differences by province arise from different labour market and local policy contexts. Benefits were less generous in New Brunswick and the economy was weaker compared to British Columbia and this could have encouraged people to pool their incomes through forming unions. They also reason that as the impact of SSP on income and employment were similar in both provinces, then these economic mechanisms cannot account for the observed difference between provinces.

Harknett (2006) extends the SSP analysis by using non-experimental methods to assess whether the effects on those that took up the offer of SSP differ from those that did not. Using statistical matching techniques (propensity score matching) she compares the 36 per cent in the action group that actually received SSP with a matched sample from the control group. A similar comparison is made between the 64 per cent in the 'supplement offer' group who did not take up SSP with a matched 'non-takers' group from the control group. Matching is necessary because the 'takers' or SSP recipients in the action group are self-selecting and systematically differ from 'non-takers'.³¹ In general, 'takers' are less disadvantaged – they have more education, more work experience, face fewer barriers to work, and have greater work aspirations – and they are younger (Harknett, 2006:745-746). These characteristics are also associated with an increased likelihood of marriage or cohabitation.

This further analysis shows that (Harknett, 2006:755-764) in New Brunswick SSP recipients, in comparison to 'non-takers', were **more** likely to marry or cohabit over the 36 months of the study. Furthermore, those 'takers' who were less advantaged in the labour market – with more obstacles to work, lower educational attainment and limited work experience – were more likely to form unions.

For British Columbia the results of the analysis are unusual. The expectation is that the effects of SSP should be concentrated amongst actual SSP recipients rather than non-recipients. Yet the fall in union formation is slightly higher for 'non-takers' (-3.1 per cent) than for 'takers' (-2.9 per cent). Harknett (2006:758) claims that this means that the British Columbia results '*lack robustness*'. However, the difference between the two comparison groups is small, and whether the difference is statistically significant is unknown. It is also possible that the British Columbia results reflect the effect of unobserved factors and in particular 'local' contextual variables.

Harknett (2006:763) does show that the fall in union formation in British Columbia is focused amongst the more advantaged in the labour market. Suggesting an 'independence' effect; this sub-group were able to forgo the income of a potential partner.

³¹ However, the matched comparison groups may also differ on unobserved characteristics.

Pension reform

A second Canadian study by Baker *et al.* (2003) looks at the impact of the removal of marriage penalties for surviving spouses in the pension system during the 1980s. This is a time-series cross-sectional study. Simplification of the Canadian Income Security system led to the removal of 'substantial' marriage penalties, whereby surviving spouses lost their pensions on remarrying (Baker *et al.*, 2003:13-14). The analysis uses administrative data for 1975 to 1995 and takes advantage of Canada having two separate but similar pension schemes: the Quebec Pension Plan and the Canada Pension Plan for people not working in Quebec. Marriage penalties were removed from the former in 1984 and from the latter in 1987. The analysis estimates remarriage rates for males and females in Quebec (the rest of Canada) using the rest of Canada (Quebec) as controls. Other control variables cover province and year effects and the ratio of unmarried females to unmarried males as a measure of the 'marriage market'. The analysis examines flows into marriage by previous marital status for males and females separately for set age groups. The interpretation of the analysis is complicated by rapid increases and decreases in the remarriage rates of younger males (aged under 35) in Quebec between 1986 and 1989 (Baker *et al.*, 2003:21-22). The authors cannot explain these 'spikes' in the data and so focus on the results for older males.

Baker *et al.* (2003) find that the marriage penalties had a '*large and persistent*' effect on the remarriage rates of widows aged 15-59 years and on prime age widowers. In general, the removal of the marriage penalty increased remarriage rates of females aged under 65 by between 21 and 108 per cent (Baker *et al.*, 2003:22-23 and 44). Results for females aged over 65 are small and statistically insignificant. They estimate that the remarriage rates of widowers aged 45 to 59 increased by 20 to 52 per cent following the removal of the marriage penalties. The results for older males are ambiguous and can be statistically insignificant. Widowers also had higher remarriage rates than widows. The impacts of the removal of the marriage penalty in the pension scheme was larger in Quebec, which is possibly because the size of the penalty was larger in the province than elsewhere. Baker *et al.* (2003:29) suggest that the rise in remarriages after the removal of the penalties was mainly by individuals who had already identified a partner and possibly had been previously cohabitating.³² It was thought likely that it would take a longer period of time for any widows or widowers who decided post-reform to re-enter the marriage market to find a suitable partner and remarry.

A separate analysis using survey data suggests that individuals most affected by the removal of the penalty were both more educated and wealthier (Baker *et al.*, 2003:28-31). The latter is possibly because the laws relating to the treatment of assets and income in Canada favour marriage over cohabitation. However, the sample sizes in this analysis are small and many of the coefficients are not statistically significant.

³² The marriage penalties in the survivor pensions only applied to people who remarried and not to those who cohabited.

Baker *et al.* (2003) do find a positive 'pension' effect for women aged under 65. However, the findings should be treated with some caution as there are outstanding queries about the quality of the data.

2.3 Overview

Underpinning the majority of the studies reviewed in this chapter is Becker's economic theory of marriage – that women will decide to marry if the benefits of doing so exceed the costs, see Section 1.5.2. Associated debates about whether there are local 'marriage markets' (in particular a lack of marriageable men) and an 'independence effect' (whether higher female earnings lead to more or less marriage or cohabitation) inform the analysts' selection of control variables.

The Beckerian utility maximisation model predicts that marriage penalties in the welfare system would lead to decreases in marriage (and increases in divorce). It is possible to find selected studies that provide some evidence for this outcome. There is US evidence that welfare reform (in the form of AFDC waivers and TANF) has been less 'anti-marriage' than AFDC (Burstein, 2007:421). However, in the non-experimental literature, observed welfare effects are less strong once controls for unobserved variables are included in models. Moreover, a major meta-analysis of US studies finds no significant overall effect on marriage/cohabitation.

Evidence for the impact of tax credits on union formation in the UK and US is fairly consistent – there is, at most, a modest negative impact on marriage. In the UK the introduction of WFTC meant single parents were less likely to marry than childless single women.

Several of the studies demonstrate that any impacts vary by sub-group. Differential impacts have been found by age of child, benefit duration, marital status (marriage vs. cohabitation), race and gender, type of policy intervention, and whether married or cohabitating. Welfare effects on union formation can also be lagged, and US and Canadian studies highlight that findings vary by local context. Data problems also undermine the robustness of some studies.

Overall, there is no set of studies that encompass analyses of an extensive range of sub-groups, explores long term effects, has high external validity, and uses robust data. Tentatively, this review finds that whilst there are some studies showing a negative effect on marriage/cohabitation, there is, in general, no consistent evidence for a large and significant welfare effect on union formation.

3 Union dissolution

Summary

A relatively small number of studies on welfare systems and union dissolution are reviewed. These studies do not always distinguish between marital breakdown and cohabitation breakdown.

Only one United Kingdom (UK) study is reviewed, which reveals that the introduction of Working Families Tax Credit (WFTC) had no overall impact on mothers' decisions to dissolve unions. However, if the male partner had low earnings (that is, working less than 16 hours per week) the WFTC increased the divorce/separation rate (by 2.4 percentage points; an 80 per cent increase). In addition, for this sub-group, the divorce/separation rate was slightly higher where:

- the woman had a 'high' level of education ('A' Level or above) (2.6 percentage points); or
- there were young children (aged under five years) in the family (three to four percentage points).

For the US there is weak evidence that those who could gain under the tax system could separate, but mixed evidence as to whether benefits had a significant impact on divorce/separation rates.

An Australian study shows that over a 12 month period income support recipients were more likely to separate than non-recipients (by 1.8 percentage points). However, this study also illustrates the importance of other factors that have an affect on union dissolutions (such as, levels of satisfaction and whether the couple were cohabitating rather than married). In some cases these other factors are more important in terms of the size of the impact they have on union dissolution.

Overall, the small number of studies, the mixed findings, queries about the robustness of some of the studies and that they do not distinguish between dissolving marriages and cohabitations mean that there is no overwhelming evidence that welfare systems have had a major impact on union dissolution.

3.1 Introduction

This chapter takes forward the discussion in the previous chapter on partnering by considering union dissolution. There are fewer studies on union dissolution than on partnership formation and childbearing. In general, the studies consider the dissolution of unions, and do not always distinguish between marital breakdown and cohabitation breakdown. This is a potential shortcoming as conceivably different factors leading to dissolution may be operating in marriages and cohabitations.

The evidence of the impact of welfare systems on union dissolution is considered by country:

- the UK, see Section 3.2.1;
- the US, see Section 3.2.2), and
- Australia, see Section 3.2.3).

3.2 Research evidence on union dissolution

3.2.1 UK evidence on union dissolution and the welfare system

Only one UK study, Francesconi *et al.* (2007), has been found on welfare systems and union dissolution. They explore whether WFTC had any impact on mothers' decisions to divorce/separate.³³

Box 3.1 Further details - Francesconi *et al.* (2007)

Francesconi *et al.* (2007) develop a household bargaining model and test it using longitudinal data on 3,235 married and cohabitating couples from the British Household Panel Survey (BHPS) for the period 1991 to 2002 (Francesconi *et al.*, 2007:27). The women in the couples were aged at least 16 years and born after 1946. Of the families, 1,430 had dependent children. The BHPS data for married couples show that divorce rates were slightly higher for those couples with children (three per cent) than those without children (two per cent) (Francesconi *et al.*, 2007:28 and 48). To focus on the population of interest, the data excluded couples where the man worked more than 16 hours per week and had high earnings (that is, was in the top earnings quartile). Also excluded from the analysis were: couples where one partner was long-term sick or disabled, or in school full-time; and couples where the man worked more than 16 hours and had a high income (earnings in the top quartile of the income distribution).

³³ Their paper refers to 'married mothers', but the analysis does not distinguish between married women, cohabitating couples or other types of 'living-in' partnerships in the sample. Thus the results more properly cover partnership dissolution. Their study also considers the impact of WFTC on work incentives and use of paid child care.

Box 3.1 continued

They adopt a difference-in-difference approach. The statistical analysis is based on regression models that take married mothers with children as the treatment group and married women without children as the control group. The models include controls for individual characteristics (such as age, education, region of residence, and number and ages of children) and individual fixed effects (Francesconi *et al.*, 2007:29-30). The models also capture non-WFTC policy changes, such as the introduction of the minimum wage.

The analysis shows that for the sample as a whole there is **no evidence of an impact on union dissolution** (see Section 2.1.2) for married/cohabiting mothers following the introduction of WFTC (Francesconi *et al.*, 2007:36). Similarly, the reform did not affect the divorce/separation rate of married/cohabiting women with partners who were in WFTC eligible employment.

However, there were significant differences for certain sub-groups. For mothers in partnerships with low earning men (that is, where he did not work or worked for less than 16 hours per week) the introduction of WFTC led to a 2.4 percentage point **increase** in the divorce/separation rate compared to their childless counterparts ($p < 0.05$) – equivalent to nearly an 80 per cent increase in their divorce/separation rate:

'The result implies that for such women, the introduction of WFTC reduced the gains from marriage. This is consistent with substantial improvements in the employment and financial positions of single mothers as a result of the reform ...'

Francesconi *et al.* (2007:36)

Further analyses of this sub-group (married/cohabiting mothers in poor households) show that the divorce/separation rate was significantly higher (2.6 percentage points) following the reform for women with a 'high' level of education (that is, with an 'A' level or higher qualification) (Francesconi *et al.*, 2007:38 and 56). Across the sub-group there was no statistically significant effect for those with lower educational qualifications. However, controlling for number of children shows that for married/cohabiting women with husbands with low earnings and young children (that is, children aged four years or under) the introduction of WFTC significantly increased the divorce/separation rate (by 3 to 4 percentage points) irrespective of whether the mothers had low or high educational qualifications. Thus the impact of WFTC on union dissolution was higher in families with young children (see Section 1.4.2). Francesconi *et al.* (2007:38) point out that the child credit element of WFTC was generous for families with young children. A generous childcare credit implied that there were potentially large financial gains for single parents in eligible employment, but no gains if they remaining married to a husband working fewer than 16 hours per week.

Hence:

'The requirement for both parents to work at least 16 hours per week may therefore inadvertently have contributed to a considerable increase in the divorce rate for a subset of married women.'

Francesconi *et al.* (2007:28)

Indeed, there were no statistically significant effects on the divorce/separation rate for women married to men working 16 or more hours per week with either low or high earnings. Suggesting that the more generous tax credit that these sub-groups received left couples unaffected by the reform.

There are some limitations to this analysis, first, (and by definition) the effects are only for women with children, secondly, the analysis does not distinguish married from cohabiting mothers, yet United States (US) evidence suggests these groups may respond differently to welfare incentives, and thirdly, it is not clear that childless married women are the best comparator for married parents.

More UK studies are required in order to determine whether Francesconi *et al's* (2007) findings are replicated and if they also apply to the current welfare system.

3.2.2 US evidence on union dissolution and the welfare system

Some commentators claimed that in the US the welfare system can act as a disincentive for marriage. A woman with little or no earnings might have been entitled to Aid to Families with Dependent Children (AFDC) and later Temporary Assistance for Needy Families (TANF) if she separated from the father of her children. Moreover, as AFDC-Basic and the associated Food Stamps and Medicaid were not available to couples with children, it has been suggested that they encouraged divorce and separation and so the formation of single parent families.

Dickert-Conlin (1999:218) claims to be the first to consider the impact of the combined tax and transfer systems on decisions to separate. She argues that the effects of the transfer system ((AFDC), Food Stamps and Social Security Insurance) and the tax system (including Earned Income Tax Credit (EITC)) should be considered together because of the way in which they interact for low-income households. In principle the benefit system incorporates marriage penalties – most married low-income couples would receive higher benefits if they separated – whilst the tax system offers marriage penalties and bonuses – in general, it rewards marriage for low-income single earner couple, but penalises marriage for two-earner couples. Using panel data from the 1990 Survey of Income and Program Participants, Dickert-Conlin (1999) examines whether married women aged 18 to 44, who were calculated to have a marriage penalty, subsequently separated over a 17 month follow-up period. The estimates for marriage penalties are derived using a simulation model (as used in Dickert-Conlin and Houser (1998)) that 'divorces'

married couples.³⁴ Over the subsequent 17 months 131 couples separated – a divorce rate of four per cent. Her analysis shows that those couples more likely to gain through separating by receiving a lower (1990) tax liability were more likely to separate (Dickert-Conlin, 1999:228-229).³⁵ The estimate for the penalty arising from the benefit system, although suggesting that the more a couple would gain in benefits if they separated the more likely they were to separate, was statistically insignificant. The model predicts that making the tax system marriage neutral would increase the chances of couples separating by 3.3 per cent (Dickert-Conlin, 1999:230). Making the tax system marriage neutral, somewhat surprisingly, increases the rate of separation, because the so-called ‘marriage tax penalty’ was, in fact, an average subsidy of \$498 per annum to married couples. Dickert-Conlin (1999:234) concludes that the analysis provides ‘... *weak support that taxes [which include EITC] affect the decision to separate.*’ The model, however, only considers the survival of marriages over a short period of time.

Ono (1998:685) using data from the Panel Study of Income Dynamics for 1968 to 1985 finds that receipt of AFDC in the previous year had **no** significant effect on couples’ decisions to separate. Where couples in receipt of AFDC did separate this was because of the husband’s poor economic position rather than the possibility of the wife becoming economically independent via AFDC after marriage. Ono (1998:688) concludes:

‘... the results in this study do not support the argument that a wife’s high potential for receiving AFDC after marriage encourages marital dissolution.’

These findings resonate with Zimmerman’s earlier study on states’ expenditure on public welfare and divorce (Zimmerman, 1991). She found that, controlling for other variables, the best predictor of (then) current state divorce rates was the states’ prior divorce rates (Zimmerman, 1991:144). Zimmerman (1991:141) interprets states with higher per capital expenditure on public welfare programmes as being more socially integrated. Such societies are seen as sharing a general consensus on rules and norms and supportive of family stability and cohesion. Accordingly, Zimmerman (1991:146) concludes that ‘welfare state activity’ does **not** have a destabilising effect on family life.

³⁴ To assess the effect of the tax and transfer systems on separation decisions she uses probit regression and controls for individual characteristics (for example, age, education and race) and state characteristics (for instance, state unemployment rate). Variables are also included to control for the costs of separation (for example, number of children in the family and marriage duration). The non tax and transfer explanatory variables are lagged to 1990 as they presumably affected the decision to separate, prior to the actual separation. Also, the women in the analysis were in their first marriages and had remained married throughout the 1990 calendar year.

³⁵ The coefficient is 0.0041 and is significant at the six per cent level. A \$100 increase in tax liability when married would lead to a 0.04 percentage point increase in separations.

However, these studies do not capture later welfare reforms in the US. The Bitler *et al.* (2004) study already mentioned, in Section 2.3, also considered flows out of marriage due to state waivers and TANF. By considering flows the authors exclude the stock of long-term marriages that were at a low risk of dissolution. Bitler *et al.* (2004:224-225) find that AFDC waivers reduced the rate of new divorces by 5.5 per cent ($p < 0.01$) compared to the AFDC programme, whilst TANF reduced new divorces by 12.6 per cent ($p < 0.10$).³⁶ In other words, welfare reform, as intended by policy makers, did lead to a fall in the number of new divorces. As a consequence there may also be fewer remarriages, as most divorcees remarry. However, the doubts expressed, in Section 2.2.3, about the robustness of the TANF results apply here as well. Moreover, the fall in new divorces in AFDC waiver states is what would be expected given the policy intent. Yet the comparison of waiver states with non-waiver states gives limited guidance on the welfare effect of current programmes.

3.2.3 Australia evidence on union dissolution and the welfare system

There is some evidence from Australia that receipt of welfare benefits (Income Support (IS)) imposes a marriage penalty. Bradbury and Norris (2005), using administrative and survey data, show that married benefit recipients were more likely to separate than non-recipients.³⁷ Using a sample of the administrative data for Family Tax Benefit Part A (FTBA), which is a means-tested benefit paid to families with dependent children, they find that over a one year period (June 2002 compared with June 2001) recipients of the higher rate of FTBA were, on average, three to four percentage points **more** likely to separate than those receiving the low rate of benefit ($p < 0.05$) (Bradbury and Norris, 2005:428-431). The higher rate of FTBA was paid to couples in receipt of IS or who had low to moderate family incomes, whilst the lower rate was paid to those with higher incomes. The analysis also shows that women in common law marriages were slightly **more** likely to separate (by 5.29 percentage points ($p < 0.05$)) than those with low-incomes. Moreover, having a younger child **decreased** the likelihood of separation, but having an older child slightly **increased** the chances of separation. This analysis, which was restricted to FTBA recipient families with at least one child aged under 16, included a limited number of controls for age of recipient, relationship type (whether legal or common law marriage) and age and number of children. Given findings reported elsewhere in this review, this limited degree of control raises doubts about the robustness of these findings.

Bradbury and Norris (2005:431-442) also report more elaborate analyses using longitudinal survey data with controls for income, demographic and human capital

³⁶ These estimates are based on models that include labour market and demographic controls as well as state and year fixed effects.

³⁷ The analyses reported here cover both legal marriages and de facto or common law marriages.

variables (for example, relationship type, age at marriage, marriage duration, number and age of children and educational attainment) and, what they term, potential intervening variables (such as, level of satisfaction with life and the relationship, mental health, emotional well-being, saving habits, social functioning and 'vitality'). The data were taken from the first two waves of the Household, Income and Labour Dynamics in Australia survey. Using logistic regression the authors examine for mixed-sex legally married and de facto couples of working age the variables associated with separation. In particular whether, over a 12 month period couples who were income support recipients, were **more** likely to have separated than non-IS recipient couples. They find that couples receiving IS were, on average, more likely to separate (by 1.8 percentage points ($p < 0.10$)) than couples not in receipt of benefit.

However, the analysis reveals that other factors were significant; indeed, some had a larger impact upon separation. In particular, those currently in a *de facto* relationship (that is, cohabitating) were 3.4 percentage points more likely to separate than those who had never been in such a relationship. Confirming other research that cohabiting couples were more likely to end their relationship than legally married couples. Couples were more likely to separate where:

- they married at a young age (each additional year of average age at marriage reduced the likelihood of separation by 0.46 percentage points);
- they were dissatisfied with their relationship (2.4 percentage points);
- the male was anxious or depressed (0.9 percentage points);
- they had a low score for social functioning (0.84 percentage points); and
- the couples had high levels of vitality (1.3 percentage points) – that is, they did not say they lacked energy or felt tired – a result that is '*puzzling*'.

