

1996-based population projections by legal marital status for England and Wales

Chris Shaw
Government Actuary's
Department

INTRODUCTION

Projections of the adult population of England & Wales by legal (*de jure*) marital status are now prepared by the Government Actuary's Department (GAD) every three or four years. This article presents results from new 1996-based projections which replace the previous (1992-based) set.¹ The new projections are based on the estimated population of England & Wales by marital status at mid-1996.² They cover the period 1996-2021 and are consistent with the 1996-based national projections by age and sex.³

The 1992-based projections were the first to cover both legal and *de facto* (i.e. allowing for cohabitation) marital status. The results of new 1996-based projections by *de facto* marital status are given in a separate article in this issue of Population Trends.⁴

Projections of the population by marital status are needed for a number of different purposes, both within government and outside. One key use of these projections is as one of the main inputs to the regular projections of the number and type of households in England and Wales.^{1,5} The projections are also used by the Department of Social Security, and by GAD itself, to cost various aspects of the future social security programme, for example retirement pension and widow's benefit.

PROJECTION METHODOLOGY

For the 1996-based projections of legal marital status, GAD have reverted to using a component methodology i.e. one based on assumptions of underlying marriage, remarriage and divorce rates. Historically, GAD's marital status projections were produced in this way but this approach was abandoned in the 1980s, as it was felt that

This article presents the key results of the Government Actuary's Department's latest population projections by legal marital status for England and Wales. The new projections are based on the estimated population of England and Wales by marital status at mid-1996 and cover 1996-2021.

the likely accuracy of such projections did not justify the considerable resources spent on them. Instead, subsequent projections used a simpler methodology based on direct extrapolation of trends in the proportion of the population at each age who were in each marital status.

Projections of marital status are inevitably very uncertain and there are no grounds for believing that complex models will necessarily produce significantly more accurate results than simple ones. Indeed, the decision to return to a component methodology has been prompted by other considerations. First, the component methodology allows for a clearer description and understanding of underlying assumptions, and an improved qualitative assessment and discussion of projection results. Second, the methodology provides additional information in which there is an interest such as the projected number of marriages and divorces, and statistics such as the proportion of the population ever marrying. Finally, the component methodology makes it relatively straightforward to carry out sensitivity analysis and produce variant projections.

As well as these considerations, the availability of multi-dimensional dynamic projection models means that the resources involved in setting up and running a component methodology are no longer the concern they were ten years ago. In particular, such models can explicitly deal with the consistency problems which arise in marital status projections (for example, that the number of men marrying should equal the number of women marrying) and were previously very difficult to solve. These new projections have been produced using the Dutch package LIPRO.^{6,7}

The model requires assumptions to be made for all of the possible transitions between marital statuses. In addition, assumptions have to be made about the marital status distribution for both deaths and net migration.

With LIPRO, it is convenient to specify these assumptions as a function of an initial set of rates. For these projections, an initial set of marriage, divorce and mortality rates by single year of age and sex has been derived from the 1995-96 components of change data used by ONS to update the population estimates by marital status. From examination of historical time-series, there did not seem to be anything untypical about the *levels* of the various series in 1995-96; however, the initial rates were smoothed to remove any obvious peculiarities in age distributions.

Assumptions about future marriage and divorce rates were based on trends in the relevant time-series during the period 1986-96. ONS have rebased estimates for 1991 onwards to take account of the results of the 1991 Census⁸ and, for the purposes of these projections, have provided GAD with revised marital status estimates for the period 1986-91 consistent with the estimates for later years.⁹ The general approach for the projections, unless there appeared to be good reasons to do otherwise, was to assume a continuation of current trends over the next ten years after which rates would be held constant. In fact, in order to satisfy the “two sex consistency” constraints of the marital status projection (see Box 1), these rates have to be further adjusted within the model and so remain only approximately constant.