This analysis is limited by the short period (one year) over which changes in relationships are observed and this complicates the interpretation of the findings. For instance, male depression may not be a cause of separation as instability in the relationship before the survey interview might have led to their poor mental health. The observation period is also too short to test if unemployment is associated with dissolution. This is a potentially serious shortcoming because other research shows an association between union dissolution and unemployment (see Sections 1.4.1 and 1.5.4). Moreover, there may be unobserved variables not included in the analysis that would account for the association between receipt of IS and separation. Indeed, there could be other factors that lead some individuals to have low-incomes and to be more likely to separate.

3.3 Overview

As outlined in Section 1.5.4, the Beckerian model of marriage underpins the studies discussed in this chapter. The theory posits that unions dissolve when the benefits of becoming single again exceed the costs. The studies tend to include data on

female and male earnings because of possible 'stability' and 'independence' effects. The former suggests that higher earnings make a partner more attractive and/or reduce levels of conflict within a union and so reduce the likelihood of dissolution. The latter, on the contrary, suggests that increased earnings mean that an individual is in less need of a partner in order to survive financially and so increases the risk of union dissolution.

Across the three countries considered here, the evidence for a welfare effect on union dissolution is mixed. To the extent that there is an effect it appears to be larger for certain sub-groups; the UK and Australia studies suggesting that the effect is greater in families with lower earnings. However, the small number of studies, the mixed findings, queries about the robustness of some of the studies and that the studies tend not to distinguish between dissolving marriages and cohabitations mean that there is no overwhelming evidence that welfare systems have a major impact on union dissolution.

The Bradbury and Norris (2005) and Zimmerman (1991) studies also serve to highlight the factors other than the welfare system that affect people's decisions to dissolve unions (and some of these factors are outlined in Section 1.5.4).

4 Childbearing and single parents

Summary

In the United Kingdom (UK) and the United States (US) there has been some concern expressed about the recent growth in non-marital births and single parenthood. One policy response in the US has been the introduction of the family cap, which seeks to limit further births by not paying extra benefit when women have children above a threshold. Several of the US studies reviewed in this chapter examine the impact of the family cap.

Of the three UK studies of Working Families Tax Credit (WFTC) reform, two find no significant impacts (Francesconi and van der Klaauw (2007); Francesconi (2007)); and the third an increase in birth rate for couples (Brewer *et al.* 2007).

The review found relatively few studies on fertility and moves into single parenthood at the European level. González (2005 and 2007) finds a positive and significant association between welfare benefits and the incidence of single motherhood. However, as González' (2007) analysis becomes more sophisticated the size of the impact of benefits on single motherhood and single headship becomes smaller and eventually statistically insignificant.

An Organisation for Economic Co-operation and Development (OECD) study modelling impact of social security (payroll) taxes for defined-benefit, Pay As You Go (PAYG) pension schemes on fertility finds that they do reduce fertility. However, whilst the PAYG pension scheme may not compensate parents other parts of the tax and transfer system may do so. In addition, individuals are not simply utility maximisers, hence it is possible that the '*unintended consequences*' of PAYG will be less than their models suggest.

Continued

Findings from US literature on the impact of Aid to Families with Dependent Children (AFDC) on female headship show only small or no effects. Hoynes (1997) finds '*no evidence that AFDC has a significant effect on female headship decisions.*' Lichter *et al.* (1997) find that many of the variables they analyse only have a relatively small effect on female headship, and argue that cultural changes underpin the observed increase in female headship. More recent studies that take into account unobserved heterogeneity at the level of the individual find that the welfare effect is not only small but statistically insignificant.

Early US studies suggest positive welfare effect on the fertility of unmarried women. But effects largely disappear when analysts control for unobserved state characteristics. Subsequent studies suggest minimal or no effect of welfare on fertility – with exception of family cap policies. The family cap is a mixed picture – most studies find little or no effect; a small number of studies report either a small positive effect (Sabia, 2006; Horvath-Rose *et al.*, 2008), or counter-intuitively a small negative effect.

4.1 Introduction

In the UK and the US there has been some concern expressed about the recent growth in non-marital births and single parenthood (see Sections 1.4.1 and 1.4.3). This chapter reviews the literature on whether or not welfare benefit systems have an impact on women's fertility and living arrangements.

Having a child out-of-wedlock is one route to single parenthood; the others are union dissolution and widowhood. All of these routes into single motherhood are covered in this chapter (rather than elsewhere in the report). However, many of the empirical studies do not distinguish between the routes followed; much of the US literature is focused on female headship decisions which encompass fertility decisions by unmarried women as well as the other two routes to single parenthood. The literature can also distinguish between single mothers who live on their own with their child(ren) (that is, lone parents or single heads) and a wider group of single mothers who co-reside with a family member, such as a grandparent.

This chapter considers three UK studies (Section 4.2.1), three cross-national comparisons (Section 4.2.2) and several US studies (Section 4.2.3). With respect to childbearing many of the US studies focus on the family cap.

4.2 Research evidence

Much of the literature on the impact of welfare systems on single parenthood is from the US. As outlined in Section 1.6.1 these studies, typically, take advantage of state variations in benefits and Earned Income Tax Credit (EITC).

They tend to model the probability of being a single parent/female head or having a non-marital birth as a function of one or more of the following sets of variables:

- State characteristics, including the generosity of benefits. The analyses often allow for unobserved variables that might affect demographic behaviour (in the US literature this is known as state fixed effects).
- Individual demographic characteristics, including race, age, and educational attainment/number of years of schooling. Some analyses allow for unobserved variables at the level of the individual that might affect demographic behaviour (known as individual fixed effects).
- Economic characteristics of women, including female wage levels and labour market attachment. These variables reflect theoretical debates about whether there is an 'independence effect' whereby higher family income enables women to support children on their own or whether the lack of economic opportunities reduces the 'opportunity cost' of childbearing and so leads to non-marital births.
- 'Marriage market' characteristics, including local gender ratios, male earnings and employment prospects. These variables reflect the notion that the supply of marriageable men will affect the marriage behaviour of women.

In general, the results of the analyses are mixed – some find that the welfare system does significantly affect the formation of single parent families and non-marital births whilst others find no effect.

4.2.1 UK evidence on welfare systems and childbearing and single parenthood

Of the three UK studies that focus on the 1999 WFTC reform, two studies find no significant impacts and the third finds that the introduction did increase the birth rate for couples.

Francesconi and van der Klaauw (2007) use British Household Panel Survey (BHPS) data for 1991 to 2001 to explore the impact of the WFTC on the fertility decisions of single mothers and moves into lone motherhood by single childless women.³⁸ The analysis reveals **no** statistically significant effect of WFTC on either the birth rate of single mothers or on the transition into lone parenthood by single childless women. Although WFTC did reduce the likelihood of an additional child by single parents by 0.7 percentage points, which is a relatively large reduction of 20 per cent over the annual average birth rate (3.7 per cent), it is not statistically significant (Francesconi and van der Klaauw, 2007:26-27). Sub-group analysis by number and age of child(ren) also shows no significant impact of WFTC on the fertility rates of lone parent.

³⁸ The authors also examine the impact of WFTC on employment, use of childcare and marriage rates. The analytical method is difference-in-difference. Further details of the study are provided in Section 1.6.3.

Francesconi and van der Klaauw (2007:27-28) also investigate whether WFTC, which was more generous to single parents than Family Credit (FC), provided incentives for single childless women to become unmarried mothers.³⁹ As mentioned previously, no significant effect was found. Indeed, WFTC had the opposite effect; it reduced the likelihood of single childless women forming lone parent households by 0.16 percentage points. Although statistically insignificant, this is a relatively large effect, a 15 per cent reduction over the average annual rate (1.3 per cent) of entry into lone parenthood for single childless women over the observation period.

That WFTC did not lead to a statistically significant increase in fertility suggests that the gains from working (and the reduction in childcare costs) outweighed the incentive effects to have extra children that arising from the credit being more generous than its predecessor, FC.

However, the findings for couples are mixed. The study by Francesconi *et al.* (2007) mentioned in Section 3.2.1 found no statistically significant effect of the impact of WFTC on either the birth rate of married mothers or entry into motherhood for married women without children (2007:37). Yet Brewer *et al.* (2007) find that the increase in the generosity of payments to families with children (through the introduction of WFTC and changes to IS) led to a 1.2 percentage points **increase** in births amongst couples with low levels of education (Brewer *et al.*, 2007:25). Equivalent to a ten per cent increase in births or nearly 20,000 additional births. The effect of the reform was also stronger for women who had not previously had children, and this may reflect that payments increased more for first births than for second or subsequent births. The effect was reduced for women for families where the youngest child was aged under three or aged eight or over, which may reflect preferences about the timing of children.

Brewer *et al.* (2007:29) argue that because the reforms did not have a significant effect on the woman's age at first birth, then the estimated increase in births represents an increase in total births rather than families bringing forward the timing of a birth that would have happened anyway.

That WFTC increased the birth rate for couples but not for single parents might be because, whilst WFTC increased employment for single parents (and so reduced fertility), for women in couples employment impacts were smaller (some women even reduced their hours of work) and so any effect on childbearing would be larger (Brewer *et al.* (2007:13-14).

³⁹ The analysis is of entry into single parenthood by single childless women – moves into single parenthood by married women are not considered.

Box 4.1 Further details - Brewer *et al.* (2007)

Brewer *et al.* (2007) use a difference-in-difference approach and data for women aged 20 to 37 years in couples (either married or cohabitating) from the Family Resources Study (FRS) and Family Expenditure Survey (FES) for 1995 to 2003. The differences compared are changes in fertility for low-income couples before and after the WFTC reform. For both before and after the reform, couples affected by the reform are compared with couples unaffected by the reform. The comparison with couples unaffected by the reform means that some control is introduced into the comparison for unobserved factors that vary over time. The low-income couples affected by the reform are defined as where the male and/or female partner left school at or before the compulsory school leaving age, whilst those affected by WFTC are defined as where both partners left school at age 18 or above. The analysis includes controls for socio-demographic variables (such as age, education, tenure, number of children and ethnicity) and male and female hourly wages.

4.2.2 Cross-national evidence on welfare systems and childbearing and single parenthood

Much of the analysis using data for the US is comparative in that it can incorporate differences between states – that is, regression models with state fixed effects.⁴⁰ In this sub-section, however, the focus is on cross national studies.

The review found relatively few studies on fertility and moves into single parenthood at the European level. Two studies by González (2005 and 2007) provide an analysis of the impact of welfare benefits on the incidence of single motherhood. The earlier study uses pooled data for 14 countries from five waves of the Luxembourg Income Study for the 1980s and 1990s.⁴¹ The data were for all women aged 18 to 55 years. Estimates were made for two routes into single parenthood; those that were never married, and those who were divorced, separated or widowed. However, the analysis did not distinguish between cohabitating and married couples.

A number of the variables in the models represent women's expectations about their wages, hours of work, benefits and husbands earnings. In general, the values for these variables are the relevant averages for a given country and period. Thus expected benefits are the '*average received by each household type in a given country and period.*' (González, 2005:16). The benefits include family-related

⁴⁰ In regression analysis fixed effects are used to take into account omitted factors or unobserved heterogeneity that may affect the variables of interest. This gives more robust results, but involves assuming that the variables are time invariant, and requires variation amongst the observations for a variable.

⁴¹ The 14 countries are: Australia, Austria, Belgium, Canada, Finland, Germany, Hungary, Ireland, Israel, Italy, Luxembourg, Netherlands, UK and US.

benefits (like Child Benefit), social assistance benefits (for instance, IS) and in-kind benefits (like Food Stamps and childcare subsidies).

The study finds a positive and significant ($p < 0.001$) association between welfare benefits and the incidence of single motherhood. A ten per cent increase in benefits paid to single parents (keeping benefits to other households unchanged) would **increase** the incidence of single mothers by five per cent (González, 2005:18). Other significant findings were:

- Higher male earnings (per annum) and employment rates reduced the incidence of never married mothers but increased the incidence of divorced, separated or widowed mothers. The overall effect on single mothers, however, was small and insignificant.
- Higher female wages (per hour) reduced the incidence of single mothers (for both never married and divorced, separated or widowed).

However, these findings should be treated with some caution. The Luxembourg Income Study is not a panel dataset and so the analysis does not control for unobserved variables at the individual level, and as a consequence may over-estimate the significance of the impact of welfare benefits on single parenthood. Moreover, data were not available for all waves for all of the countries; indeed, data are available for all five waves for only two countries (Luxembourg and the US). The analysis also excluded from consideration that unmarried mothers might marry and divorced mothers might remarry (González, 2005:9).

The second study (González, 2007) examines the impact of welfare benefits on the incident of single motherhood and single headship amongst women across 14 European countries. Here 'single motherhood' is defined as an unmarried woman aged 18 to 35 living with a dependent child aged under 18 years and not cohabitating with a partner, but they could be co-residing with other relatives such as a grandparent. 'Single headship' (or lone parenthood) is a sub-set of single mothers who live on their own with their dependent child – that is, there is no co-residency. Separate analyses were conducted for these two groups. Young women were examined because their family formation decisions are more likely to be influenced by benefit levels and labour market conditions.

The analysis uses pooled data from the European Community Household Panel (ECHP) for 1994 to 2001. The 14 countries, grouped by social protection system, are:⁴²

- Anglo-Saxon countries: Ireland and UK;
- Nordic countries: Denmark and Finland;
- Benelux countries: Belgium, Luxembourg and Netherlands;
- Central European countries: Austria, Germany and France.
- Southern European countries: Italy, Spain, Greece and Portugal.

⁴² Of the EU15 countries Sweden is omitted because longitudinal data are not available in ECHP. Denmark is the omitted country in the regressions.

The main measure of benefits used in the analysis is the predicted benefit (for social assistance and family allowance schemes) for a single parent with two children who works 20 hours per week (González, 2007:398).

The reported analysis moves from simple descriptive analysis to logit regression, which becomes increasingly advanced by incorporating country fixed effects and country-specific time trends, as well as individual fixed effects. The country fixed effects control for unobserved factors at country level (such as, public tolerance of single parenthood) that might affect the level of benefit and prevalence of single mothers. To allow for unmeasured changes over time that were correlated with changes in welfare benefits the analysis includes time trends (that vary by either individual countries or by the groups of countries listed previously).

The analyses also include individual-level controls – age and educational level – that seek to measure the respondents' labour market prospects, attractiveness as a partner, and preferences for marriage and children, plus country-level controls – male unemployment rate and median adult male wage rate – as indicators of labour market conditions (González, 2007:398-399). As the author notes (González, 2007:410) more detailed variables on the labour market, education and the 'marriage market' would be '*desirable*'.

The descriptive analysis, a plot of the proportion of single mothers against predicted benefits levels for each country for each year, shows that '*... countries with higher benefit levels also have higher incidence of single mother households.*' (González, 2007:400). (The correlation coefficient is 0.34.) The logit regression analysis allows for changes across countries and over time to be taken into consideration (González, 2007:403-407). Having controlled for unmeasured factors that could lead to changes in benefits and the incidence of single motherhood at different rates in different countries or groups of countries, González (2007:394) finds that '*... an increase in yearly benefits to single mothers of €1,000 would increase the incidence of these households by about two percent.*'⁴³ This single motherhood is due to both out-of-wedlock childbearing by never married women and divorce by married women with children González (2007:406-408).

González (2007:405 and 406-407) also finds that less educated women are more likely to become single mothers and single heads of households.

Essentially, as the analysis becomes more sophisticated – that is, takes into account more possible unobserved heterogeneity – the size of the impact of benefits on single motherhood and single headship becomes smaller and eventually statistically insignificant. It is the inclusion of controls for unobserved factors at the level of the individual that reveals no statistically significant impact of benefits on the incidence of single mothers. Rather than saying that the analyses with significant positive findings might be spurious, the author attributes this insignificance to the lack of variation in the data, which in turn is due to the further disaggregation of the data.

⁴³ If country and time effects are not taken into account the impact of benefits on single mothers is higher. An increase in yearly lone parenthood benefits of €1,000 increases the incidence of single mothers by about 18 per cent.

That benefits have no significant impact on US female headship decisions once individual effects are included in models is also a finding of Hoynes (1997a) (see ahead for further details). This may mean that the positive effect mentioned previously '... *maybe attributable to unobserved, individual-specific heterogeneity.*' (González, 2007:409). However, González (2007:409) queries the need to include individual fixed effects in the analysis arguing that migration across European countries is less than across US States and hence their inclusion is less important. In addition she points out that significance levels will fall because of the reduced number of cases available for the analysis.

The significance of the González (2007) study is not simply the reported positive effect of benefits on single mothers but that it highlights how data limitations give rise to interpretative and analytical challenges. Although the total number of observations is 172,437, for the regression analyses with fixed effects there is little variation in the benefits variable once other variables are introduced (González, 2007:410). The analysis does not capture long-term trends in benefits or the incidence of single mothers; indeed, the average number of observation periods per respondent is six.

A third study by Ehrlich and Kim (2007) models the impact of social security (payroll) taxes for defined-benefit, PAYG pension schemes on fertility and family formation across the OECD (the findings for the latter are discussed in Section 2.2.2). They use two approaches to assess this effect: a simulation model and regression analysis. The simulation model shows that a one per cent increase in defined-benefit, PAYG taxes reduces the family fertility rate (that is the number of children per parent) by 0.075 per cent and the total fertility rate by 0.306 per cent.⁴⁴ Moreover, social security taxes for defined-benefit, PAYG schemes accounted for 48.1 per cent of the fall in the total fertility rate in OECD countries between 1965 and 1989 (Ehrlich and Kim, 2007:9). The regression analysis shows that social security taxes for pensions reduce total fertility rates for all women aged 15-49 (averaged over a five year lead period) by 0.284 per cent and the family fertility rate by 0.119 per cent (Ehrlich and Kim, 2007:17).

The authors contend that if a parent has a lower (or zero) rate of fertility this does not affect their pension, as the benefits are defined by the system and are the same as for parents with many children:

'Since defined benefits are independent of contributions made by children, parents are not compensated individually for raising more or better-educated children. As a result, PAYG payroll taxes induce behaviour that is not socially optimal: They diminish the incentive of individual workers to bear and invest in children, save for retirement, or generally form families altogether, because they lower the private rewards from family investments relative to alternative individual pursuits.'

Ehrlich and Kim (2007:4)

⁴⁴ Formally, the social security tax rate used is the old-age, survivor and disability-insurance proportion of social security benefits as a share of Gross Domestic Product (GDP) (Ehrlich and Kim (2007).

However, whilst the PAYG pension scheme may not compensate parents, other parts of the tax and transfer system may do so. In addition, individuals are not simply utility maximisers, hence it is possible that the '*unintended consequences*' of PAYG will be less than their models suggest.

4.2.3 US evidence on welfare systems and childbearing and single parenthood

Out of wedlock childbirth and single parenthood have been perceived to be problems by policy makers and others in the US. Indeed, an '*explicit goal of policymakers in drafting welfare reform policies was to reduce incentives for non marital childbearing.*' (Horvath-Rose *et al.*, 2008:119-120). Section 101 of the Personal Responsibility and Work Reconciliation Act of 1996 (PRWORA) see Section 1.4.3) states '*Congress makes the following findings:*

- *The increase in the number of children receiving public assistance is closely related to the increase in births to unmarried women.*
- *The negative consequences of an out-of-wedlock birth on the mother, the child, the family and society are well known.*
- *Therefore, in the light of the demonstration of the crisis in our Nation, it is the sense of the Congress that the prevention of out-of-wedlock pregnancy and reduction in out-of-wedlock birth are very important Government interests and the policy ... is intended to address this crisis.'*

Horvath-Rose *et al.* (2008:120)

PRWORA granted some flexibility to states to decide on the conditions of entitlement to welfare benefits (Ryan *et al.*, 2006:106). For example, it allowed states to decide how long a new mother could remain out of the workforce following child birth. Under the Job Opportunities and Basic Skills (JOBS) programme introduced by the Family Support Act in 1988 mothers with young children were usually exempted from the requirement to work until the child was three years old. However, under Temporary Assistance for Needy Families (TANF) two states did not provide any exemption at all so that mothers of newly born babies could be required to work immediately whilst in a further six states only women with a child under six months was exempted from the requirement to return to work. In the other four, mothers were not required to work until their child was two years old. According to Ryan *et al.*, (2006:105) the limited availability of affordable childcare in many areas makes these obligations '*quite burdensome*'.

The family cap is one of three broad government initiatives under TANF that directly target the prevention and reduction of out-of-wedlock pregnancies. The other two are the establishment of a 100 million dollar incentive each year for five years divided amongst the top five states with the largest decline in the illegitimacy ratio of abortion to live births (US congress, 1996 cited by Ryan *et al.*, 2006:104) and an Abstinence Education Grant Program (AEGP) (Camasso, 2004:454). The family cap, which was also a feature of some AFDC waiver programmes, was

specifically designed to curb the number of children women could afford to have by reducing benefits for children born while the mother is in receipt of welfare benefits (Horvath-Rose *et al.*, 2008:120) thus ending the traditional practice of providing families on welfare with additional benefits in respect of a newly born child (Kearney, 2004:295). Nineteen states adopted family cap policies prior to PRWORA and a further six included family caps as part of their TANF programmes (Horvath-Rose *et al.*, 2008:120). Five states have introduced partial family caps either by reducing but not eliminating additional benefit for a new born child or paying the increase in-kind or to a third party (Kearney, 2004: 39).

There are a number of US based studies that have investigated the impact of welfare benefits on single parenthood and fertility. The empirical studies can be roughly divided between pre- and post- welfare reform periods (Joyce *et al.*, 2004:477). Crudely, if there is a welfare effect then analyses of AFDC recipients can be expected to show an increase in fertility rates and single parenthood and the welfare reform studies (of AFDC waivers and TANF) a fall in non-marital births and single parenthood (reflecting policy aspirations like the imposition of the family cap).

AFDC and fertility and single parents

Much of the literature on the impacts of means-tested programmes on fertility and single parenthood focuses on AFDC. Underpinning the US analyses of AFDC is a popular view that the programme encourages childless single women to have children (Moffitt, 2003:332). Under AFDC a women having a child outside of marriage was eligible for the benefit, but typically was not if married (Moffitt, 2003:334). Thus, it was believed that AFDC included a financial incentive for non-marital childbearing. Furthermore, in some States the amount of benefit was related to family size with larger sized families receiving more benefits and this might create a further incentive to have children. However, during the 1990s real expenditure on AFDC was falling and so does not really explain the increases in non-marital childbearing and single parenthood.

Methodological issues

The early US literature on the impact of AFDC on female headship was mainly based on state-level data and used non-experimental designs. The findings from these analyses are mixed, and analysts like Hoynes (1997b:129) conclude that they '*find no evidence that AFDC has a significant effect on female headship decisions.*' (The Hoynes (1997b) analysis is discussed ahead.) Later studies controlling for unobserved variables across states do find significant and positive effects on female headship. However, the size of the effect is small. Moffitt's review (1998b) suggests that more generous AFDC benefit was associated with higher levels of single parent families, but the magnitude and significance of the association was uncertain. For the models that control for omitted state variables, Moffitt's (1998b:74-75) review finds significant and insignificant welfare effects. More recent studies that take into account unobserved heterogeneity at the level of the individual find that the welfare effect is not only small but statistically insignificant.

A similar conclusion applies to non-marital births. Much of the work in the welfare and fertility literature relies on cross-state generosity of welfare benefits paid to families with children. Early cross-sectional work suggests that AFDC had a positive effect on the fertility of unmarried women. However, Hoynes (1997a) finds that those effects largely disappear when controls for unobservable state characteristics are included. And when the study controls for individual effects as well as state effects there is no evidence that welfare increases the tendency to form female headed households for either black or white women (Kearney, 2004:299).

Klawitter *et al.* (2000) use data from the youngest cohorts of women in the National Longitudinal Survey of Youth (NLSY) to estimate models of the determinants of the initial use of AFDC. The authors claim to be one of the few studies to address the timing and determinants of initial AFDC participation. Klawitter *et al.* (2000) find little evidence that that financial, or other welfare incentives, affect the likelihood or timing of first entry onto welfare. Klawitter *et al.* (2000) find that whilst benefit levels do not appear to affect participation, the presence of a programme for medical aid to families who are not in receipt of welfare appears to affect the entrance on to AFDC for some groups. The authors suggest that this finding '*suggests that some needy mothers may stay off AFDC if they have access to an alternative source of health care assistance.*' (Klawitter *et al.*, 2000:543). Also, significant for AFDC participation are parental poverty, family structure, educational achievement and race (Klawitter *et al.*, 2000:527). The authors point out that school-related factors are prominent amongst the significant variables and:

'... may provide the best path for lower welfare participation rates and brighter future economic outcome ... policies aimed at keeping young women in school might provide alternatives to early childbearing and skills that allow older mothers to earn enough to support their families.'

Klawitter *et al.* (2000:544).

Overall, non-experimental methods show that any effects of AFDC on non-marital childbearing are insignificant, but if significant, are small.

Findings that show a welfare effect also find differences by race. For example, Lundberg and Plotnick (1990; 1995) find effects of welfare on pregnancy and abortion for white teenagers but not for black teenagers. They suggest that '*the different racial results may reflect ... important unmeasured racial differences in factors that influence fertility and marital behaviours*' (Lundberg and Plotnick, 1995:177). However, Arcs (1994; 1996) analysing data from the NLSY found no effect of welfare for either black or white women. Duncan and Hoffman (1990) rely on cross state comparison using the Panel Study on Income Dynamics (PSID) and do not find a significant effect of AFDC on births for black teenagers while An *et al.* (1993) also undertake cross state comparisons using PSID data and do not find a significant effect on the probability that a woman aged 13 to 18 has a non marital birth (discussed by Kearney, 2004: 299). However, as Kearney (2004: 299) observes, a weakness of these and other studies that rely on cross state

comparisons is that the findings are potentially biased by unobserved differences between states (see Appendix B).

Studies of AFDC, fertility and single parents

More recent studies of AFDC's effect on fertility continue to give mixed results. For example, Rosenzweig (1999) and Hoffman and Foster (2000) find that AFDC **increased** non-marital births (at least for sub-groups), whilst Fairlie and London (1997) and Acs (1996) reveal **no** significant welfare effect on childbearing.

Rosenzweig's (1999) assesses the role of AFDC and marital prospects in the fertility and marriage choices of young women in the context of a model incorporating heritable characteristics that determine marriageable prospects. The analysis is of the fertility and marital experience up to the age of 23 of eight birth cohorts of women in the NLSY. In the analysis Rosenzweig (1999) controls for both unobserved variables at state level and for cohort effects. Rosenzweig (1999) finds a significant and large positive effect of AFDC on non marital childbearing:

'Higher AFDC benefit levels and lower marital prospects induce young women to choose to have a child outside of marriage.'

Rosenzweig (1999:53)

Hoffman and Foster (2000) use data from the PSID to replicate Rosenzweig's (1999) analysis and explore the reasons as to why his findings differ from previous research. They are able to reproduce his main findings in a model that includes state and cohort fixed effects. Controlling for fertility separately by age shows no effect on teen non-marital births, but a large effect on the behaviour of women in their early 20s (Kearney, 2004:299).

On the other hand, Fairlie and London (1997) examine the relationship between incremental AFDC benefits and fertility using the 1990 panel of the Survey of Income and Program Participation (SIPP) and find a positive, although statistically insignificant, association between incremental AFDC benefits and fertility among women in receipt of AFDC. However, they also find a similar association for several non-recipient comparison groups including married women and single women who were not in receipt of AFDC. They conclude that the association found for AFDC mothers is spurious (Fairlie and London, 1997:575).

Arcs (1996) also finds no welfare effect. Arcs (1996) examines the relationship between AFDC and births to women who already have a child, using data on young mothers from the NLSY. Arcs (1996) finds that variations in benefits have no statistically significant impacts on the subsequent childbearing decisions of young mothers in general or of women who received welfare in particular. Furthermore, mothers who received welfare to support their first child are no more likely to have additional children on welfare up to the age of 23.

With respect to single mothers, and as mentioned in Section 1.4.3, increases in the proportion of single parents have accompanied falls in the real value of AFDC. Moffitt (2000) uses time series analysis to investigate if changes in wage rates can account for this increase in female headship. Using Current Population Survey (CPS) data from 1968 to 1996 for all men and women aged 18 to 65 with less than 12 years of schooling he shows that changes in wage rates do help explain the increase in single motherhood. Whilst real wage rates for less educated women stagnated over this period, those for less educated men declined sharply. This increased the female to male wage ratio, and – according to a Beckerian model of marriage – reduced the gains from marriage. This fall in the returns to marriage *'outweighed the effects of the decline in welfare benefits.'* (Moffitt, 2000:376). It also follows that the decline in marriage is not a consequence of these women becoming more financially independent. The results are stronger for white women and men, but still *'suggestive'* for the African-American population.

As mentioned elsewhere in this report, findings can be sensitive to the analytical approach adopted. Moffitt (1998b:61-65) shows how relatively small changes in the data and approach used can influence the assessment of the welfare effect on rates of single parenthood. Using CPS data for 1993 he plots the proportion of white single mothers in each state against real monthly AFDC benefits for a family of four with no other income, and fits a simple least-squares regression line.⁴⁵ This reveals only a very weak positive relationship between the two variables. However, when the dependent variable is modified to women aged 20 to 44 without a high school diploma (a sub-group with high participation rates in AFDC), a stronger positive relationship is found. Similar results are found if never-married single mothers are correlated with benefit amounts. This positive correlation arises because many states with generous benefits had high rates of single motherhood (such as, New York, California and Illinois). Using data for other years produces similar results.

To explore whether changes in benefits over time have an impact, data for levels of benefit and rates of single motherhood in 1970 are compared with those for 1993. This helps to explore whether, for instance, the increases in the rates for white single mothers were greater in those states that reduced, in real terms, their benefits the least. Such a result would confirm the simple cross-sectional benefit level analysis. However, for this change comparison the relationship between the two variables is *'weak'*, because the increases in the rates of white single mothers were fairly even across the states.⁴⁶ The difference between the two sets of analyses might be because other factors that affect benefit levels and the incidence of single parenthood are omitted from the analyses.

⁴⁵ Single mother rates are calculated as a fraction of all women aged 18 to 64. Possibly a better measure would have been to use women aged 18 to 45, and so taking out of the base older women who were less likely to have children.

⁴⁶ Similar findings were found for black women (Moffitt, 1997b:66).

The role that the analytical method adopted can play in these studies is emphasised in the study by Hoynes (1997a), who examines whether the welfare system (AFDC and Food Stamps) affects the incidence of female headship, and finds that it does not.⁴⁷ Unlike previous studies her analysis includes individual effects as well as state effects, year effects and controls for state, women and welfare characteristics.⁴⁸ This leads Hoynes (1997a) to conclude that earlier studies over-estimate the effect of welfare benefits on family structure:

'... omitting individual effects can lead to a bias through differences in the composition of states over time.'

Hoynes (1997a:111)

By implication, Hoynes' (1997a) conclusion not only applies to studies of single headship but more widely to US studies of marriage and divorce that have excluded individual effects.

Box 4.2 Further details – Hoynes (1997a)

Using a nationally representative longitudinal dataset, the Panel Study of Income Dynamics for 1968 to 1989, Hoynes (1997a:98-100) develops separate linear regressions for white women and black women. The dataset comprises women aged 16 to 50 who are married or heads of households – the data exclude co-resident single mothers. In the models the controls for the woman's characteristics include age, education and religious affiliation. The PSID data are matched with other state data.⁴⁹ The generosity of the benefit system is measured by the total value of benefits from AFDC and Food Stamps for a family of four with no other income for each state. A second welfare benefit variable is whether or not the state offered AFDC-UP. The other state variables included the unemployment rate, average wage in manufacturing, per capita income, percentage of the population aged over 65, percentage of population that are children, party of the State governor, and proportion of the State House and Senate that are Republican.

Like the later study by González (2007) mentioned previously, Hoynes finds that as more controls for unobserved heterogeneity are introduced, the size of the welfare effect diminishes and eventually becomes insignificant. That is, there is no evidence that AFDC and Food Stamps influence women's decisions on forming single person households.

⁴⁷ A female head is defined as a woman who is unmarried and has a child – the study counts cohabiting females as non-heads of households. An earlier version of this paper is included in the Moffitt (1998b) review.

⁴⁸ Year effects are included to control for any common social trends that might influence marriage decisions.

⁴⁹ Following Becker's model of marriage, in the model the woman's earnings and those of her potential spouse – which influence the net benefits of female headship and are difficult to observe directly – were accounted for by the woman's characteristics and labour market variables.

More specifically, Hoynes (1997a) reports that:

- Using the data as a cross-section (to take advantage of the variation in state's benefit levels) and not controlling for state or individual effects there is a positive and statistically significant welfare effect on female headship. For white women, AFDC and Food Stamps had a modest and significant effect on headship decisions (Hoynes, 1997a:104). For each \$100 increase in the value of the benefits, female headship increased by 0.9 percentage points (a ten per cent increase). However, living in an AFDC-UP State did reduce the economic benefit of being a sole head of household – a \$100 increase in the benefit was associated with a 0.8 percentage point fall in female headship. For black women the welfare effect was larger – a \$100 increase in benefits increased the likelihood of single headship by 1.9 percentage points; and in a AFDC-UP state it increased by five percentage points (Hoynes, 1997a:108-109).
- Controlling for state effects makes the relationship for white women close to zero and insignificant, but essentially unchanged for black women. For white women this finding is:

'... consistent with the idea that unmeasured state effects influence white headship decisions and welfare benefits. For example, a state may have a strong two-family tradition which results in fewer female headed households and less support for the AFDC program. Not taking into account state effects attributes this difference in preferences to a welfare incentive.'

Hoynes (1997a:106)

However, controlling for state effects has '*little effect*' on the relationship between benefits and female headship for black women – a \$100 increase in benefits increases the probability of female headed households by 1.1 percentage points (Hoynes, 1997a:108-109).

- Adding individual effects shows that there is **no** evidence that benefits increased the likelihood of either black or white women forming female headed-households (Hoynes, 1997a:106 and 110). In particular omitting individual effects for black women leads to an over-estimate of the welfare effect on female headship decisions. This might be because on average black women moved to states with higher benefits (possible to take advantage of better labour market opportunities), whilst white women, on average, did not.

Dickert-Conlin and Houser (1999) using data from the Survey of Income and Program Participation and controlling for fixed effects also find that there is no significant correlation between AFDC and female headship.

A different approach on the growth in single parenthood during the 1980s is provided by Lichter *et al.* (1997), who use state and county level data and consider the affect of cultural factors as well as welfare benefits and economic opportunities. Lichter *et al.* (1997) use longitudinal county level data from the 1980 and 1990 decennial censuses to estimate the effect of changes in benefits (a package

comprising AFDC, Food Stamps and Medicaid) on unmarried female headed households with children aged under 18. The use of county level data means that intra-state differences in labour and marriage markets can be explored.

Box 4.3 Further details – Lichter *et al.* (1997)

The analysis by Lichter *et al.* (1997) includes fixed effects to control for unobserved variation at state and county levels. The data is for all US counties in the 48 contiguous states. Findings are reported overall and separate analyses were conducted for non-Hispanic whites, non-Hispanic blacks and Hispanics.

The economic attractiveness of males was measured using the sex ratio, male employment rate, male earnings for full-time workers and percentage of college educated men in the county. Measures of female economic independence included median earnings of women in full-time employment and percentage of college educated women in the county. The AFDC component of the overall generosity of the benefits package represents the maximum benefit level of a family of four with no other income. To capture the cultural context of family formation, Lichter *et al.* (1997:123) use measures of urbanisation (because non-metropolitan women tend to marry earlier and are less likely to have children outside of marriage) and participation in 'pro-family' religious organisations. Other control variables include age and racial/ethnic composition of each county.

Lichter *et al.* (1997) find that many of the variables they analyse only have a relatively small effect on female headship, and argue that cultural changes underpin the observed increase in female headship. More specifically, they find that:

- There was a **small** welfare effect. A \$100 change in welfare benefits is associated with a 0.838 percentage points change in county female headship (Lichter *et al.*, 1997:129). This implies that over the 1980s the fall in the value of welfare benefits (principally AFDC) decreased female headships by 1.4 per cent. By race/ethnicity this welfare effect was significant and positive for black Americans but statistically insignificant for non-Hispanic whites and Hispanics (Lichter *et al.*, 1997:132).
- There was a **small** marriage market effect, especially amongst black Americans and Hispanics. The gender ratio was negatively associated with female headship – a decline of 13 men per 100 women would increase female headship by one percentage point (Lichter *et al.*, 1997:129-130). Men's economic opportunities were negatively associated with female headship – a ten per cent change in male employment was associated with a 1.1 percentage point change in female headship; and a ten per cent change in male earnings with a 0.3 percentage point change in female headship.
- There was **no** support for women's economic independence being associated with female headship as women's earnings and education were negatively associated with female headship (Lichter *et al.*, 1997:130). Thus women with higher levels of schooling were potentially more attractive as marital partners.

- Cultural and demographic factors were significant and affected female headship (Lichter *et al.*, 1997:130-131). Female headship was positively associated with urbanisation, high concentrations of black people and young people and falls in local population, and negatively associated with 'pro-family' factors (the proportions of Hispanics, Catholics and anti-abortion Protestants in a county).

Lichter *et al.* (1997:131) argue that factors other than changes in welfare benefits and changes in the composition of the counties must explain the increase in female headship. They highlight cultural changes such as changing societal values towards sexuality and unmarried cohabitation, and that society has become more individualistic. Overall, Lichter *et al.* (1997:136) conclude:

'... welfare was not the primary or even a key factor responsible for the [then] recent upswing in female headship. The estimated welfare incentive effects implied that even very large cuts in welfare payment levels produce only a relatively small drop in the rate of female family headship.'

Two more recent studies report similar findings. Blau *et al.* (2004) examine the effects of welfare on single motherhood and family headship using Metropolitan Statistical Area (MSA) data and controlling for unobserved variables. They find no impact of welfare benefits on single motherhood for either white or black women and a positive effect on single headship for black but not for white women (Blau *et al.*, 2004:382).

The authors point out that while fixed effects methods improved on early cross-sectional analyses of welfare benefit levels and family formation, fixed effects methods may still give biased findings if there are unmeasured changes in factors, for example norms, correlated with changes in benefits (Blau *et al.*, 2004:383). For example, a state where the reduction of stigma of being a single parent is reducing may increase the level of welfare benefits at the same time as the number of single parents is increasing. Blau *et al.* (2004:384) argue that characterising some states as 'Liberal' as fixed effects models do misses changes in economic and social climate.

Blau *et al.* (2004) find positive cross-sectional associations between benefits and single motherhood and family headship that are consistent with early reported cross-sectional analyses reported previously. However, in line with Moffitt (1994) and Hoynes (1997) the authors find that when they add the controls for unobserved MSA variables the impact on black women reduces and that for white women disappears entirely (Blau *et al.*, 2004: 384). Adding MSA fixed effects removes a positive welfare effect on single motherhood for all groups. When the authors go further and include MSA time trends into the analysis they show a positive effect on female family headship for young black women with some evidence of a larger effect on less educated black women. However, there is still no evidence of a positive effect on either single motherhood or single headship for white women or for single motherhood for black women (Blau *et al.*, 2004:384).

The authors conclude that these findings suggest that for black women and in particular those who are less educated, restricting welfare benefits is likely to increase extended family arrangements without reducing the incidence single parenthood, which they suggest lends support to 'one of the most robust results obtained in this literature' reported by Danziger *et al.* (1982) and Ellwood and Bane (1985) that welfare changes mainly impact on the living arrangements of single mothers but not the incidence of single motherhood itself (Blau *et al.*, 2004:384).

Similarly, Fitzgerald and Ribar (2004:189) find little consistent evidence that waivers affected female headship of families.

Box 4.4 Further details – Fitzgerald and Ribar (2004)

Fitzgerald and Ribar (2004) use pooled panel data from the Survey of Income and Program Participation for years 1990, 1992, 1993 and 1996 to assess the impact of welfare waivers and TANF on women's decisions to form single headship families. The authors claim to be the first observational study to use nationally representative, individual level longitudinal data. While acknowledging the limitations imposed by the short duration of the available panel data the data nevertheless allow the authors to analyse incidence and transitions into and out of female headship. They also developed annual, county-level information on wages and jobs and marriage market conditions as well as event history methods to control for other relevant unobserved factors.