Assuming no further change after ten years is consistent with the concept of “target years” for projection making. A target year marks the approximate end of the period during which it is considered possible to predict change in a demographic variable. After this point, assumptions are normally held constant. The period of time between the base year of the projection and the target year is therefore an indication of the relative uncertainty of that component. In comparison, in the national age and sex projections, assumptions for migration (by far the most difficult component to predict) are now held constant after two years,

while fertility assumptions are typically held constant after 10 to 15 years. Mortality, the most predictable of the components, is assumed to continue improving throughout the projections, although the rate of improvement is assumed to have fallen to low levels after 40 years.

INTERNATIONAL COMPARISONS

Before considering the prospects for marriage and divorce in England & Wales, it is worth setting our data in the context of that for other countries. Figure 1 compares some key marriage and divorce indicators for the UK and selected other European countries. Although crude marriage and divorce rates (CMRs and CDRs) are far from perfect measures, they allow broad conclusions to be drawn about trends through time and about differences between countries.

Figure 1 shows that both the CMR and CDR in the UK have consistently been above the European Union average. Indeed, our CDR has been much the highest in the EU during the 1990s. The graphs also shows the clear inverse relationship between marriage rates and age at first marriage. So Sweden has the lowest CMR in the European Union but, aside from Denmark, the highest mean age at marriage, while Portugal has the highest CMR and lowest mean age at marriage. Mean age at marriage is continuing to rise, and the CMR to fall, throughout the EU.

LEGISLATION CHANGES

Since April 1995, it has been possible for marriages in England & Wales to take place at ‘approved premises’ additional to register offices, churches and chapels.¹⁰ It is considered unlikely that this will have any noticeable effect on the total number of marriages taking place.

Looking further ahead, the Family Law Act (1996) although enacted is not expected to be implemented until 2000. Under the provisions of this Act, irrevocable breakdown of marriage will remain the sole ground for divorce, but this will no longer need to be established by proving the facts of adultery, unreasonable behaviour, desertion or separation. Instead, a potential applicant for divorce will have to attend an “information meeting” (at which they will hear about marriage counselling, other marriage support services and other considerations and repercussions of divorce), three months after which they may make a “statement of marital breakdown.” Then, after a period for reflection and consideration, if the applicant decides that the marriage has irretrievably broken down and provided arrangements for children and finance have been settled, they can apply for a divorce order. At this stage, it is premature to speculate on the effect, if any, this new legislation may have on the long-term level of divorces. However, there could well be short-term timing changes, such as a bringing forward of cases under existing legislation, followed by a temporary drop in numbers once the new legislation is implemented.¹¹ But no allowance has been made for this in these projections.

PROJECTION ASSUMPTIONS

Initially, exponential curves were fitted to the 1986-96 time-series of rates for five-year age groups shown in Figure 2 and extrapolated forward to 2006. Then, the projected changes from this first stage were gradually reduced (by 10% in year 1, 20% in year 2 etc.) so that the projected series eventually levelled off and remained constant from 2006. In some cases, modifications were made to this standard approach and these are noted below. As described in Box 1, these “input rates” were adjusted further within the model in order to satisfy the standard two-sex consistency requirements. However, in most cases these adjustments were very small; Figure 2 shows the rates prior to this final modification.

FIRST MARRIAGE

For both males and females, marriage rates are continuing to fall at ages under 35 with rates above this age roughly constant. The decline in rates has been particularly rapid at the youngest ages. Therefore, applying the standard approach described above produces continuing large falls in first marriage rates at these ages. It was felt that these led to implausibly low levels after a further ten years, and so the assumptions were modified to produce only half of this decline at ages under 20 and three quarters of the decline at ages 20 to 29.

The first marriage rate assumptions were also adjusted upwards between ages 30 and 59. The rationale for this is while a substantial part of the rapid decline in first marriage at younger ages may be due to people rejecting marriage in favour of cohabitation, or choosing to live alone rather than forming any kind of partnership, it is also likely to partly reflect marriages being deferred to later in life.

Although this is a plausible hypothesis, the precise adjustment to be made is necessarily arbitrary. In fact, it has been assumed that deferred marriage will raise ultimate first marriage rates at ages 30 to 59 by between 10 and 25 per cent. It has been assumed that this 'catching up' process will not be completed until 2011, so in this one instance rates do not level off from 2006. The effect of this adjustment is to raise the projected total number of married men and women in 2021 by around 150 thousand each (about 1.5 per cent). Overall, these assumptions imply a further small fall in the proportion of people who ever marry (see Table 2).

Remarriage

The rate of decline in remarriage rates for the divorced has slowed noticeably in the 1990s and is now small for males and almost negligible for females. Therefore, the assumptions for this series were based on extrapolating forward the 1991-96 rather than 1986-96 time-series. Otherwise the standard approach was used.

Remarriages involving a divorced person are around ten times as numerous as those involving a widowed person (see Table 9.2 at the rear of this issue.) So assumed remarriage rates for the widowed are of much less significance for the projections. The recent trend in remarriage rates is similar to that for the divorced. The standard extrapolation approach has been used for this group.

Divorce

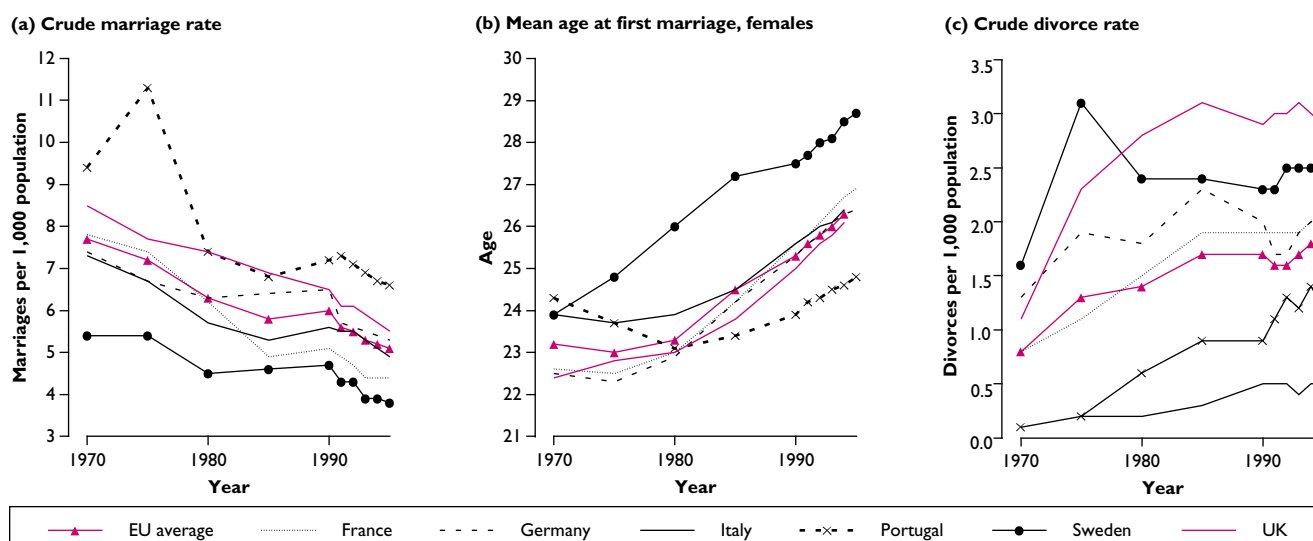
Compared with 1986, divorce rates are now much higher at almost all ages. However, following a larger than usual increase between 1992 and 1993, rates have been more stable (with even small reductions at some ages) since. There has been no new legislation or procedural changes that would account for this very recent trend.

It was felt to be premature to assume that the more stable figures of the last three years indicate an end to the long-term increase in divorce rates. However, as shown in Figure 1, the UK already experiences the highest divorce rates in the European Union, so there is perhaps little scope for a return to the level of growth in divorce rates seen prior to 1993. Therefore, it was decided that the projections should assume only a modest further increase in divorce rates. This was done by taking the average of two different sets of assumptions: one using the standard approach extrapolating the upward 1986-96 trend and the other assuming that 1993-96 rates would remain constant. This produces the rates shown in Figure 2c, which again eventually level off from 2006.

Mortality

Mortality rates in England & Wales, as in other countries, are consistently lower for married people than for never-married (i.e. single) or previously married individuals.¹² This is usually attributed to a combination of *protective* and *selective* effects.¹³ For example, marriage may protect individuals by providing them with healthier lifestyles, but it may also be the case that healthy people are more likely to marry or remarry than those with health problems.