AFDC waivers

There have been several studies of the effect of AFDC waivers in particular the impact of family cap policies on women's fertility decisions. The family cap was explicitly designed to reduce additional births to women in receipt of welfare by reducing or removing incremental increases in benefit for additional children. Effectively, it reduces the amount of benefit paid for an additional child born on welfare to zero and so increases the marginal cost of bearing another child for a woman on welfare. Thus, other things being equal, a family cap raises the price of an additional child and is expected to decrease pregnancy rates and increase abortion rates (Kearney, 2004:303). The policy might also be expected to encourage a pregnant woman to marry before giving birth if the husband's income substitutes for lost benefit income (Baughman and Dickert-Conlin, 2007; Sabia, 2006:114). With the exception of the family cap, studies subsequent to Moffitt's review (1998b) suggest a minimal or no effect of welfare policies on fertility. There are of course counterexamples.

Family cap

There is a mixed picture with respect to the family cap policy. Whilst most studies of the impact of the family cap find that there is either little or no effect and some, counter intuitively, that there is a negative effect, a small number of studies

report positive effects. However, methodological concerns have been raised with each of the studies that find positive effects, either by the authors themselves or by critics. Therefore the findings of these studies need to be treated with caution. The overall picture is that even the family cap has had little or no effect on fertility, although some authors have pointed out that it is likely to have had the effect of increasing poverty within families and levels of hardship for children (Kearney, 2004; Levin-Epstein, 2003 cited by Ryan *et al.*, 2006).

Examples of studies that find no effect of the family cap on childbearing include Joyce, *et al.* (2004), Dyer and Fairlie (2004), Kearney (2004), and Ryan *et al.*, (2006) and these are discussed ahead.

Joyce *et al.* (2004) analyse the effects of the family cap on birth and abortion rates (Joyce *et al.*, 2004:475 and 481). The authors argue that widening the analysis of the effects of welfare reform to include abortion as well as birth provides further important information on changes in women's reproductive behaviour associated with welfare reform. For example, as discussed ahead, Camasso *et al.* (2003) and Jagaqnnathan and Camasso (2003, cited by Joyce *et al.*, 2004:476) find in an experimental analysis of New Jersey's family cap that a fall in birth rates associated with the family cap was accompanied by an increase in abortion rates. Abortion rates are of interest because rates of unintended pregnancy and abortion are high amongst unmarried women (Joyce *et al.*, 2004:475; 476). Henshaw (1998) estimates that 75 per cent of all pregnancies to unmarried women and 75 per cent of all pregnancies to teens, are unintended (Henshaw, 2004, cited by Joyce *et al.*, 2004:476). Whilst an evaluation of Delaware's waiver programme, A Better Chance, found that 82 per cent of women in receipt of welfare that had a baby during the trial said that the pregnancy was unintended (Fein, 1999 cited by Joyce *et al.*, 2004:504). Joyce *et al.* (2004) suggest that the high prevalence of unintended pregnancies amongst women in lower socioeconomic statuses leads to the expectation that a substantial decline in births associated with the family cap should also be associated with an increase in abortion (Joyce *et al.*, 2004:475).

Box 4.5 Further details – Joyce *et al.* (2004)

The authors claim that their analysis is distinct in that, whilst most previous analyses of the effect of welfare reform on fertility examined only births, theirs is the only econometric study that analyses both birth and abortion rates amongst women who are at risk of receiving public assistance (Joyce *et al.*, 2004:476). The study uses records from 24 states and a difference-in-difference design. The study uses a within – state design to compare unmarried adult women who have 12 or less years of schooling with no previous live births with similar women who have one or more births. The authors suggest that while both groups of women have a high likelihood of being affected by welfare reform only the latter group should be affected by the family cap (Joyce *et al.*, 2004:477).

Box 4.5 Continued

The authors explain the need for a within-state comparison by reference to the limitations of multi-state studies of the family cap where controls for other aspects of welfare reform are included in the regressions or the study period is limited to pre-TANF years (Dyer and Fairlie, 2004; Hovarth, Rose and Peters, 2001). A potential limitation of these studies, the authors suggest, is that it is difficult to characterise and measure the differences in complex multi-dimensional welfare reform programmes that have been adopted by different states and which are enforced to varying degrees (Moffitt, 2003 cited by Joyce *et al.*, 2004:477).

Joyce *et al.* (2004) report that in states with family caps birth rates fell and abortion rates rose more amongst high risk women with at least one previous live birth compared to similar childless women, a finding which they suggest is consistent with the expected effect of the family cap. However, this parity-specific pattern of births and abortions also occurred in states that implemented welfare reforms without a family cap. Thus, the effects of welfare reform may have differed between mothers and childless women, but there is **little** evidence of an independent effect of the family cap (Joyce *et al.*, 2004:475). Joyce *et al.* (2004:504) conclude that '*there has been no major reproductive responses to the family cap*'.

Dyer and Fairlie (2004) compare changes in fertility across family cap and non-family cap states and find **no** consistent evidence of an association between the family cap and the probability of an additional birth while in receipt of welfare.

Box 4.6 Further details – Dyer and Fairlie (2004)

Dyer and Fairlie (2004) use a national sample of mothers who ever received welfare drawn from CPS micro data between 1989 to 1999 to examine the impact of AFDC waiver family cap policies on the birth rate of single less educated women with 12 or less years of schooling and at least one child.

The study uses the first five states that were granted AFDC waivers to implement family caps as 'natural experiments'. They employ several techniques to increase the credibility of the experiment, specifically multiple comparison groups, controls of differential time trends, and difference-in-difference-in-differences estimators.

They develop the analysis by using married women with children and with 12 or less years of schooling as a within-State comparison group. Again they find **no** consistent association between the family cap and non marital fertility. However, in a separate analysis of New Jersey's family cap policy the authors report a two percentage point decline in the fertility rate (relative to a mean of six per cent) associated with the family cap, although this decline is statistically insignificant at conventional levels.

The authors conclude that:

'... our general lack of evidence of a negative effect of the family cap and other waivers on fertility do not support the hypotheses that family cap policies reduce the incidence of out-of-wedlock birth.'

Dyer and Fairlie (2004: 441)

The authors suggest that effects of family cap policies may be limited for a number of reasons: because increments in benefit levels are much lower than the estimated costs of bringing up a child, many welfare spells are short, the importance of non-monetary factors, the unintended nature of some pregnancies and the partial offsetting of lost benefits by Food Stamps and Medicaid (Dyer and Fairlie, 2004).

Kearney (2004) also uses the variation across states in the timing of the implementation of the family cap to identify whether the denial of an increase in benefits for children leads to a reduction in births.

Box 4.7 Further details - Kearney (2004)

Kearney (2004) claims to improve on previous cross-State studies in a number of ways through using Vital Statistics Natality Data compiled by the National Centre for Health Statistics (NCHS) which include all births in the US from 1989 to 1998. Kearney (2004) limits the sample to births to women age 15 to 34. She exploits the cross-state variation in the timing of policy implementation to compare the change in birth rates for a state that implements a family cap to those that do not while controlling for level differences in birth rates across states and years as well as differences in linear birth trends across states (Kearney, 2004:296). This allows the analysis to control for the effects of time and state fixed effects and observe whether results extend across race and age groups (Kearney, 2004:300).

However, Kearney points out that her analysis contains only limited post-family cap data as most states that introduced a cap did so in 1995-6 and at the time of her study vital statistics for births was only available until 1998. Kearney points out that it is possible that the effects of the family cap may take longer to show so further research is needed to investigate longer term effects (Kearney, 2004:318).

Kearney finds **no** evidence that family cap policies led to a reduction in births to women aged 15 – 34. She also finds no evidence of large declines in higher order births amongst groups with relatively high welfare participation rates. Kearney (2004) suggests that family cap policies are at best ineffective and at worst misguided as fewer state resources are being provided per child.

Contrary to expectations Kearney found counter-intuitive evidence that welfare reform had a small **positive** association with increased fertility about one year after the family cap was introduced for unmarried women with low education. This finding was also supported by Joyce *et al.* (2004; cited in Ryan *et al.*, 2006:107).

Further evidence that welfare receipt has minimal effect on fertility is provided by Ryan *et al.* (2006). Using discrete time event history analyses of data drawn from the PSID, they examine the association between the risk of a non marital subsequent birth and State level welfare waiver policies implemented under AFDC. The authors point out that while many studies have treated welfare policies as a group, their aim is to assess the effect of each state policy – family cap, time limits, work exemptions, job sanctions, earnings disregards, work requirements - separately in order to determine which, if any, were effective in reducing subsequent non marital childbirth as '*... grouping all waivers together may obscure the true influence of specific policies.*' (Ryan *et al.*, 2006:104).

Box 4.8 Further details – Ryan *et al.* (2006)

Ryan *et al.* (2006) conduct discrete time event history analyses of data drawn from the PSID. PSID is a nationally representative longitudinal survey of US residents and their families (Ryan, 2006:109). The authors point out that PSID is the only data set that can provide the necessary longitudinal information on public assistance receipt, childbearing behaviours, relationship transitions, and individual characteristics. Ryan *et al.* (2006) combined the Marriage History and the Childbirth and Adoption History files with the main Family and Individual files to build complete marriage and childbearing histories for each female respondent (Ryan *et al.*, 2006:109). The data also provide state of residence annually allowing the authors to include state-level economic variables in the analysis (Ryan *et al.*, 2006:109).

The authors argue that a key strength of their research is the use of national level data on fertility behaviours of those who could be expected to be most affected by the changes – unmarried mothers who have received welfare benefits. They argue that conceptually this is an improvement over those studies that use only aggregate state data or single state specific data or those that use national data but do not identify the same high risk population (Ryan *et al.*, 2006:109). The only time invariant variable the authors used was race/ethnicity (non-Hispanic whites vs. Hispanics and non-Hispanic blacks) (Ryan *et al.*, 2006:110).

The research finds that:

'... although reducing the number of non-marital births is a key goal of welfare reform, state established welfare waiver policies do not operate as intended – they did not have any influence on women's childbearing behaviours in the sample, net of women's individual characteristics and state economic environments. Even the family cap policy, which was designed for the sole purpose of reducing additional births, had no significant association with non marital subsequent childbearing.'

Ryan *et al.* (2006:103)

Instead, Ryan *et al.* (2006:114) found counter-intuitive effects – the family cap was marginally associated with greater odds of a non marital subsequent birth. The authors tested multiple model specifications to see if the counter-intuitive findings were robust and found that in all models this effect persisted (Ryan *et al.*, 2006:119). The authors report that these findings are similar to other national level studies that found counter-intuitive effects of family cap policies for at least some populations (see discussion of Joyce *et al.* (2003) and Kearney (2004) previously), but do not match state-level analysis by Horvath-Rose and Peters (2001) (see ahead) that showed a negative association between family cap and non-marital births at the state level (Ryan *et al.*, 2006:119). However, they are consistent with Blank's (2002, cited by Ryan *et al.*, 2006:120) conclusion that most studies find either minimal effects or none at all and with Levin–Epstein's assertion that *'the available research offers no compelling evidence that (family cap policies) have achieved the objective of reducing fertility.'* (Levin–Epstein, 2003:1 cited by Ryan *et al.*, 2006:120). Ryan *et al.* (2006:120) argue that their research suggests:

'... that personal characteristics, not public policies, are stronger determinants of women's childbearing decisions. Unmarried mothers who were younger, or who were black or Hispanic, were more likely to have subsequent births than were older, non-Hispanic white unmarried women.'

In addition, women living with cohabiting partners were more likely than never married non-cohabiting partners to have a second or higher order birth (Ryan *et al.*, 2006:120).

The research also suggests parity toward two children (Ryan *et al.*, 2006:120). Women who had one child were more likely to have had a non-marital subsequent birth than women with two children, whilst those with three or more children were less likely to have another child. This, the authors suggest, reflects US society's two child norm:

'Given the tendency of many women to want at least two children, there may be very little hope that legislation aimed at limiting fertility can have a measurable impact for women with fewer than two children.'

Ryan *et al.* (2006, 120)

The authors conclude that:

'Overall, this paper contributes to an expanding body of research that shows minimal effect of welfare waivers on fertility.'

Ryan *et al.* (2006)

Indeed:

'The family cap may instead increase family hardship by limiting the amount of money families receive as their family size grows and ultimately adversely affect the well-being of children. In response some states have reversed their decisions to implement family cap policies and are eliminating them.'

Levin–Epstein (2003, cited by Ryan *et al.*, 2006:121)

However, other studies such as Camasso (2004), Camasso *et al.* (1998; 2003), Hovath-Rose and Peters (2001), Sabia (2006), and Horvath-Rose, Peters and Sabia (2008) all find statistically significant associations between the family cap and fertility; whilst Lopoo and DeLeire (2006) find statistically significant effects of the minor parent provisions on 15 to 17 year olds. These studies are outlined ahead.

As part of AFDC waiver agreement with the Federal Government New Jersey undertook an experimental evaluation of the family cap component of the New Jersey Family Development Program. Implemented in 1992, the Family Development Program was the first to impose a cap on benefits for women who had a child while on welfare. Camasso's (2004) evaluation of New Jersey uses the sequential phasing of specific reform components by county as a natural experiment to isolate the relative effects of a family cap policy and enhanced JOBS programme on the fertility of 2,100 women on welfare who were randomly assigned to treatment and control groups. Data were collected from 1992 to 1997 (Camasso *et al.*, 2004).

Box 4.9 Further details – Camasso (2004)

Camasso (2004) uses the experimental design and the phased introduction of components at county level to create a multiple treatment to unbundle the effect of the family cap from that of the enhanced JOBS programme which he hypothesised also affected the fertility of recipients.

However, several concerns have been raised about Camasso's analytical approach. For example, Kearney (2004) questions whether the results of the New Jersey experiments apply to other contexts and suggests that there is evidence that the experimental design was contaminated (Kearney, 2004). Kearney (2004) cites Loury (2000) who claims that many members of the treatment and control groups did not know which policy applied to them; more than one-quarter of case workers in the New Jersey experiment admitted that they used their discretion when allocating participants to the treatment and control groups. In addition, the response rates to the surveys were low and that respondents were not representative of the larger AFDC caseload (Loury, 2000, cited by Kearney, 2004:301).

Camasso (2004) found that the family cap significantly **lowered** births and increased abortions and use of contraception for short-term welfare recipients. However, he found that the family cap did not have any effect on longer term recipients; although the enhanced JOBS programme reduced fertility, independent of the family cap, amongst longer term welfare recipients (Camasso, 2004:462).

Camasso (2004) suggests that his finding of differential impact of the family cap on new and ongoing welfare recipients may be expected from general demographic theory. More recent recipients tended to enter the programmes with more education and fewer children than ongoing recipients, which after controlling for age are indicative of lower fertility (Mellor, 1998, cited by Camasso, 2004).

However, there are doubts about Camasso's methodology. Ryan *et al.* (2006) cite Fein *et al.* (2002), Lounsbury (2000) and Rossi's (2001) concerns about numerous aspects of the study's approach, including the sample size, representativeness and attrition, the process of random assignment, short follow-up periods and that similar services and information were being provided to the treatment and control groups, all of which they suggest cast doubt on the study's conclusions, see Box 4.9.

Three studies by combinations of Horvath-Rose, Peters and Sabia, who use aggregate vital statistics birth data, find that the family cap has an effect on non-marital births. Horvath-Rose and Peters (2000) analyse the effect of the family cap on state level non-marital birth ratios (defined as the proportion of non-marital births to total births that occur to unmarried women) between 1984 and 1996. The study concludes that the family cap decreases non-marital fertility for all race and age groups. They find that the family cap is associated with a nine per cent decline in non-marital birth ratios among teens and a 12 per cent decline among adults in models that control for both unobserved state and year variables. However, the study's methodology has been questioned, see Box 4.10.

Box 4.10 Further details – Horvath-Rose and Peters (2000)

In their analysis Horvath-Rose and Peters (2000) control for state and year fixed effects, high school completion rate by adults aged 18-24, proportion of state population living in urban areas, proportion of State population that are fundamentalist adherents and indicator variables for waivers for minor parent provision, time limits, work requirements, AFDC-UP, child support, expanded time disregard, asset limit, school attendance and performance requirement, and parental consent requirement for an abortion, and requirement for sex education in schools.

However, Joyce *et al.* (2004) point out that 20 of the 23 states that implemented the family cap did so in 1995 or later. Thus Horvath-Rose and Peters had few post cap observations in their sample (Joyce *et al.*, 2004:478). Kearney (2004) also questions the study's methodology. She suggests that the analysis confounds the marriage and fertility responses to the family cap, fails to account for the changes in the reporting of marital status in vital statistics data that occurred during the study period and presents implausible findings, specifically that there are such large effects for the entire population of women aged 20-49 most of whom are unlikely to ever receive welfare (Kearney, 2004:301-302). Joyce *et al.* (2004:478) also point out that some of the other results of the study are counter-intuitive which they suggest '*raises questions about the robustness of the specification.*' For example, Joyce *et al.* (2004:478) find it strange that the minor parent provisions (see discussion ahead) are associated with a large increase in the non-marital birth ratios amongst adults while AFDC-UP programmes are associated with lower non-marital birth ratios amongst teenagers but not adults.

Sabia (2006) uses aggregate data from 1984 to 1998 to estimate the association between family cap policies and non-marital birth, pregnancy and abortion rates. Sabia finds '*robust evidence*' even after controlling for a wide set of policy variables, socio-economic characteristics and time-invariant State level unobserved heterogeneity that the family cap is associated with a reduction in non-marital birth rates particularly amongst one sub group - black women (Sabia, 2006:112-113).

Sabia (2006:112-113) also finds that the reduction in non-marital birth rates particularly amongst black women were driven by a reduction in non-marital pregnancies rather than an increase in abortion or marriage rates. Sabia (2006:129) concludes that his finding suggest that '*black unmarried women are responding to the family cap by having less sex or increasing the level of contraceptive care taken during intercourse.*' This finding is not consistent with Camasso *et al.* (1998) and Jagaqnnathan and Camasso (2003). Both analyses suggest that pregnancies and births amongst women who were in receipt of welfare declined after the family cap was introduced and abortions increased (Kearney, 2004:). However, Sabia (2006:128) points out that Camasso *et al.* (1998) only looked at the family cap in New Jersey, while other methodological concerns about Camasso's findings have been discussed in Box 4.9, previously.

Sabia (2006) finds that the reduction in the non-marital birth rate of black women associated with the family cap is driven by a 2.7 per cent decline in the non-marital pregnancy rate amongst black women '*... which is consistent with the hypothesis that that higher direct economic costs and higher indirect stigma costs induce unmarried black women to curb their childbearing by avoiding pregnancy.*' (Sabia, 2006:129). The author suggests that there is evidence that stigmatising illegitimacy may effect black women more than white women due to white people holding racial stereotypes judging unmarried black women more harshly, particularly with regard to welfare receipt. He cites studies which show that media coverage of welfare use a disproportionate share of blacks in reports on poverty whilst white people who '*harbour racial resentment*' respond less generously to welfare policies targeted at supporting black people. As noted above these findings differ from the studies reviewed by Moffitt (1998) which found that welfare had a greater effect on white women. Baughman and Dickert-Conlin suggest that one of the consistent findings of these studies - that welfare seems to have a larger effect on fertility for white women than black women has '*never been explained well in the literature*' (Baughman and Dickert-Conlin, 2007: no page numbers).

Sabia caveats his findings with reference to unobserved state specific time varying characteristics associated with the implementation of the family cap and the reduction in non-marital childbearing that are not caused by the policy. Under these circumstances *'the observed impact may be upwardly biased.'* (Sabia, 2006:128). This concern is particularly acute because of the use of aggregate data in the analysis:

'If time-varying, unobserved, state-specific anti-illegitimacy sentiment is correlated with the implementation of the family cap, then the policy impact ... may, in part, reflect spurious correlation. Similarly, if there are unobserved policy changes that are correlated with the implementation of the family cap, then the observed policy impacts may be overstated.'

Sabia (2006:128)

Horvath-Rose, Peters and Sabia (2008) also use aggregate state level panel data from 1984 to 1999 to examine the extent to which state welfare reforms had lowered age and race-specific non-marital fertility. The authors also look at other policy initiatives: time limits; AFDC-UP (welfare eligibility for two parent families); sanctions for non-compliance with child support; expanded income disregards and asset limits; the minor parent provision that requires minor parents to live with their own parents or guardians; and school attendance and performance requirements. The last two are only included in the teen analysis (Horvath-Rose *et al.*, 2008:129).