Figure 1 Comparison of key marriage and divorce indicators for selected EU countries, 1970-95



Source: Demographic Statistics 1997 (Eurostat)

Mortality differentials by marital status have changed little in England & Wales in recent years, with all non-married statuses continuing to experience higher mortality than the married population. There has, however, been some increase in differentials for the young never-married, especially males, which may be attributable to increased incidence of AIDS and suicides. It has been assumed that current mortality differentials by marital status will remain constant throughout the projection. The assumptions are also subject to the overall constraint that all status mortality levels must be consistent with the 1996-based national projections.

Net migration

For net migration, an assumed marital status distribution has been derived from the distributions used by ONS in the preparation of their mid-year estimates. However, as noted in Box 1, the distribution has been adjusted so that the number of married males entering the country equals the number of married females. The distribution is assumed to remain constant throughout the projection.

The assumptions have also been controlled to agree with the age and sex totals from the national projections. Those projections assume net inward migration to England & Wales of 103,000 persons in 1996-97, 87,500 persons in 1997-98 and 71,500 persons each year thereafter.³ Migration is highly concentrated at young ages and so over 70 per cent of net inward migration is assumed to be of never-married persons, with most of the remainder assumed to be married.

PROJECTION RESULTS

Population

The 1996-based projections of legal marital status for England & Wales, based on the assumptions shown in Figure 2, are summarised in Table 1 and Figure 3. It shows that while the total adult population is projected to rise by 10 per cent over the next twenty-five years, the total number of never-married and divorced people would both increase by around 50 per cent. Conversely, the married population would fall by about 10 per cent. Assumed improvements in male mortality would lead to the projected number of widows falling by about one sixth during this period.

The recent rapid fall in first marriage rates at young ages leads to large falls in the married population in all but the oldest age groups. At ages 45 to 54, for example, the proportion of people who are married is projected to fall from just over three quarters in 1996 to only around 55 per cent in 2021. Overall, the proportion of the adult population which is married is projected to fall from 55 per cent in 1996 to under 50 per cent by 2005. Married people have never, since official estimates were first made in 1851, previously been a minority of the adult population.

There would be corresponding increases in the proportion of the population who have never married. In fact, this largely reflects changes that have already occurred in first marriage rates. People who are now aged 45 to 54 experienced the high first marriage rates of the 1960s or 1970s when they were in their twenties, whereas those who will be aged 45 to 54 in twenty five years time are experiencing the much lower first marriage rates of today. So, while 83 per cent of men born in 1946 had married by age 30, less than 50 per cent of men born in 1966 and 1967 had married by the same age.²

Similarly, the big increase in the divorced population at older ages is largely an ageing effect as those currently at younger ages who have

been exposed to recent high divorce rates replace those currently at older ages. While only 10 per cent of the 1936 birth cohort had experienced a divorce by age 40, some 22 per cent of men and nearly 25 per cent of women born in the mid 1950s had been divorced by the same age.² At ages under 55, the proportion of divorced people is projected to remain relatively stable as the assumed higher divorce rates apply to a declining married population.

Marriages and divorces

The projected numbers of marriage and divorces are shown in Figure 4. This shows that under these assumptions, the annual number of marriages would fall slightly to 274 thousand in 2001, before rising again to 300 thousand a year by around 2015. Conversely, the number of divorces is projected to fall gradually from just over 150 thousand per year at present to around 110 thousand in 2021.

At first sight, it may seem a little surprising that marriages should rise and divorces fall at a time when the married population is in decline. But, of course, divorce is not the only way marriages end. Indeed, the majority of marriages still end through the death of one or other partner. In total, marriages ending (whether through divorce or death) have exceeded the number of new marriages each year since 1973, and hence the married population has declined continuously during this period. However, the projected trends in marriage and divorce mean that the rate of decline will slow down. The number of married men and women have each been falling by over 80 thousand per year in the 1990s but it is projected that the annual decline between 2011 and 2021 will be only 20 thousand per year.

Arithmetically, the reasons for the projected trends in marriage and divorce lie in the projected change in the age structure of the married and never-married populations caused largely by the continuing fall in the first marriage rates at young ages. Mainly, as a result of this, the number of never married people aged between 35 and 44, for example, is projected to increase by around 50 per cent between 2001 and 2011 (see Table 1). As the projections also assume a slight increase in first marriage rates between 35 and 59, the projected number of marriages at these ages increases considerably. However, the number of marriages for people in their twenties is also projected to rise during this period, despite the fact that a further fall in marriage rates at younger ages is assumed. This occurs because the total population aged 20 to 29 is projected to rise considerably after 2003 as the small birth cohorts of the mid 1970s gradually move out of this age group.

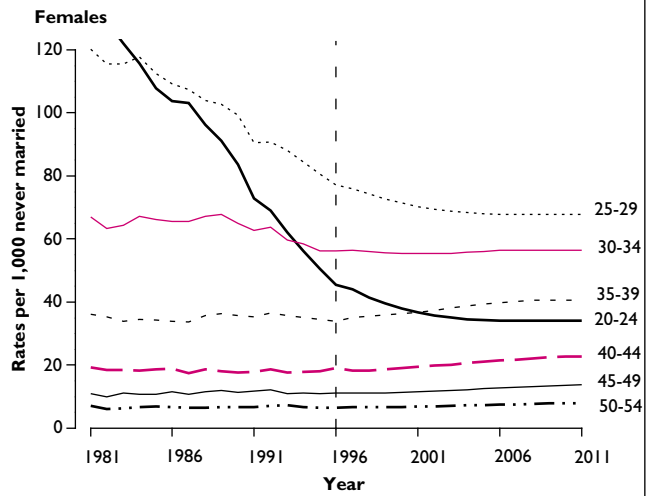
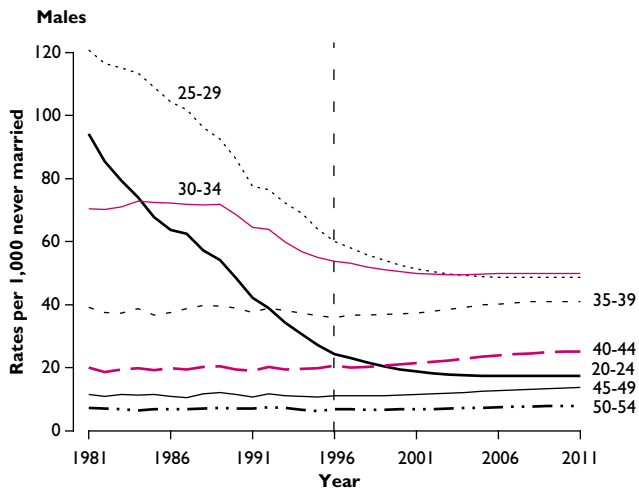
Similarly, the recent changes in first marriage rates at young ages are the main factor leading to, for example, a projected fall of over 40 per cent over the next twenty years in the size of the married population at ages 30 to 39. This age group currently accounts for four in ten of all divorces in England and Wales. As the projections assume only relatively modest further increases in divorce rates, the number of divorces is therefore projected to fall. Of course, continuing changes in the age at which people marry could, in time, alter the age pattern of divorce rates - but this can only be speculative at this point and no allowance has been made in the assumptions shown in Figure 2.