Box 4.11 Further details – Horvath-Rose *et al.* (2008)

The analysis is by age and race. Age is broken down into teen women (15-19) and post-teen women (20-49), whilst race is broken down into two groups: white women (including white Hispanic) and black women (including black Hispanic women) (Horvath-Rose *et al.*, 2008:127).

The authors claim to improve on previous research by correcting the models for bias in the panel data (Horvath-Rose *et al.*, 2008:120-121). The models include controls for unobserved variables.

The authors use two measures of non-marital fertility: the non-marital birth ratio, defined as the proportion of non-marital births to total births that occur to unmarried women, and the non-marital birth rate, defined as the proportion of all women in the population with a non-marital birth (Horvath-Rose *et al.*, 2008:124). However, the authors point to the weakness of using the nonmarital birth ratio as a dependent variable because an increase in marital births with no change in nonmarital births would result in a decrease in the nonmarital birth ratio. It is also important to note that changes in the non-marital birth rate could be caused by marriage as well as birth decisions (Horvath-Rose *et al.*, 2008:123).

The authors also point out the limitations of using aggregate data to estimate the impact of family cap on non-marital births as those data include women who are not in receipt of welfare.

With the exception of the family cap, Horvath-Rose *et al.* (2008:131) do not find that any of the policies examined have significant effects on non-marital childbearing. The authors do find evidence that the family cap is associated with a decline in non-marital birth ratios for both age and race groups. The family cap is associated with a decline in non marital birth ratio of 5.3 per cent for white teens and 1.6 per cent for black teens. For the post teen groups the family cap is associated with a decline of 3.9 per cent for white women and 6.9 per cent for black women. For their second measure of non-marital births – birth rates – the family cap is associated with a decline of non-marital birth rates among black post-teens. The family cap is also associated with a reduction in non-marital birth rates for black teens and white post-teens but these findings are insignificant (Horvath-Rose *et al.*, 2008:130).

The authors suggest that one explanation for the stronger results for non-marital birth ratios than for birth rates could be that the family cap may be positively associated with marital births which if true would suggest that the family cap may encourage unmarried women to marry prior to the birth of the child.

However, the authors suggest that the size of the association between the family cap and marital birth rates – 1.3 per cent for white post-teens to 15.8 per cent for black teens (Horvath-Rose *et al.*, 2008:132) – suggests that this explanation is incomplete and that there are unobserved characteristics associated with both higher non-marital birth rates and the implementation of the family cap (Horvath-Rose *et al.*, 2008:131).

Nonetheless, the magnitude of the effect of the family cap is small, and the authors suggest that:

'... changes in variables such as social stigma, expectations and unmeasured aspects of socioeconomic variables appear to play a larger role than changes in welfare policy.'

Horvath-Rose *et al.* (2008:134)

Social experiments

Maynard *et al.* (1998:153-155) review eight social experiments seeking to reduce the fertility of teenage parents on benefits or at risk of claiming benefits. The projects were: Job Corps, Job Start, New Chance, Project Redirection, Ohio Learnfare, Teenage Parent Welfare Demonstration, Teenage Parent Health Care program and the Elmira Nurse Home Visiting program. The results of the evaluations were mixed and show that the impacts of programmes on abortion rates can mitigate against any effects on pregnancy rates. Only two projects, Teen Parent Health Care and Elmira Nurse Home Visiting, which were both health-focused and targeted on first-time teen parents, significantly reduced the repeat pregnancy rates by 57 per cent and 43 per cent, respectively.⁵⁰ Another two, Job Start (an employment and training program) and New Chance (an education and training program), had

⁵⁰ Expressed as a per cent of the average for the comparison/control group.

significant *increases* in repeat pregnancy rates of 13 per cent and eight per cent, respectively. Maynard *et al.* (1998:155) suggest that possible explanations for this are:

- The programmes provided opportunities for the women to meet men.
- The programmes promoted the women's self-esteem and ability to live independently but did not alter their contraceptive practices.

For the New Chance programme there was also a significant increase in the abortion rate (34 per cent) which offset the increase in pregnancies so that the overall increase in the birth rate (eight per cent) was statistically insignificant.

For Project Redirection and Teenage Parent Welfare Demonstration projects, falls in the abortion rate amongst participants were sufficient for the birth rates to increase significantly (by 20 per cent and seven per cent, respectively), notwithstanding that the increases in the repeat pregnancy rate were insignificant.

Maynard *et al.* (1998:156) notes that the US literature suggests that AFDC single mothers show little interest in marrying the fathers of their children, or even of pursuing child support. The former could occur because the men were '*... not reliable sources of economic and emotional support; welfare can at least be relied upon for economic support.*' (Maynard *et al.* (1998:156). The latter may reflect the absence of any financial gain from doing so.

Welfare reform, single mothers and living arrangements

There is also a US literature on welfare reform and single mothers and living arrangements. The regression analysis by Schoeni and Blank (2000), which utilised data on all women aged 16-54 years from the CPS for 1977 to 1999 to investigate the impacts of AFDC waivers 1992 to 1996 and of TANF, and described in Section 2.2.3 shows that the AFDC waivers significantly decreased rates female headship by 1.7 percentage points for those with less than 12 years of schooling (Schoeni and Blank, 2000:17 and 31).⁵¹ The AFDC waivers had no statistically significant impacts on female headship for women with more years of education. The authors claim this finding is what would be expected, that is, women with less education (high school dropouts) were more likely to be affected by welfare programmes.

However, their difference-in-difference model to estimate the impact of TANF on female headship rates (see Section 2.2.3), shows that for women with less education female headship rates fell compared to those with more schooling. For women with less than 12 years schooling compared to women with more than 12 years education female headship rates fell by two percentage points following the introduction of TANF (Schoeni and Blank, 2000:23 and 33). Similarly, for women with less than 12 years schooling compared to women with 12 years education female headship rates fell by 2.1 percentage points. (Both findings are statistically significant at the ten per cent level.)

⁵¹ These findings are statistically significant at the ten per cent level.

There are a few studies that consider the impact of welfare reform on children's living arrangements. AFDC waivers and TANF can be expected to '*... decrease the probability that a child lives with an unmarried parent and increase the probability that a child lives with a married parent.*' (Bitler *et al.*, 2006:5). However, a possible outcome of welfare reform is that children leave the parental home and live with others if, say, reform leads to a reduction in household income and (financial) stress.

Bitler *et al.* (2006) utilise CPS data for 1989 to 2000 and consider whether the introduction of AFDC waivers in states lead to children to live with an unmarried parent, with a married parent or with neither parent. Separate analyses were conducted for black, Hispanic and white children (aged under 16). The authors find that state waivers were associated with (Bitler *et al.*, 2006:13-20):

- A fall in the likelihood that children will live with an unmarried parent.

This effect is concentrated amongst Black (-15 per cent) and Hispanic children (-14 per cent) and is insignificant for white children.

- An increase in the likelihood that they will live with a married parent.

This effect is concentrated amongst Hispanic children (20 per cent). The evidence for white children is mixed and the effect is not statistically significant for black children.

- An increase in the likelihood that they live with neither parent.

This is especially true for black children (a 13 per cent impact) who are likely to live with a grandparent. There is a smaller impact for white children (seven per cent) and no statistically significant impact for Hispanic children.

The analysis controls for demographic variables (such as child's age), other state public assistance policies (for instance, the generosity of the State's Medicaid programme), labour market variables (such as unemployment and employment rates) and unobserved state and year effects (Bitler *et al.*, 2006:10).

Similar results were found in an earlier study by Acs and Nelson (2004), who used data from the National Survey of America's Families for 1997 and 1999 to explore the impact of welfare reform policies on living arrangements. Although using a different approach (difference-in-difference-in-differences) and hence difference controls and comparisons, they report that:

- States with a tough sanctions policy (that is, they removed the entire TANF benefit for non-compliance with work requirements) were less likely to have low-income single parent families (Acs and Nelson, 2004:281-282). However, such sanction policies did not reduce the proportion of children living with single parents. Nor did they have any clear relationship with two-parent family living arrangements or with the probability that the child lives apart from both parents.

- Family caps tended to be associated with a decline in single parenting amongst families and children (Acs and Nelson, 2004:282-284). Indeed, family caps were associated with an increase in two-parent (married) families and children living in two-parent families. However, they were not associated with a higher probability that a child lived with neither parent.
- Restrictions on the receipt of welfare by two-parent families had no significant association with living arrangements (Acs and Nelson, 2004:285-286). (The restrictions considered were whether the state imposed a work history requirement of a 100-hour test on two-parent families.)

As Acs and Nelson (2004:287) observe their analysis:

'... provide[s] some evidence that welfare policies and practices have contributed to the decline in single parenting and may, in fact, promote dual parenting and marriage.'

However, this analysis only considers one policy at a time, it ignores the 'nuances' of policy and how they interact. As Acs and Nelson (2004:287) point out, the findings for family cap policies, for instance, are likely to be a proxy marker for a set of related state policies and practices that together promote two-parent families and discourage single parent families.

Minor parent provision and childbearing

Lopoo and DeLeire (2006) examine the minor parent provision that requires teenage mothers younger than 18 to live with a parent or legal guardian and enrol in high school in order to receive welfare benefits. They use state level natality data from the NCHS to compare the trend in fertility rates for young women aged 15 to 17 to the trend for a control group of 18 year olds. Their estimates suggest that the annual percentage decline in fertility rates following implementation of the minor parent provisions was 0.7 percentage points larger for young teens than for teens aged 18, a difference of over 22 per cent. (Lopoo and DeLeire, 2006:275).

EITC and childbearing and single mothers

US researchers have considered whether EITC affects the fertility decisions of households – as the maximum credit available is higher for families with (two or more) children than those with none.⁵²

⁵² Since 1991 the maximum credit for families with two or more children has been higher than that for families with one child. A smaller credit to childless recipients was introduced in 1994. These changes to EITC may be seen as creating fertility incentives. (This fertility incentive is available to both married and unmarried women since eligibility for EITC, like WTC, is not dependent upon marital status.)

There is some evidence that the effect of EITC on actual fertility decisions is small. Baughman and Dickert-Conlin (2003:249-250) found that higher welfare benefits for unmarried mothers were correlated with higher first born birth rates (for children born between 1990 and 1999). They also found that the fertility incentive effect of EITC on first births for non-white recipients was larger than for white recipients (especially for married women).⁵³ The authors suggest that the greater effect for non white married women may be because EITC was a more important source of income for non-white women. Or if non-white women have fewer marriage options, financial incentives for additional children may matter more (Grogger and Bronars, 2001, cited by Baughman and Dickert-Conlin, 2003:250).

In a second study Baughman and Dickert-Conlin (2007) use birth certificate data for the years 1990 to 1999 and exploit the variation in state EITC programmes to test whether changing incentives in the EITC affect fertility rates – specifically whether expansion in credit influence birth rate among targeted families.

Baughman and Dickert-Conlin (2007: no page numbers) conclude that while economic theory would predict a positive fertility effect of the programme for many eligible women, their results indicate that expanding the credit produced only extremely small reductions in higher order fertility this time among white women.

The impact of EITC on female headship decisions, whilst controlling for AFDC, is considered by Dickert-Conlin and Houser (1999).⁵⁴ They find that the impact of EITC on female headship decisions is '*ambiguous*'. Their analysis was based on data for women aged 18 to 50 from the Survey of Income and Program Participation for the period 1989 to 1995 and included controls for individual and State characteristics and incorporates individual and year effects.⁵⁵ Like Hoynes (1997a), their analysis is suggestive of a link between the degree of control used and the magnitude and significance of the impact of EITC on female headship decisions. When the data are pooled and individual fixed effects are not included AFDC has a positive and EITC a negative effect on female headship, and in both cases the impacts are statistically significant. But when individual fixed effects are included in the models the coefficients become insignificant.

⁵³ This contrasts with the literature on welfare, where larger effects are found for white families (Moffitt (1998) cited in Baughman and Dickert-Conlin (2003:250)).

⁵⁴ Note, in this analysis a female head is an unmarried women with children, that arises from out-of-wedlock births or divorce.

⁵⁵ They use the maximum monthly combined AFDC and Food Stamp benefit for a family of three and the maximum combined annual Federal and state EITC for a family with two children as the independent variables of interest in the regression analysis (a linear probability model). The EITC amount is also lagged by one year because it is refunded in the following tax year.

Nonetheless, Dickert-Conlin and Houser (1999:22) maintain that EITC might only have an effect on female headship decisions for women who are likely to be eligible for the credit (as opposed to all unmarried women). As eligibility for EITC is likely to be related to income and the female headship decision they predict eligibility using wage regressions that control for individual and state variable such as age, education and female unemployment rate and assume she works for 2,000 hours. By interacting this variable with the maximum EITC entitlement variable they have a measure of the additional effect of EITC on women who were probably entitled to the credit. Using this measure (and controlling for individual effects) they find that for white women an increase in EITC of \$100 increased the probability of female headship by 0.1 per cent (or 0.02 percentage points), whilst for black women it decreased the likelihood of female headship by 1.4 per cent (or 0.6 percentage points) (Dickert-Conlin and Houser, 1999:22 and 29). Although the latter result is not '*robust*', possible reasons for the different results for white and black women are: that they face different labour market opportunities; the earnings of the spouses of black women were sufficiently low that even if the women had a desire to work their likely combined income did not make them ineligible for EITC; and that the impact of EITC might vary by the route into female headship because non-marital childbearing varies by race (Dickert-Conlin and Houser, 1999:29 and 35).

Dickert-Conlin and Houser (1999:23-26) also conduct this analysis for a sub-sample of women with lower levels of educational achievement (that is, with less than high school education) because they are more likely to be in receipt of AFDC. The result for the predicted EITC eligible variable is statistically insignificant for both white and black women. In addition, in the analysis all unmarried women are counted as female heads if they have children and as non-heads if they are childless – thus it does not distinguish between cohabitating and non-cohabitating women. Nonetheless, an analysis for *single* heads gives similar results to when data for all unmarried women are used (Dickert-Conlin and Houser, 1999:32-33).

4.3 Overview

As noted in Section 1.5.5, Malthus was the first to propose the view that there is a systematic interplay between economic considerations and fertility (1798, cited by Clarke and Strauss (1998)). The work of Becker is, once again, influential in the more recent literature which views decisions on single parenthood and childbearing as being affected by the benefits and costs of the options available to women. Within this framework two broad approaches can be identified (Del Bono, 2004:2). The first highlights the role of welfare systems in '*making single motherhood more economically attractive*' and is particularly associated with Charles Murray (1984). The second approach focuses on men and women's economic opportunities, including the availability of marriageable men, and male and female unemployment and potential earnings.

Some commentators are concerned that welfare systems encourage non-marital births and single parenthood. Some early US studies would lend support to such a view - all of the significant studies in the Moffitt (1998b) review show that AFDC had a positive effect on single motherhood and fertility. However, overall results are mixed. Often where there is a welfare effect, it is not for the population as a whole, but for a sub-group. For instance, Schoeni and Blank (2000) find small but significant and positive effects on female headship for those with less than 12 years of schooling. Moreover, non-experimental designs that control for unobserved variables at the level of the individual find that the welfare effect is not only small but statistically insignificant.

Evidence of the impact of family caps is weak (Moffitt, 2003:350). Family caps tend to be part of a wider package of reforms and it is difficult to isolate the effect of the family cap from other policies. Moreover, no social experiments have varied the presence of a family cap holding other design features of the project constant.

That people's demographic behaviour is influenced by factors other than financial incentives in the welfare system is illustrated by those US studies that show that the family cap far from reducing non-marital births – as policy makers intended – was associated with increases in births.

Overall, the mixed nature of the findings suggests that there is no consistent and robust evidence that financial incentives in welfare systems affect childbearing and single parenthood decisions.

5 Implications for the UK welfare system

Summary

Identifying the policy implications of the literature reviewed is not straightforward, because there is ambiguity in the underlying theory about the direction of any welfare effect, the 'mixed' nature of the empirical findings and the key role of other factors important in influencing demographic behaviour.

Most of the reviewed research is international, and the application of the findings to the United Kingdom (UK) is limited by differences in policy and national/local context. Impact estimates cannot be simply applied to the UK.

Much of the literature is concerned with the possible effects of marriage penalties within the welfare system. However, a case for marriage penalties can be made. The argument for marriage penalties includes that couples benefit from the presence of household economies of scale, higher incomes, and from the time that a second adult can devote to a family. For society there may also be a trade-off between pursuing neutrality in the welfare system and achieving greater equity. Nonetheless, the literature includes discussions of the policy options for eliminating marriage penalties in the benefit and tax credit systems. The options are:

- Change the unit of assessment from the family/household to the individual.
- Introduce a transferable allowance for couples.
- Target families with children by, for instance, increasing the basic credit in Working Tax Credit (WTC) for couples with children.

Continued

The United States (US)-style family cap policy conflicts with fundamental principles of UK social policy including policies to reduce child poverty. However, options in the literature that may be more applicable to the UK include:

- Short-term:
 - Improve sex education in schools.
 - Improve contraceptive take up.
 - Improve access to early abortion.
- Longer term:
 - Increase employment opportunities for client groups (females and males).
 - Increase opportunities for further education for client groups (females and males).

None of the literature considered the cost-effectiveness of using the welfare system as opposed to other policies to affect family structure. The literature on other family policy instruments, such as family counselling, has not been reviewed, but it may be more cost-effective. Using the welfare system to 'nudge' family structure is also potentially in tension with other policy goals, such as tackling poverty, which are more effectively addressed by the benefit and tax credit systems.

5.1 Introduction

This chapter considers the possible implications of the reviewed research for the UK. In comparison to the US it does not appear that UK policy makers have actively sought to use the tax and transfer systems to influence demographic behaviour; even though it is acknowledged that policy can affect demography (Dixon and Margo, 2006:45). Welfare policies have generally sought to achieve goals other than demographic ones. So to the extent that the UK tax and transfer system has to date affected family structure, any impact would appear to be unintended.

Identifying the implications of the review for the UK is not straightforward, because there is ambiguity in the underlying theory about the direction of any welfare effect, other factors have a significant influence on demographic behaviour and the 'mixed' nature of the empirical findings, see Section 5.2. That there is more non-UK based research than UK research also raises the issue of the extent to which findings can be transferred to the UK especially from the US, see Section 5.3. Nonetheless, implications for the UK for making the welfare system marriage neutral, see Sections 5.4.1 and 5.4.2, and for minimising non-marital births, see Section 5.4.3, are addressed ahead.

5.2 Theoretical and empirical ambiguity

Explicitly or implicitly public policies incorporate substantive 'theories' or models about how the factors that policy makers can influence affect the outcomes desired. Some of the policy and public debate about the impact of welfare systems on family structure appears to imply that how benefits and tax credits affect behaviour is conceptually or theoretically unambiguous: that in principle the direction of the effect can be predicted. Thus, welfare systems are seen as leading to less marriage, and more cohabitation, non-marital births and single parents. However, the literature shows that the direction of the effect is, in theory, ambiguous. It may, for instance, lead to more or less marriage, see Section 1.5.

Moreover, the underlying theory provides little guidance as to whether the size of the impact of the welfare system on family structure is small or large. In addition, whether the effect is direct (receipt of benefit causes, say, single motherhood) or there is a selection effect (some women possess characteristics that mean that they are likely to be both benefit recipients and single mothers) can be unclear (see Bradbury, 2006). Moreover, observed impacts may be less than theory would predict because the traditional Beckerian model attempts to explain whether someone will marry rather than when they will marry (Ellwood and Jencks, 2004:18-19). Specifically, the model does not predict the age at which people will marry and hence cannot explain why people are delaying the age of first marriage. Nor does it help to explain non-marital childbearing.

The conceptual model in Figure 1.1 depicts the impact of the welfare system as being moderated and mediated by other factors. How the welfare system is seen as affecting demographic behaviour is important because it influences policy options. For instance, if receipt of Income Support (IS) had a direct effect on childbearing then increasing benefit rates would lead to more births and single mothers. However, if the effect is indirect or other factors lead to both benefit receipt and single motherhood then not increasing benefit rates could undermine the women's well-being as well as having no significant effect on future childbearing.

The review suggests the exact determinants of family structure are unclear, making it difficult for researchers to inform policy makers about how to approach the design of welfare and family policy. The empirical research suggests that, in general, the impact that welfare systems have on family structure is modest, mixed (i.e. it can be both positive and negative) and other factors are influential. Implying that simply changing the welfare system with the intention of nudging family structures in a certain direction is unlikely to have any major impact. So, for instance, Geronimus (1997) argues that the assumptions upon which US policy are based, while '*well-known*' are nevertheless either erroneous or presented with greater certainty than the evidence warrants. She suggests that the nature and scope of the welfare reform debate in the US resulting in Personal Responsibility and Work Reconciliation Act 1996 (PRWORA) reflected a view that poverty is the result of poor people's values and behaviours, and that this is justification for policy makers to intervene explicitly in the childbearing decisions of people on

welfare. However, Geronimus argues that the policy '*prism*' through which single parenthood is viewed:

'... may ill reflect the traditions or, more importantly, the environmental contingencies and life expectancy faced by members of poor families who hope to provide for children's well-being.'

Geronimus (1997:406)

Geronimus points out that:

'... the health of poor African American women deteriorates in measurable ways as early as the mid-20s, perhaps the consequence of long-term severe socioeconomic disadvantages.'

Geronimus (1997:415)

and that this necessitates early childbearing to give poor African American mothers a greater chance of supporting their children into early adulthood. Thus:

'... welfare policy makers ... fail to distinguish between the function of providing stability, care, and economic support to children that is most often provided by married couples in the United States from the form of marriage itself.'

Geronimus (1997:418)

Geronimus (1997:406) concludes that if '*apparent consensus siphons energy and resources away from searching debate about the nature of poverty, it presents a definite social danger*'.

5.3 Policy transfer

Much of the literature reviewed in this report is taken from the US, and this raises the question of the extent to which US findings can be transferred to the UK (see Midgley *et al.*, 2008). When assessing the applicability of findings for other countries to the UK it is crucial to locate those findings within their policy and local/national context. Arguably, important policy and other contextual differences mean that the US findings in particular cannot simply be transferred to the UK.

There are critical policy differences (such as, more generous benefits for women in the UK compared to the US) which mean that the context within which people take demographic decisions is very different. There is no UK equivalent of Aid to Families with Dependent Children (AFDC)/Temporary Assistance for Needy Families (TANF) and Food Stamps, nor of the pro-marriage policy ambitions underpinning the former. Even policies that might appear similar, such as Earned Income Tax Credit (EITC) and WFTC/WTC, contain vital differences. For instance, EITC has 'phase-in' and 'phase-out' stages; so that as recipients' income increases so the amount of credit payable increases (phase-in) until a maximum is reached and it then reduces (phase-out). WFTC and WTC have no '*phase-in*' stages; rather they incorporate a minimum working requirement of 16 hours per week. Consequently, neither the magnitude nor the statistical (in)significance of the effects observed in the US should be simply applied to the UK.

A further difficulty is that the US findings are mixed; there is no unambiguous lesson to learn. Indeed, the study by Harknett and Gennetian (2003) implies that caution is required when considering the policy transfer of research findings on the impact of welfare systems on family structure. They found that the direction of the effect of an earnings supplement on demographic behaviour differed between two sites within one country (Canada) (c.f. Section 2.2.4). The scope for the direct transfer of these findings to the UK is, therefore, limited. The context within which these studies take place is critical. Implying that policy makers should primarily draw upon UK research and not simply apply estimates from elsewhere in order to gauge the likely effects of the welfare system on demographic behaviour.

Non-UK studies may, however, help to inform UK policy makers about the likely direction of people's response to financial incentives and provide lessons on how policy-related research on this topic should be conducted, see Section 6.2. In many, but not all cases, the direction of any welfare effect on family structure is in the expected direction – even if the impact is statistically insignificant. Nonetheless, a general lesson from the US research is that actual behavioural responses to welfare system financial incentives are smaller than might be predicted. Demographic decisions are influenced by a range of complex interacting factors and people do not appear to simply react to financial incentives.

5.4 Welfare policy and the family

Much of the UK policy literature on welfare systems and the family is focused on the existence and impact of marriage penalties. There is also some concern about non-marital births. Accordingly, this chapter now focuses on marriage disincentives in, and policy options for, the welfare system (see Sections 5.4.1 and 5.4.2) and then policy options for reducing (non-marital) births.

5.4.1 Is there a case for marriage penalties?

This sub-section is focused on the case for and against marriage penalties and the next sub-section considers the options for eliminating penalties. It is recognised that there are broader moral and political issues beyond the scope of this review, namely, what is the purpose of marriage in today's society and whether government should promote marriage or other family forms. Moreover, this review has not explored the evidence on, for instance, the social benefits and costs of marriage as opposed to cohabitation.

Even in the US, where in recent years the state has adopted pro-two-parent family policies, few states have made a concerted effort to influence family structure through the welfare system. In part this may reflect a reluctance to use the system to influence what for many may be seen as a private matter, and if pursued may further stigmatise single parenthood (Fein *et al.*, 2002:1). It may also be (tacit) recognition that other policy instruments might be more cost-effective at steering demographic behaviour than the benefit and tax credit systems. None of the reviewed studies included a cost-benefit analysis making it impossible to know the

social costs and benefits of attempting to influence family structures through the welfare system. This review has also not looked at the literature on the impacts or cost-effectiveness of some other possible policies, such as family counselling.

One criticism of the welfare system is that it is not marriage neutral – indeed, that it imposes a penalty on marriage. The broad case for abolishing marriage penalties is that marriage is a ‘merit good’ and so should be promoted – that is, people may not be aware of the benefits from marriage to themselves and their children. There may also be benefits that accrue to society from marriage, which might otherwise incur extra costs, say, if cohabitation rates were higher. In addition, the existence of penalties may encourage fraud in the benefit and tax system as some couples may seek to avoid financial penalties (Brewer, 2007:225; Morgan, 2007:74-79). The removal of penalties would eliminate this potential fraud.

Even evidence that the welfare system may, at most, only have modest impacts on marriage rates has not deterred some from calling for the elimination of marriage penalties. Policy can have considerable symbolic significance. Some argue for the abolition of marriage penalties because they ‘*sent the wrong messages*’ about the importance of marriage (Fein *et al.*, 2002:1). For instance, Morgan (2007:124) states:

‘By rewarding some behaviours and penalising others, tax and welfare systems affect the preference and behaviour of individuals not just through hard cash calculations but by (unavoidably) embodying and promoting certain values and assumptions.’

Invariably those making this point are pro-marriage. However, such symbolic policies risk (re-)stigmatising other family forms. They undermine the acceptance of, and being neutral towards, individual choices about family structure.

In addition, there may be a rationale for not requiring the welfare system to be marriage neutral. One rationale for marriage penalties in the welfare system is the presence of economies of scale within households – fewer resources are required to maintain a standard of living for a second adult in a household than for the first (Eissa and Hoynes, 2000b:4). Married couples benefit from sharing resources – for example, the cost of accommodation for two people living together is less than twice the cost of accommodation for a single person (Brewer, 2007:218). That this occurs is acknowledged more widely in social security through the use of equivalisation scales. However, any such economies of scale accrue from any group of people living together and imply that these other living arrangements, such as cohabitation, should be treated like marriage. That is, the economies of scale argument cannot just be used to justify penalties solely for married couples.

It could also be argued that it is more difficult for a single mother to gain paid work than for a partner in a couple. The former is likely to want part-time work, which in turn is likely to be lower paid and the marriage penalty could be viewed as compensating for this. That is, couples tend to be better-off than single mothers so they are better able to cope with lower tax credits and benefits. There is, then, an element of equity in having marriage penalties in the tax and transfer system.

Moreover, a two adult household in comparison to a single person household benefits from the time that the second person can devote to the household and this has a monetary value. For instance, one partner in a two-parent family can undertake childcare, and whilst this is unpaid work, it has an implied monetary value in that unlike the single parent situation childcare need not be purchased. Higher benefits for lone parents therefore to some extent compensate for the need to buy in services that a two-parent family can obtain through specialisation.

In addition, eradicating marriage penalties might be expensive and not cost-effective; especially as they do not appear to have a major impact on behaviour. Whether the removal of marriage penalties would be cost-effective is unknown as there appears to be no published research in this area. However, the conceptual model outlined in Chapter 1 (see Figure 1.1) posited that the welfare system could affect family structure through employment and family income. Policies that generate sustainable employment for (unskilled) men possibly have more of an effect on marriage decisions (Burstein, 2007:419) than would the removal of marriage penalties. Moreover, improving women's earnings and educational attainment/employment prospects may increase the stability of marriages (Burstein, 2007:419).

As mentioned in Section 2.1.1, achieving marriage neutrality is problematic if Government's want to target financial support on low-income couples with children and the unit of assessment for benefits and tax credits is the household rather than the individual (see also Brewer, 2007:217-220). Moffitt *et al.* (1998:272) highlight that where policy treats married and unmarried families or children in non-cohabiting and cohabiting families differently there is a trade-off between neutrality and equity. Neutrality requires that, say, people's decisions about cohabiting should not be encouraged or discouraged by public policy. However, equity considerations might lead governments to compensate children in single parent families more than those in cohabiting couples, because the latter may have additional income or lower household expenses per person (see discussion previously). But if benefit payments are lower for children in cohabiting families compared to non-cohabiting families this undermines the neutrality principle.

5.4.2 Reducing marriage penalties

The literature does, however, contain some proposals for reducing marriage penalties that can be used individually or in combination:

- Change the unit of assessment from the 'family' to the individual.

Marriage penalties arise in part from having the 'family' (or benefit unit) as the unit of assessment in the welfare system.⁵⁶ Penalties could be tackled by introducing individual (rather than household) based benefits and tax credits (Carasso and Steuerle, 2005:170-1). There would then be no financial incentive for single motherhood – the single mother and the mother in a couple would

⁵⁶ Individualising benefits is also a policy option touched on by David Freud in his review of welfare to work (Freud, 2007:103-104).

receive the same amount of benefit/tax credit. This would imply, for example, changing the unit of assessment for WTC from the household to the individual. Thus, adults in two earner households would have separate claims for WTC. A variant of this is that total family income is allocated for tax purposes to dependants, and each 'slice' would be taxed as the income of that individual (Morgan, 2007:149).

However, this would undermine vertical equity considerations and the targeting of support on those with a low-income, as two mothers with the same nominal income might receive the same amount of credit but one lives with a partner on a high income and the other does not (see Adam *et al.*, 2002:15-16; Brewer, 2007:218; Moffitt, 2003:333). Whereas the UK has:

'... a tax and benefit system that redistributes income to couples who have a low combined income, rather than to individuals who have a low individual income.'

Brewer (2007:218)

Individualisation might also reduce tax revenues, and increase administrative and compliance costs (Alm *et al.*, 1999:203). The change in the assessment unit might also make the system even more complex to users.

In addition, individualising tax and benefits may be inappropriate if adults in the same household share their resources to some extent and benefit from economies of scale. The choice of unit assessment also has important implications for the financial autonomy of individuals in partnerships. Whether the unit for assessment for taxes and benefits for couples should be their joint or individual incomes will partly depend upon views about whether families do, or ought to, share resources.

- Transferable allowance.

Tax penalties could be tackled by introducing a transferable tax allowance for couples (Beighton and Draper, 2007:14-18); a variant of this would be to restrict the measure to only married couples rather than those cohabiting (Brewer, 2007:217). Individuals in couples would be allowed to transfer the unused part of their personal allowance to their partner (Brewer, 2007:228-230). This proposal would benefit one-earner families with children; indeed, it would reduce the incentive for one-earner couples to become two-earner households. To contain costs to the Treasury, the ability to transfer allowances might be limited to families with children aged under a certain age (say, six) and/or the transferred allowance to the basic rate of taxation.

- Target families with children.

Specific UK proposals include enhancing the tax credits for couple families to reduce the 'couple penalty' and/or introducing a tax allowance for married couples (Beighton and Draper, 2007:14-18).

One tax credit option is to increase WTC for couples with children, which could be achieved by increasing the basic credit for couples with children (Brewer, 2007:226-227) or to create a second credit for an adult within CTC or to introduce an income disregard for couples living together (Draper, 2005). Single parents would be unaffected by this proposal. It removes the penalty single parents face when they cohabit and would assist in combating child poverty. It would help one-earner families, but might discourage them from increasing their income by working more hours or moving to a job with a higher hourly rate.

As the proposal increases the credit paid to couples with children compared to couples without children, it might affect the childbearing decisions of the latter (but see Chapter 4).

An alternative is to increase WTC for two-earner couples only, for instance, by introducing an extra credit for two-earner families (Brewer, 2007:227-228). It would have similar impacts on the couple penalty as the previous proposal, but would also reduce the incentives for some couples not to increase their income.

A more radical option is to establish a universal benefit or tax credit system for families with children, so that they receive support regardless of marital status (Carasso and Steuerle, 2005:170-1). This could be seen as a variation on a 'Basic Income' scheme, although some argue that the cost of this option would be too high (Morgan, 2007:148-149).

It is possible that there is a feedback mechanism with family structure affecting labour supply decisions. Changes to the tax and transfer systems to make them more marriage/couple 'friendly' might affect work incentives (Brewer, 2007:219). In particular, the work incentives for the first earner in a couple can differ from those for a second earner (see also Buffeteau and Échevin, 2008:2-3). Thus, changes to marriage penalties to make the welfare system marriage neutral might have adverse effects on work incentives.

If union/marriage penalties are retained in the UK welfare system, then arguably the Government's should communicate more clearly the reasons for the differences in benefits for married and single households (Burstein, 2007:419).

5.4.3 Policy options for reducing (non-marital) childbearing

The US-style family cap policy conflicts with fundamental principles of UK social policy including policies to reduce child poverty. However, there are options in the literature that may be more applicable to the UK. These include:

Short-term

- Improve sex education in schools.
- Improve contraceptive take up.
- Improve access to early abortion.

Longer term

- Increase employment opportunities for client groups (females and males).
- Increase opportunities for further education for client groups (females and males).

However, Geronimus (1997:406) questions the merit of placing the reduction of teenage childbearing as an important goal of welfare reform:

'... welfare reformers focus narrowly on teenage childbearing and leave unexamined other important causes of persistent poverty. There is no doubt that teenage childbearing is associated with many social and public health problems. And high rates of teenage childbearing in socioeconomically disadvantaged communities likely result from the severe limits placed on the options available to the young for pursuing important goals. But none of these observations leads necessarily to the conclusion that reducing teenage childbearing itself, in the absence of other social changes, is either an attainable goal or one that would result in other social improvements. In targeting teen childbearing as a major activity for welfare reform, the basic question of cause and effect is consistently glossed over by policy makers and advocates.'

Geronimus (1997:409)

The question Geronimus argues policy makers need to address is:

'Would social problems be alleviated if the same women who become teen mothers postponed childbearing to older ages?'

Geronimus (1997:409)

The social force that determines labour market successes, according to Geronimus (1997), is inequality. In predominantly African American poor urban populations, which Geronimus (1997) suggests are some of the very populations where early childbearing gives rise to 'most concern in the general population' – the probability of premature death appears to be so high that teenagers who live in these areas cannot be confident that they will survive in to middle age. Geronimus (1997) cites figures showing that, for example, more than one-third of Harlem or Chicago south side women die by the age of 65 while less than three-quarters of Harlem or Chicago south side men survive to age 45 compared to 95 per cent of white males. In Harlem and Chicago south side, 15 year old men have less chance of surviving to the age of 45 than a typical white 15 year old American male has of living to be age 65. Geronimus (1997:423) suggests that premature death from chronic diseases, rather than the more widely publicised incidences of gang violence, are the primary reasons.

Geronimus (1997:426) suggests that if responsible parenthood includes maximising the chance that a parent will survive to see and help her child grow up, then insecurity about one's own longevity would be a serious consideration when deciding whether to defer parenthood.

The perspective that teenage childbearing represents trade-offs made in order to maximise children's well-being in hard circumstances may also explain why early childbearing has continued in extremely disadvantaged communities, despite increased access to contraception and abortion and in the face of public disapproval. It would also suggest that it may continue to exist in the face of welfare reform (Geronimus, 1997:426).

5.4.4 Welfare systems and modern living arrangements

This review touches on complex issues that transcend the public and private realms. In policy terms, a welfare system that was not neutral towards different living arrangements would have to trade-off this stance against vertical and/or horizontal equity. The benefit and tax credit system is probably more effectively and efficiently directed at dealing with issues of equity than it is at steering demographic choices. This is not to deny that the welfare system can have a modest effect on family structure, but that demographic behaviour is possibly better guided by other policy instruments. So whilst there is some evidence that many single parents aspire to marriage, the introduction of marriage friendly welfare policies may be less relevant – even less cost-effective - than policies that seek to help welfare recipients fulfil their pro-marriage desires.

More pragmatically, nowadays there is a wide range of family types (see Williams, 2005). If the wider context for social policy is a long-term decline in the rate of marriage, then (irrespective of whether policy makers believe that the trend can be influenced by the tax and benefit system) the case for using marital status in determining tax liability and benefit receipt is questionable. Arguably, the tax and benefit system needs to accommodate changes in family structure, with – if desired – other policy instruments steering demographic behaviour. Welfare systems are probably more suited to addressing other policy goals, such as tackling poverty and increasing the employment rate.

This does not mean that demographic behaviour should be ignored by welfare system policy makers. On the contrary, Carasso and Steuerle (2005:159) suggest that because policies are implemented piecemeal, there is '*... little coordination or thought to how they affect married couples.*' The implication is that the policy making process should be more holistic in considering the impacts of initiatives on family structure (see also Dixon and Margo, 2006:42-43).

5.5 Overview

The implications of the review are, of necessity, limited because how welfare systems affect demographic behaviour is not fully understood. In attempting to gauge the impact of welfare systems on family structure international evidence is of limited value because of key policy and local/national differences with the UK.

Nonetheless, the literature does include policy options for removing marriage penalties and reducing births. However, the case for using the welfare system to influence demographic decisions is unproven as it may not be cost-effective, as well as being at the expense of other policy goals, such as tackling work disincentives in order to combat poverty and social exclusion.

6 Conclusions

Summary

The impact of the welfare system on family structure is contested – and the empirical evidence provides mixed findings. Identifying any impact is also complicated by the analytical methods used.

There are implications arising from the review for future United Kingdom (UK) research and how any further research is carried out. There is a gap in the UK evidence base. There is a need for research that is more up-to-date in terms of policies covered, that has the potential to provide estimates of longer-term impacts and allows extensive sub-group analyses.

Researching the effects of the welfare system on family structure is difficult because establishing the causal mechanisms is problematic. Studies are complicated by the influence of other (unobserved) factors and the need for extensive sub-group analyses due to differential impacts of welfare systems on family structure.

The review finds mixed evidence that financial incentives in welfare systems affect family structure. Whilst there are studies finding significant impacts, these tend to be small and are countered by studies finding no relationship or the opposite effect. Overall, there is no consistent and robust evidence to support claims that the welfare system has a significant impact upon family structure.

6.1 Introduction

There are public and policy concerns about the impact of welfare systems on family structure. Even though welfare systems provide support to elderly and disabled people, the focus of this concern and of the research reviewed here is on the demographic behaviour of the non-disabled, working age population with a low-income (Hoynes, 1997b:101). There is in particular a sizeable body of United States (US) literature exploring the impact of Aid to Families with Dependent Children (AFDC) on family structure, notably on single motherhood arising from non-marital births.

This review shows that the impact of welfare systems on family structure is contested. Moffitt (1998b:67-68) conducted a major review of the US literature and shows that during the 1970s the research suggests that the welfare system had no effect on marriage and childbearing. However, during the 1980s and 1990s there was a consensus that it did have an effect (a negative effect on marriage and a positive effect on fertility); albeit the magnitude of that effect was uncertain with some claiming it was small and others that it was sizeable (Moffitt, 1998a:1 and 1998b:50). Moffitt's review also shows differences by race. A further theme emerging in his review is that in part these results seem to reflect the analytical method used, and the more the analyst controlled for unobserved heterogeneity the more likely the welfare effect was to be weaker, even insignificant (Moffitt, 1998b:71). Moffitt's 1998 review of non-experimental studies (see Appendix C) concluded that:

'A neutral reading of the evidence still leads to the conclusion that welfare has incentive effects on marriage and fertility, but uncertainty introduced by the disparities in the research findings weakens the strength of that conclusion.'