Life table statistics

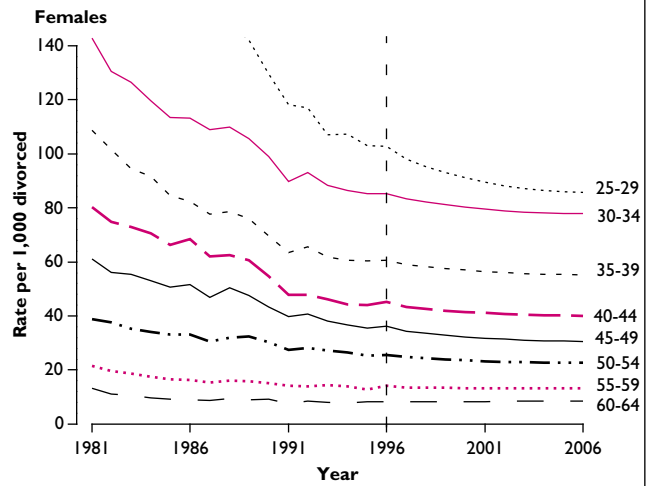
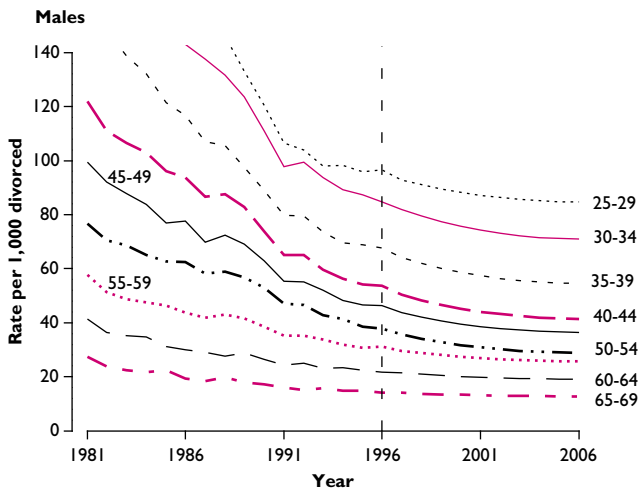
Further interesting information on the projections can be obtained from the LIPRO facility to produce multi-state life tables. In Table 2, selected life table statistics are shown for three 'synthetic' birth cohorts. The table shows the values of these key indicators for hypothetical cohorts experiencing the various marital status transition probabilities of the year in question. The statistics have been calculated based on the

Figure 2 Assumptions for the 1996-based legal marital status projections for England and Wales

(a) Actual and assumed first marriage rates



(b) Actual and assumed remarriage rates for the divorced



(c) Actual and assumed divorce rate

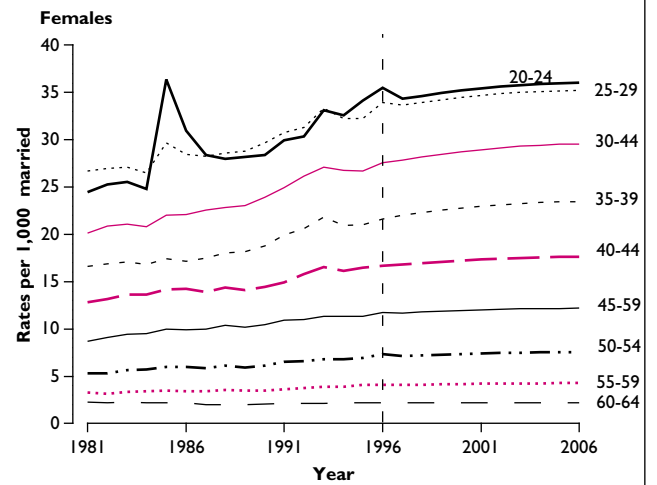
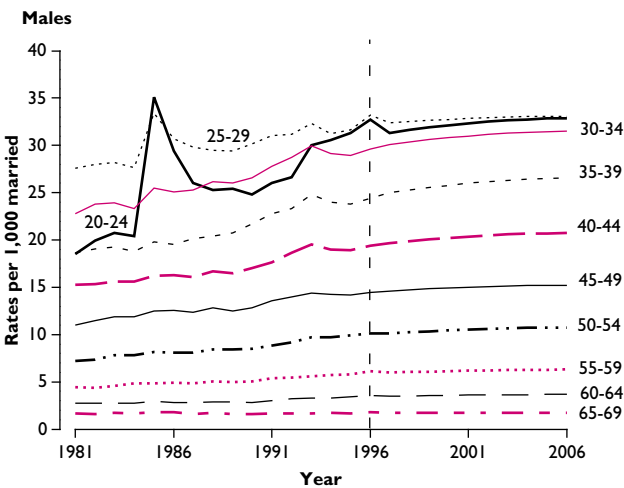