Moffitt (1998b:75)

However, in a later review Moffitt modifies his position slightly - notwithstanding uncertainty in the literature and a number of studies reporting insignificant results, he concludes welfare *'is likely to have some effect on family structure'*. (Moffitt, 2003:336). However, studies that incorporate controls for unobserved individual-level variables (for instance, Hoynes (1997a) and González (2007)) find no welfare effect and together with other studies, such as the meta-analysis by Gennetian and Knox (2003), suggest that even Moffitt's tentative conclusion overstates the impact.⁵⁷ On balance, this review concludes that there is no strong evidence of a persistent and large impact by welfare systems on family structure; albeit individual studies can be identified where a significant and large effect is found.

Although some contend that welfare systems impact upon family structure, across countries there is no consistent empirical evidence that demographic behaviour is influenced by benefit and tax credit systems. When significant effects are found they tend to be relatively small or modest. Bitler *et al.* (2004:214) commenting on the US literature observe:

'Overall, the estimated effects of welfare are relatively small in magnitude and cannot explain the secular decline in U.S. marriage rates and rise in divorce rates since the 1960s, during which average real welfare benefits declined ...'

This comment by Bitler *et al.* (2004) appears to be anomalous with the traditional economic orthodoxy which would imply larger effects. This might be for methodological reasons, as the review shows it is a difficult area to analyse; for theoretical reasons, there are ambiguities with the theory (see Sections 1.5 and

⁵⁷ An earlier version of the Hoynes' (1997a) paper is included in the Moffitt review (1988b).

5.2); for policy reasons, maybe the incentives are not large enough to have a significant effect; or for behavioural reasons, financial incentives may have little influence on individuals' demographic decisions.

It could be argued that the modest impacts on demographic behaviour reported in earlier chapters are because the incentives within the welfare system were not large enough. After all, in practise, the policies' financial incentives have been primarily designed to enhance recipients' employment prospects and earnings, not to affect family structures. However, it is difficult to identify the size of the incentive that would be required to affect demographic behaviour given the ambiguous nature and small size of the effects reported.

Moreover, the studies ignore the quality of family life. There is no attempt to capture the quality of a familial relationship (marriage or cohabitation) or a child's early years. Even if financial incentives were large enough to influence demographic behaviour there is no certainty that, for society as a whole, the quality of family life would be improved.

Much of the literature assumes that financial incentives affect people's choices. So, for instance, the theory underlying the family cap is that financial incentives and penalties are important determinants of behaviour and can be included in welfare arrangements to influence and control (poor) women's decisions to have children (Kearney, 2004:296). However, people may not respond in the way in which theories predict; people may not engage in rational behaviour in order to maximise their utility (Lewis, 2007:8). Evidence on the impact of work incentives on employment decisions can be used to support the case that the welfare system impacts upon family structure. However, decisions on demographic behaviour are arguably more complex and far-reaching than those about whether to increase hours of work or to accept a job offer. When asked, people do not necessarily identify financial matters as influencing decisions on family structure. For instance, the most common (unprompted) reason cited by clients of the Child Support Agency (CSA) for their relationship breakdown was that their partner had been seeing someone else (Wikeley *et al.*, 2001:38); and none claimed it would make them better-off financially (Henshaw, 2006:21).

The review findings also need to be considered against a background in which families are more fluid and dynamic. As non-traditional family forms become more common they are less stigmatised, and in such a milieu people may be less responsive in their demographic behaviour to financial incentives.

6.2 Research implications

The review has a number of implications for future research on welfare systems and demographic behaviour. These are discussed in this section.

6.2.1 Further research

The review shows that there is a need for further research on welfare systems and family structures. There are studies of the impact of the UK welfare system on family structure, but compared to the US the number of analyses is small. The varied nature of the US evidence suggests that more UK-based analyses are required to test the reliability of existing findings. Moreover, the UK evidence does not relate to the current welfare system; there is little on the impact of Working Tax Credit (WTC). There remains a lack of evidence on the effect of recent welfare-to-work programmes on family formation and childbearing (Mauldon *et al.*, 2002). Thus there is a need for further up-to-date UK studies that, over time, could provide evidence on longer-term impacts of the tax and transfer systems on family structure. Moreover, sample sizes for UK studies need to be sufficiently large to allow for detailed sub-group analyses as impacts are known to vary by sub-group (see ahead).

The reviewed (US) studies have tended to focus on the generosity of the welfare system – the level of benefits, rather than other aspects of the system, such as disregards and other support services (Moffitt, 1998b:57). However, these features might be of interest to policy makers because they might affect people's behaviour. Further work on these 'components' of the welfare system, and not just benefit amounts, might be useful.

6.2.2 Undertaking research on welfare systems and family structure

The studies reviewed also demonstrate that the analysis of the effect of tax and transfer systems on family structure is problematic. This is because (Carasso and Steuerle, 2005:161):

- It is difficult to establish empirically a causal link between financial incentives in the welfare system and demographic behaviour. Critically, even if, say, a couple calculate a possible marriage penalty (or bonus) before they marry this offers only limited evidence that it actually affected their decision to marry (or not). Conversely, even if people do not rationally calculate the financial implications of marrying they may still effectively be responding to incentives because they observe that unmarried couples have a higher standard of living (Carasso and Steuerle, 2005:161).
- Variables or factors other than financial incentives affect behaviour.

Specifically, an individual's social and cultural context may be a more influential determinant of behaviour than the welfare system. For example,

'Empirically identifying the effects of policy on demographic outcomes is particularly challenging: The decision to marry or cohabit is influenced by a set of difficult-to-observe factors, including social and community norms and personal tastes and preferences.'

Harknett and Gennetian (2003:451)

In the words of Gennetian and Knox (2003:9):

'Other factors such as community norms, culture or the local social policy context, including the dominant religion of the community and the stigma or acceptability of being a single parent, may also shape the influence of any change in women's economic circumstances on marital behaviour. If these important influences vary systematically for different identifiable subgroups of families, they may cause different effects on marriage for different identifiable subgroups ... However, because we do not fully understand how local context, economic opportunity structures, cultural norms and other factors affect marital decisions, these influences may lead to variations in impacts across families, sites, or studies that are difficult to explain.'

Inconsistent findings from social experiments in the US suggest that context is important – variations in findings can be attributed to the influence of political, social, cultural and economic factors operating at each site. The implication is that benefits and tax credits may have less of an impact on family structures than basic economic theory would suggest. Or, if individuals do respond to economic incentives the effect is influenced by local 'contextual' factors.

- There are complex interactions between a number of tax and welfare programmes that affect the financial impacts on households. Yet some analyses focus on one aspect rather than the combined effects of the tax and transfer systems. For instance, studies on the effects of union bonuses and penalties on marriage rates tend to ignore the effect of tax incentives on childbearing, yet these may also encourage marriage (see Rosenbaum, 2000).
- Much of the analysis reported here is focused on women's behaviour, but this may only provide a part of the explanation (Ellwood and Jencks, 2004:11). Research that explored the responses of both men and women might provide useful insights. The US literature in particular has focused on female headship rather than other forms of living arrangements that may involve single parents, such as cohabitation, 'sub-families', and single mothers doubling up within a household (typically a mother and daughter sharing a house) (Winkler, 1993).
- A related point is that not all studies carry out extensive sub-group analyses. Welfare systems might be expected to have differential impacts on demographic behaviour (Moffitt, 1998b:54). Whilst the overall effects may be small or insignificant, several studies do show that impacts vary by sub-group. The study by Moffitt *et al.* (1998) strongly suggests that where welfare systems treat cohabiting couples differently from married couples (for instance, different eligibility rules for stepfathers and cohabiting males unrelated to the children) then researchers need to distinguish between married and cohabiting couples. Harknett and Gennetian (2003:458) also argue that studies should distinguish between marriage and cohabitation, because the reasons for entry to, and the duration of, cohabitation may differ from that for marriage. Indeed, the effects of the welfare system on single people may be different from those on married couples (Bitler *et al.*, 2004:232). For instance, the impact of welfare systems

on the fertility decisions of single parents are likely to differ from those on couples (Brewer *et al.*, 2007:31). Gennetian and Knox (2003:9) go further and suggest that findings for populations mask important differences between sub-groups and variations in impacts by, for example, duration of claim (recent vs. longer-term recipients), age of mother, age and number of children, prior marital status and ethnic origin should be explored. For example, it might be expected that, for those already in receipt of benefits, changes to the system could affect second and subsequent fertility decisions whereas this is less likely for those flowing onto benefits. In addition, analyses of childbearing tend to focus on the birth of the first child rather than on subsequent births. Yet a full understanding of the effect of financial incentives on family structure needs to include birth order and parents' decisions about having further children (see Brewer *et al.*, 2007:32). Similarly, welfare systems might have more of an impact on re-marriage decisions than on divorce/separation decisions which may be more influenced by other factors.

- A possible reason for the absence of large effects in the reviewed literature could be that there is a considerable lag between a benefit/tax initiative and it affecting demographic behaviour. In general, the studies do not measure longer-term effects; and longer observation periods may be required especially for studies of the impacts of welfare systems on fertility (Fein *et al.*, 2002:6). Gassman-Pines and Yoshikawa (2006:25) who find a significant and large impact (8.9 percentage points) for the New Hope project on the marriage of never-married women at year five argue that, to detect changes in demographic behaviour, longer follow-up periods are required. However, welfare and fiscal policies change over time making it difficult to establish any longer-term impact on family structure (Carasso and Steuerle, 2005:161).
- The US research in particular shows the importance of controlling for economic variables (for example, local wage rates) in the analyses (Harknett and Gennetian, 2003:456).

The review has highlighted that findings can vary by analytical method. As Moffitt (1998b:50-51) observes this is problematic because:

'Whether the differences in study findings are the result of inherent differences in different datasets or differences in the way the data are analyzed for example, in estimating techniques, definitions of variables, characteristics of the individuals examined, other influences controlled for, and so on is difficult to determine because most authors do not systematically attempt to determine why their findings differ from those of other studies.'

Nonetheless, the lesson for the UK is that adequate controls for unobserved variables need to be included in non-experimental and quasi-experimental studies.

In addition, the data requirements for studies are demanding. To investigate if welfare systems affect actual behaviour, longitudinal (panel) data are required. Data with sufficient in-group variation are required to control for unobserved variables, and to allow for changes over time, trend data are also required. Repeat cross-sectional data may be used, but will not allow fixed effects at the individual level to be included in the analysis.

6.3 Final thoughts

In conclusion, this review finds mixed evidence that financial incentives in welfare systems substantially affect family structure. Whilst there are studies recording significant impacts, these tend to be small and are countered by studies finding no relationship or a negative effect. Overall, there is no strong evidence to support claims that the welfare system is responsible for the breakdown of the traditional family. This is not to say that individual studies could not be highlighted to demonstrate the contrary position, but that the balance of evidence is that welfare systems have only a small impact on family structure. In particular the magnitude of the impact is not as large as might be predicted by 'traditional' economic theory. This is not to deny the existence of financial incentives, such as marriage bonuses and penalties in the welfare system, but that, on balance, other factors appear to be more important in affecting demographic behaviour. There are two caveats to this conclusion, first, it is based on a reading of selected literature; this was not a systematic review nor did it involve a meta-analysis, and secondly, the observation that other factors may be more crucial is in part based on findings from non-UK countries. The implication of, for instance, making tax and transfer policies more 'pro-marriage' is that any changes would be largely symbolic and the actual effect on behaviour would be small. Any changes would essentially be a '*statement of values*' (Burstein, 2007:419).

Policies that appear to have a bigger impact on demographic behaviour than the welfare system include family planning and counselling services. (However, this review has not examined the literature on the effectiveness of these policies.) This does not mean that welfare-to-work programmes have no role to play, as promoting participants' employment and income, especially those of less skilled males, can help provide a secure financial setting that makes marriage and childbearing more feasible for low-income households (see Del Bono, 2004:17).

There are policy trade-offs in the objectives for the tax and benefit systems (Brewer, 2007; O'Donoghue and Sutherland, 1999). Being 'neutral' towards the family implies trade-offs with, for example, maintaining progressivity, treating families with similar total incomes the same, introducing complexity into the tax and benefit systems, and so on. Changing the benefit and tax system to, say, remove marriage penalties, could also have implications for work incentives for financially dependent partners and for targeting financial support to low-income families with children (see Brewer, 2007 and O'Donoghue and Sutherland, 1999). Thus, using welfare systems to promote specific demographic behaviours may involve trade-offs with other policy objectives.

Another key conclusion, however, is the paucity of 'hard evidence' for the UK on how financial incentives affect demographic norms, attitudes and behaviour. As the impact of the welfare system on family structure is likely to remain a topic of policy and public debate, welfare-related research and evaluations should, as a matter of routine, incorporate detailed demographic variables for analysis.

Appendix A

Non-experimental methods of analysis

The main non-experimental methodologies used to identify the impact of welfare systems on demographic behaviour are as follows (Hoynes, 1997a:92-94; Moffitt, 1998b:57-59; Moffitt, 2003:336):

- Regression analyses are used to exploit cross-sectional data on differences in benefits between states to measure the welfare effect (see Moffitt, 1994 and 1998a; Schultz, 1994). These analyses model the outcome variable (usually marriage or fertility) as a function of individual characteristics, the level of State welfare benefits and, less often, other state characteristics (Hoynes, 1997a:92; Moffitt, 1998b:58). However, the estimated impact of the welfare system will be biased if there are any omitted state factors, such as social norms or religious characteristics, that are correlated with both family structure decisions or (through voter preferences) state welfare policies (Ellwood and Bane, 1985, cited in Hoynes, 1997a:91; Hoynes, 1997b:129; Kearney 2004:299; Moffitt, 1994; Ribar, 2003:1). Indeed, social norms and cultural factors are likely to affect demographic behaviour and possibly welfare policy. Hoynes (1997a:93) notes:

'... if the population in a given state believes strongly in the two-parent family, the state may not have much support for an Aid to Families with Dependent Children (AFDC) program and, hence, it may offer low benefits. In general, if the unmeasured effects are positively (negatively) correlated with welfare benefits then the estimated welfare effect will overestimate (underestimate) the true effect.'

Yet these socio-cultural factors are often unrecorded in analysts' datasets, and so cannot be simply added to the statistical models (see also Ribar, 2003:12-14). The inclusion of indirect measures might reduce bias, but some bias will remain.

A possible further weakness of this approach is that the analyses do not provide information on the timing of demographic transition (Morgan, 2007:96).

On the other hand, if demographic behaviour takes a long time to respond to the welfare system it is possible that this 'comparison-of-levels' approach (unlike the approach to be discussed ahead) measures this longer term response (Moffitt, 1998b:59).

- Panel data or repeated cross-sectional data can be pooled to model variations in benefits over time using regression analysis (Moffitt, 1994 and 1998b:58). These are often called 'fixed effects' models and they capture unobserved factors common to all residents of a country, region or state, such as state divorce laws or support services and characteristics of potential spouses. The welfare effect in a state fixed effect model is captured by within state variation (or changes) in benefits over time, which is compared with changes in, say, marriage and fertility. The advantage of this approach is that the analyst does not have to specify exactly which variables are missing, only the structure of the omitted variable (Ribar, 2003:19). Moffitt (1998b:58) provides an example:

'... the low AFDC benefit levels and high marriage rates in most southern states may not be a reflection of a true welfare effect but may instead reflect the fact that the South is socially a relatively conservative region where social and cultural norms encourage marriage, as well as being a relatively conservative region politically where elected representatives do not legislate generous welfare benefits. ... [A] positive correlation between benefit levels and marriage (for example) would arise because there is a third variable social, cultural, and political norms that leads to them both, not because benefits affect marriage.'

It is important that the omitted variables are time-invariant and that within the data there are variations over time in the observed indicators. The method does not deal with omitted variables that are time varying – thus it is assumed that the omitted variables, for instance, social norms have not changed over time. So state fixed effects control for unobserved variables that vary across states (but not over time).

If demographic behaviours do not respond fairly quickly to changes in benefits and tax credits then datasets covering a relatively long period of time are required to capture changes. If such data are not available then this approach may only capture short-term responses to changes in benefits and tax credits (Moffitt, 1998b:59). However, if data are available for long periods of time, it might not be justifiable to assume that state effects are fixed throughout the observation period.

Compared to cross-section designs the inclusion of fixed effects, which provide increased control for unobserved variable, can reduce the significance and magnitude, even the direction, of any impact of welfare systems on family structure (see, for instance, Moffitt, 1994).

Models with state fixed effects also tend to include year fixed effects. These effects control for average changes in, say, marriage or divorce within a given year that are common to all areas (say, states).

- There may also be individual effects that are unobserved and correlated with welfare policy, especially if the data have to cover a relatively long period of time. In a pooled cross-sectional model these individual effects may be correlated with the generosity of the state's welfare system and arise through inter-state migration and changes in the composition of the sample. The use of panel data enables the identification of welfare, state and individual effects (Hoynes, 1997a:91). Analysing individual effects requires a panel dataset in order to control for changes in the composition of the sample over time. To the extent that studies do not control for individual effects, but only state effects then they may be biased through inter-state migration and sample attrition and entry. The individual effects capture time-invariant unobserved variables at the level of the individual.
- Within state studies using a determinant of benefits that does not correlate with family structure. These studies require recipients to be offered different levels of benefit or involve comparisons between those eligible and not eligible for welfare benefits. The problem in practice is that differences in benefit levels are usually associated with a demographic characteristic so finding suitable explanatory variables is difficult.
- There have been a small number of time-series studies that attempt to explore the contribution of the welfare system to observed falling rates of marriage and increasing rates of nonmarital childbearing (Moffitt, 1998b:55-56). A number of US researchers (for instance, Hoynes, 1997b:125-126) have observed that if financial incentives affect family formation then the observed fall in the real value of welfare benefits (especially AFDC since the mid-1960s) should be associated with declines in female headship and non-marital births, but instead they have continued to increase. Suggesting that factors other than financial incentives are operating to influence demographic behaviour. However, controlling for all the possible factors that change over time is very difficult. Even though the fixed effects analyses mentioned previously require longitudinal (at least, repeat cross-section) data, analysts have tended not to conduct time-series analyses. Indeed, they typically include dummy variables for years in regressions in order to eliminate the influence of time trends (that is, to control for year effects).

In summary, the main non-experimental methods used (primarily in the US) seek to investigate whether there is a welfare effect on family structure by using variations in benefits between individuals within states, between states and between states over time (Hoynes, 1997b:124; Moffitt, 1998b:57). However, the source of variation and the controls for unobserved heterogeneity that are used affect the reported significance and magnitude of the welfare effect on demographical behaviour. In addition, using variation arising from state and over time differences only provide information on the marginal effects of the welfare system on family formation. They do provide estimates of how the very existence

of tax and transfer programmes affect demographic behaviour. Thus these studies '*... are limited in their ability to make predictions about eliminating programs.*' (Hoynes, 1997b:124). This is important since policy makers might wish to know the consequences of cancelling a programme. However, such information may be gained from experimental research designs.

However, for studies of childbearing there are further analytical issues. Geronimus (1997) argues that studies employing standard multivariate techniques to control for specified, measurable background characteristics are likely to overestimate the negative consequences of teen childbearing. She suggests more accurate findings can be derived from comparing sisters, which in effect controls for factors such as general access to resources during childhood, cultural environment, neighbourhood and school system but not personal antecedents of early childhood and is likely to produce estimates of effects of teenage childbearing on subsequent economic success that are still upwardly biased but which highlight the extent to which unobserved factors associated with family background account for poor economic fortunes of teen mothers. (Geronimus, 1997:411).

Geronimus (1997) suggests that a better approach than using sisters is to compare outcomes for teenage mothers and teenagers who get pregnant but miscarry which, she suggests, effectively randomly allocates motherhood to teens. Geronimus (1997) argues that for key economic outcomes bearing directly on the question of long-term economic self-sufficiency, findings from studies using these methods challenge the assumptions upon which policy is based. These studies reduce effects estimated by more traditional methods by at least 50 per cent and in some cases find no independent effect of teenage childbearing on important economic outcomes. Geronimus and Korenman (1992, cited by Geronimus, 1997:412) reported no relationship between teen childbearing and high school graduation or subsequent family income in their analysis of sister pairs in the National Longitudinal Survey of Young Women. Using more recent data from the Panel Study of Income Dynamics, Corcoran and Kunz (1997, cited by Geronimus, 1997:412) found teen mothers to be no more likely to be welfare recipients after the age of 25 than their sisters who became mothers at older ages (Geronimus, 1997:412).

Appendix B

UK studies modelling the amount and distribution of union bonuses and penalties

The focus of this review is to explore the actual impact of welfare systems on family structure. Some analysts model the size and distribution of union bonuses and penalties but not whether they subsequently affect behaviour. This appendix outlines two such United Kingdom (UK) studies by Anderberg *et al.* (2008) and Draper (2008). They provide some information on who is likely to be affected as well as estimates of the size of any bonus or penalty. However, their findings should be considered in light of the criticisms made of this approach in Section 1.6.1.

Anderberg *et al.* (2008) use Family Resource Survey data 1995-2004 to simulate partnership or union bonuses and penalties by comparing what couples aged 20-60 would receive in welfare transfers when living together and apart.⁵⁸ The welfare payments included in the analysis are Family Credit (FC), Income Support (IS), tax credits, Housing Benefit and Council Tax Benefit (HB/CTB). The tax credits considered are WFTC and WTC/CTC.⁵⁹

In general, Anderberg *et al.* (2008:3) report that:

- Reforms to IS (the increases to the then child premia in 1999 and their transfer to CTC from 2003) meant that the union penalty in IS increased (from an average of £67.90 per week in 1996 to £78.80 in 2001) and then diminished (to an average of £44 per week in 2004) (Anderberg *et al.*, 2008:6 and 11).

⁵⁸ This study appears to be a development of earlier research by Anderberg (2007).

⁵⁹ The Children's Tax Credit is included in WFTC.

- Tax credits generate partnership bonuses for some couples and penalties for others.
- The majority of couples were affected by partnership bonuses or penalties. An analysis of three selected years (1996, 2001 and 2004) to represent the Family Credit (FC), WFTC and WTC/CTC regimes respectively shows that in general around 90 per cent of couples faced a partnership penalty (Anderberg *et al.*, 2008:9-11).⁶⁰ Less than one in ten had a partnership bonus.⁶¹ Furthermore, under the WTC/CTC/benefit system more couples faced a partnership penalty compared with the WFTC/benefit system (an increase of six percentage points). This increase was driven by a dramatic increase in the proportion of couples facing a tax credit partnership penalty – an increase from 28 per cent in 2001 to 64 per cent in 2004. (In contrast, the proportion of couples facing a partnership penalty due to Income Support fell slightly from 28 per cent in 2001 to 26 per cent in 2004.) Similarly, under the WTC/CTC regime fewer couples faced an overall tax credit/benefit partnership bonus (a decrease of 5 percentage points). *'Hence the system in 2004 is, on average, less partnership friendly than the system in 2001.'* (Anderberg *et al.*, 2008:9). This change is mainly due to policy reform (see ahead).
- Often the amount of the bonus or penalty is large. The analysis shows that across all three selected years 20 per cent of couples had an overall partnership penalty of £60 or more per week (Anderberg *et al.*, 2008:9). Moreover, the replacement of FC with the more generous WFTC meant that the average size of credit/benefit partnership bonuses grew – from £7.80 per week to £16.90 per week (Anderberg *et al.*, 2008:11). In addition, under the WTC/CTC/benefit system the average partnership penalty was larger than under the WFTC/benefit system – £46.60 per week compared to £38.10 per week – whilst average partnership bonuses were smaller – £13.90 per week under the WTC/CTC/benefit system compared to £16.90 per week for the WFTC/benefit. This reduction in overall partnership bonuses was largely due to the transfer of IS child premia to CTC. For the typical case (man working at least part-time and the woman not in paid work), under WFTC the partnership bonus was the entire amount of the couple's tax credit. However, under WTC/CTC if the couple were to separate, the man (without care of the children) could be eligible for WTC and the woman would receive CTC. Deducting this potential payment from the combined WTC/CTC they would obtain as a couple gives the smaller (net) partnership bonuses.

⁶⁰ By year, the proportions for partnership penalties were: 1996, 87 per cent; 2001, 86 per cent; and 2004, 93 per cent (Anderberg *et al.*, 2008:11).

⁶¹ By year the proportions for couples who faced a bonus were: 1996, eight per cent; 2001, ten per cent; and 2004, five per cent (Anderberg *et al.*, 2008:11).

- A sub-group analysis of the WFTC/benefit system reveals that average weekly bonuses and penalties tended to be larger for:
 - couples with children compared to childless couples;
 - women who are economically inactive compared to those working part-time or full-time (although the proportion facing a penalty is lower for those not in employment (71 per cent compared to 93 per cent);
 - couples with females aged 30-50 years as younger and older women were less likely to have dependant children;
 - couples with fewer educational qualifications because they were more likely to be economically inactive (Anderberg *et al.*, 2008:12-15).

In addition, analysis of the 1999 WFTC/IS reforms and of the introduction of WTC/CTC shows that the distribution of bonuses and penalties changed over time, partly due to these reforms and partly due to demographic changes (such as changes in the composition of the population). This analysis entails simulating what would have happened had the policy not changed (the counterfactual). Changes in partnership bonuses and penalties in this counterfactual will reflect compositional changes in the population, whilst actual changes not found in the counterfactual scenario will reflect the policy reforms (Anderberg *et al.*, 2008:15). In terms of the policy reforms (Anderberg *et al.*, 2008:16-17):

- The introduction WFTC and increases in the child premia in IS improved partnership bonuses. The reforms increased both the proportion of couples facing a bonus and the average amount of the bonus (and decreased the proportion facing a penalty, but had no affect on the amount of the average penalty). The increase in the average amount of the bonus was due to the greater generosity of WFTC compared to FC.
- The WTC/CTC reform, however, was less favourable towards partnership. The reform decreased both the proportion of couples facing a bonus and the amount of the average bonus (and increased both the proportion facing a penalty and the size of the penalty). The decrease in the size of the average bonus reflects the smaller bonus some couples received from the couple/lone parent element of the new tax credit.

In both cases, these changes were due to tax credit reform; the IS reforms did not influence the proportion of couples facing a partnership bonus or penalty.

In terms of demographic changes, an increase in the labour force participation rate of women has led to a small increase in the proportion of couples facing partnership penalties and a small reduction in the proportion facing bonuses (Anderberg *et al.*, 2008:17-19). A consequence of increasing female economic activity is that the proportion of couples confronting a penalty due to IS has decreased. However, the concomitant change is that there is an increase in the proportion of couples with a tax credit penalty.

The modelling by Anderberg *et al.* (2008) is based on a number of assumptions, including that the supposed union dissolutions do not affect the supply of labour (that is, individual earnings), that benefit take-up is 100 per cent, and that the woman would remain the primary carer after union dissolution. The analysis excluded any couple with adults who were long-term sick or disabled, retired, unemployed or self-employed. The modelling also excludes any maintenance payments. (Yet Draper (2008) suggests that maintenance payments reduce partnership penalties, so this is a significant omission.) The finding outlined above must be interpreted in light of these assumptions.

A smaller scale and less comprehensive study by Draper (2008) takes 98 families and estimates the difference in disposable incomes after housing costs for couples if they live together and apart. Separate estimates before and after maintenance payments are also made. However, these are stylised families – unlike the Anderberg *et al.* (2008) analysis they are not actual families (Draper, 2008:8). Moreover, the selected families are not a nationally representative sample of familial types, although Draper (2008:8) claims that they represent ‘a fair cross-section of families’ on average and below average incomes. However, the nature of the sample used does limit the generalisability and validity of the study.⁶² Nonetheless, the estimates can be used to identify types of couples that might be affected by partnership penalties and bonuses. The estimates show that the partnership penalty is lower after housing costs are taken into account and if maintenance payments are made. The disincentives are higher for couples living in the private rented sector, one-earner couples, two-earner couples with high joint incomes but modest incomes individually, and couples on IS. There are few penalties (even bonuses) for couples living in owner occupation with a mortgage and two-earner couples with ‘low’ incomes.

Notwithstanding that some couples face sizable bonuses and penalties, the Anderberg *et al.* (2008) and Draper (2008) analyses do not tell us if the existence of a penalty (or bonus) is sufficient to alter behaviour; whether couples facing, say, a penalty were more likely to separate than other couples is unknown. Such an analysis would require the use of panel or pooled cross-sectional data.

⁶² For this reason no figures are quoted from this study.

Appendix C

Summary of Moffitt's (1998b) review of US non-experimental studies

There are a number of reviews of the literature on the impact of welfare systems on family structure and the most often cited is Moffitt (1998b), who reviewed 68 estimates of Aid to Families with Dependent Children (AFDC's) effect on marriage, single motherhood, female headship, fertility and abortion over the period up to 1996. A summary of his review findings is given in Table C.1. Moffitt (1998b:67-68) shows that during the 1970s the research suggests that the welfare system had no effect on marriage and childbearing. However, during the 1980s and 1990s there was a consensus that it did have an effect (a negative effect on marriage and a positive effect on fertility); albeit the magnitude of that effect was uncertain with some claiming it was small and others that it was sizeable (Moffitt, 1998a:1 and 1998b:50):

'A neutral reading of the evidence still leads to the conclusion that welfare has incentive effects on marriage and fertility, but uncertainty introduced by the disparities in the research findings weakens the strength of that conclusion.'

Moffitt (1998b:75)

Subsequently, Moffitt modifies his position slightly - notwithstanding uncertainty in the literature and a number of studies reporting insignificant results, he concludes welfare *'is likely to have some effect on family structure'*. (Moffitt, 2003:336).

However, this is based on giving equal weighting to the studies regardless of the extent to which they sought to control for unobserved variables (Moffitt, 1998b:70). Yet there are more estimates for studies that did not control for unobserved heterogeneity than for those that did and, by race, the two approaches suggest different welfare impacts. That is, there is a link between the analytical approach used (or source of benefit variation) and whether a welfare effect is found by race.

For the estimates not including controls for unobserved heterogeneity slightly more studies reported significant effects (18) than insignificant effects (15) (Moffitt, 1998b:68-69). However, the studies imply a larger effect for white women (with nine significant and only two insignificant estimates) than for non-white and black women (with six significant and seven insignificant estimates). In comparison, for the smaller number of studies including controls for unobserved variables (that is, fixed effects) the estimated effect on white women is weaker (four significant and four insignificant estimates). However, the results for non-white and black women are stronger (with five significant and only one insignificant estimates).

So:

'Overall, although there is a very slight excess of significant estimates over insignificant ones across all races, it is quite small. However, the patterns differ by race and source of benefit variation The difference in how benefit variation affects family structure between the two races is a result of a different sorting of single mothers by state for the two races, with white single mothers tending to be concentrated in high-benefit states but black single mothers tending to be concentrated in low benefit states.'

Moffitt (2003:336)

Moffitt (1998b:71) highlights that the studies control for different State level variables. Whether labour market, demographic and/or political characteristics are controlled for varies, as does which specific variables are used. For example, labour market variables include rate of unemployment, median or average wages, and percentage employed in specific sectors. His review suggests:

'... the more variables that are controlled for in an analysis, the weaker is the estimated effect of welfare – although there is no logical reason why this need be so ...'

Moffitt (1998b:71)

Nonetheless, in substantive terms, all of the significant studies in the Moffitt (1998b) review show that AFDC had a positive effect on single motherhood/fertility and a negative effect on marriage.

Table C.1 Number of estimates of welfare effects on marriage and fertility in review by Moffitt (1998b)

Type ^d	All races ^a			White			Non-white or Black		
	Insignificant	Significant ^b	Mixed ^c	Insignificant	Significant ^b	Mixed ^c	Insignificant	Significant ^b	Mixed ^c
All	8	5	1	8	13	5	10	12	6
Cross-state levels	6	3	1	2	9	4	7	6	3
Cross-state changes ^e	1	2		4	4		1	5	2
Within-state	1			1			1		
Time series				1		1	1	1	1

Notes:

- ^a Study did not report separate estimates by race.
- ^b Reported a significant negative effect on marriage or a significant positive effect on fertility or both.
- ^c Reported a mix of significant and insignificant estimates.
- ^d For a discussion of the different types of model see Appendix A.
- ^e Models that include fixed effects to control for unobserved variables.

Source: Table 4.1, Moffitt (1998b:68)

Appendix D

US studies modelling the amount and distribution of union bonuses and penalties

This review considers the impact of the welfare system on demographic behaviour. However, some United States (US) analysts model the size and distribution of union bonuses and penalties but not whether they subsequently affect behaviour. This appendix outlines selected US studies estimating marriage bonuses and penalties for Temporary Assistance for Needy Families (TANF) and Earned Income Tax Credit (EITC).

D.1 Temporary Assistance for Needy Families

Acs and Maag (2005) use data for cohabitating couples with children from the 2001 National Survey of America's Families and a tax-transfer simulation model to estimate the union penalties and bonuses arising from TANF, given known tax changes for 2003 and 2008.⁶³ They hypothetically 'divorce' couples (see Section 1.6.1) to calculate union bonuses and penalties. They find that most low-income cohabiting couple with children (86 per cent) do *not* receive TANF and by definition receive no penalty or bonus due to TANF (Acs and Maag, 2005:6). Nonetheless, TANF interacts with the tax system to alter the potential marriage bonuses and penalties that cohabitating couples with children face. For the 9.6 per cent of low-income cohabiting couples that faced an average tax penalty of \$1,004 in 2003, marriage would result in an average loss of \$1,800 in TANF benefits giving an overall loss of \$2,804. Under the 2008 tax changes the potential loss in TANF benefits was unchanged but increases in the tax penalty increased the combined tax and TANF loss to \$3,311. For the 65.2 per cent of low-income cohabiting couples that faced an average tax bonus of \$2,939 in 2003, the potential loss

⁶³ TANF is outlined in Section 1.4.3.

in TANF benefits was \$2,096 leaving them with a small overall bonus of \$843. However, planned tax changes for 2008 would increase the tax bonus (the loss of TANF benefits is the same) giving an overall tax-transfer bonus of \$1,294. Thus Acs and Maag (2005:6) conclude that:

'For low-income families, the potential loss of cash welfare benefits under TANF may be a greater financial barrier to marriage than any bonus or penalty resulting from federal taxes.'

However, their analysis only applies to cohabitating couples with children and ignores other family forms, and the TANF modelling makes a number of simplifying assumptions and does not capture fully the variation in states' eligibility rules for TANF. Moreover, Acs and Maag (2005) simulate marriage bonuses and penalties, and as mentioned elsewhere in this report, such studies do not explore whether the identified financial incentives and disincentives affect actual behaviour.

D.2 Earned Income Tax Credit

As mentioned in Section 2.1.1, there are marriage bonuses and penalties associated with EITC. It can provide both marriage bonuses and penalties relative to cohabitation or living independently. This is because it has both phase-in and phase-out (or withdrawal) stages. For a working parent EITC increases as income rises (phase-in stage), there is then an income range where the amount of credit does not change (a 'plateau' where the maximum credit is payable), and, finally, as income rises further the amount of credit received falls (phase-out stage) until it diminishes altogether. So if a single parent marries and the couple's joint income take them above this phase-out threshold they face a marriage penalty (Carasso and Steuerle, 2005:163), and they face high marginal rates of taxation (Ellwood, 2000a:194). However, if a low earner marries a non-earner with a child they may receive a marriage bonus if they file jointly, as their combined income entitles them to a larger credit than if they claimed as two unmarried individuals (Holtzblatt and Rebelein, 2000:1108).⁶⁴ Similarly, a two-earner couple with children and a modest joint income could be ineligible for EITC if married, but receive it they do not marry. Cohabiting couples can also receive union penalties and bonuses. In general, EITC provides a marriage subsidy to single-earner families and a marriage penalty to two-earner households (Dickert-Conlin and Houser, 2002:27; Eissa and Hoynes, 2000:687). Given the gendered nature of employment this will tend to penalise marriage for women who work and subsidise those women who do not.

In recent years the Federal Government has sought to reduce the marriage penalties in EITC and the wider tax system. The Economic Growth and Tax Relief Act 2001 created a separate married-couple schedule for EITC, which was phased in between 2002 and 2007 (Hoffman and Seidman, 2003:84 and 95). This Act extends the 'plateau' of maximum EITC for married couples so that the phase-out stage commences at a higher income.

⁶⁴ In the US married couples can for income tax purposes file either jointly or separately. Most couples file jointly because this reduces their income tax liability (Holtzblatt and Rebelein, 2000:1110).

In practice, US families' overall marriage bonus and penalty is affected by the interaction between the tax and transfer systems. So that, for instance, the penalty arising from the loss of TANF can in certain circumstances be offset by a marriage bonus from EITC.

In theory, there is an incentive to marry during the (generous) phase-in of the tax credit and to dissolve partnerships during the phase-out of EITC because it only counts the income of married partners (Blundell and Walker, 2001:31; Carasso and Steuerle, 2005:168).⁶⁵ As Scholz observes:

'In general, positive incentives to marry are provided to low- or zero-earning taxpayers with children; and positive incentives for separation (or negative incentives for marriage) are provided to couples with children when each has modest earned income.'

Scholz (1994:9)

Ellwood (2000a) makes the same point but adds that phasing-out of EITC is accompanied by the loss of Food Stamps and the phasing in of federal taxes (see also Carasso and Steuerle, 2005:168). As a consequence recipients have high effective marginal rates of taxation.

Some writers, such as Acs and Maag (2005), Dickert-Conlin and Houser (1998) and Holtzblatt and Rebelein (2000) use survey or administrative data and micro-simulation models to estimate the size of the dis/incentives in EITC for partnering. These studies tend to 'divorce' the married couples (see Section 1.6.1) when calculating marriage bonuses and penalties. Dickert-Conlin and Houser (1998) utilise hypothetical families to derive their estimates (see also Eissa and Hoynes, 2000:687; Hoffman and Seidman, 2003:84-86), whilst Holtzblatt and Rebelein (2000) focus on different family arrangements. The simulations by Dickert-Conlin and Houser (1998) suggest that marriage tax penalties are relatively large and that those facing the highest marriage bonuses in the tax system (in part due to EITC) also had the largest marriage penalties in the welfare system. Acs and Maag (2005:3-6) (see also Section D.1) find that for cohabitating couples tax changes introduced by President Bush and coming into effect in 2003 and 2008 have made the welfare system more '*marriage-friendly*' – the proportion facing penalties if they were to marry has decreased. The proportion of low-income cohabitating families with children receiving a bonus in 2003 was 63 per cent and this is estimated to rise to 75 per cent in 2008. Moreover, the size of the average tax bonus and penalty was expected to increase by 2008. For low-income families the main source of marriage penalties was EITC. Penalties increase in size because cohabitating couples in 2008 became eligible for fewer and lower non-EITC tax credits and so will be less able to offset their tax liabilities.

⁶⁵ EITC also provides incentives for cohabitation. EITC is briefly described in Section 1.4.3.

An interesting approach is used by Ellwood (2000b) which allows fertility and earnings to vary after marriage (rather than assuming that they are unchanged). Ellwood (2000b:1089-1090) uses the Panel Study of Income Dynamics for 1983 to 1991 to observe the reported income of individuals before and after marriage. He calculates their income for the last year prior to marriage and for the first year afterwards, and then estimates whether they would have been 'winners or losers' had the provisions for the rapid expansion of EITC in 1996 applied before and after marriage. Thus, he captures any changes in labour market status or childbearing following marriage, and avoids any impact that the expanded 1996 EITC regime could have had on marriage decisions.

Ellwood (2000b) estimates that there would have been more marriages where the amount of the 1996 EITC (had it been in effect) would have been lower (16 per cent, with an average loss of \$1,500) than higher (11 per cent, with an average gain of \$1,400). The majority of marriages (72 per cent) would experience no change in EITC. The main reason for the higher proportion of 'losers' is that there was a relatively high proportion of marriages where before marriage both partners worked and had a child, and in most of these cases the estimated EITC was lower post-marriage. The estimate of the proportion of winners is likely to be an underestimate as many couples were likely to have children after the first year which could increase their EITC. However, his sample, which is of new marriages, may not be representative of the wider 'stock' of marriages.

As mentioned in Section 1.6.1, studies that estimate EITC net benefits are sensitive to the assumptions made, especially about labour market status and living arrangements. For instance, studies that 'divorce' married couples and assume that the children remain with the women are likely to find that fewer families face marriage penalties than those where it is assumed that, where there are two or more children, they will be divided between the 'separated' parents.

The studies considered here show that EITC generates both marriage bonuses and penalties, and in some cases they are relatively large. The estimates do not say if the bonuses and penalties actually influenced behaviour.

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