Table 1

Projected population by age, sex and legal marital status, England and Wales, 1996-2021

thousands

		Numbers (000s)					Percentages				
		Total	Never married	Married	Widowed	Divorced	Total	Never married	Married	Widowed	Divorced
Males											
All 16+	1996	20,091	6,482	11,339	728	1,543	100%	32%	56%	4%	8%
	2001	20,597	7,130	10,927	716	1,824	100%	35%	53%	3%	9%
	2011	21,759	8,465	10,407	709	2,178	100%	39%	48%	3%	10%
	2021	22,543	9,283	10,211	731	2,318	100%	41%	45%	3%	10%
16-24	1996	2,960	2,848	107	0	5	100%	96%	4%	0%	0%
	2001	2,955	2,882	70	0	3	100%	98%	2%	0%	0%
	2011	3,224	3,146	75	0	3	100%	98%	2%	0%	0%
	2021	2,991	2,917	71	0	3	100%	98%	2%	0%	0%
25-34	1996	4,265	2,223	1,794	3	244	100%	52%	42%	0%	6%
	2001	3,826	2,353	1,295	2	176	100%	62%	34%	0%	5%
	2011	3,396	2,384	908	1	103	100%	70%	27%	0%	3%
	2021	3,652	2,547	990	1	114	100%	70%	27%	0%	3%
35-44	1996	3,602	657	2,449	13	483	100%	18%	68%	0%	13%
	2001	4,123	1,051	2,490	14	568	100%	25%	60%	0%	14%
	2011	3,852	1,503	1,907	9	432	100%	39%	49%	0%	11%
	2021	3,430	1,516	1,579	7	327	100%	44%	46%	0%	10%
45-54	1996	3,378	323	2,573	35	448	100%	10%	76%	1%	13%
	2001	3,487	394	2,496	36	560	100%	11%	72%	1%	16%
	2011	4,065	830	2,477	34	724	100%	20%	61%	1%	18%
	2021	3,804	1,195	2,019	26	564	100%	31%	53%	1%	15%
55-64	1996	2,512	189	2,015	83	225	100%	8%	80%	3%	9%
	2001	2,734	211	2,113	81	328	100%	8%	77%	3%	12%
	2011	3,290	337	2,314	86	552	100%	10%	70%	3%	17%
	2021	3,869	716	2,391	78	684	100%	19%	62%	2%	18%
65-74	1996	2,059	158	1,579	218	104	100%	8%	77%	11%	5%
	2001	2,034	145	1,561	187	140	100%	7%	77%	9%	7%
	2011	2,317	161	1,712	178	266	100%	7%	74%	8%	11%
	2021	2,827	266	1,938	191	432	100%	9%	69%	7%	15%
75+	1996	1,315	84	821	376	34	100%	6%	62%	29%	3%
	2001	1,439	94	901	396	49	100%	7%	63%	27%	3%
	2011	1,615	104	1,014	400	97	100%	6%	63%	25%	6%
	2021	1,971	127	1,222	428	194	100%	6%	62%	22%	10%
Females											
All 16+	1996	21,265	5,171	11,406	2,870	1,819	100%	24%	54%	13%	9%
	2001	21,568	5,750	10,987	2,718	2,113	100%	27%	51%	13%	10%
	2011	22,413	6,966	10,466	2,455	2,527	100%	31%	47%	11%	11%
	2021	23,106	7,697	10,267	2,380	2,762	100%	33%	44%	10%	12%
16-24	1996	2,805	2,539	250	0	15	100%	91%	9%	0%	1%
	2001	2,830	2,645	176	0	9	100%	93%	6%	0%	0%
	2011	3,102	2,910	182	0	9	100%	94%	6%	0%	0%
	2021	2,874	2,693	172	0	9	100%	94%	6%	0%	0%
25-34	1996	4,077	1,537	2,203	7	330	100%	38%	54%	0%	8%
	2001	3,658	1,741	1,650	5	262	100%	48%	45%	0%	7%
	2011	3,311	1,952	1,189	3	168	100%	59%	36%	0%	5%
	2021	3,571	2,101	1,288	2	180	100%	59%	36%	0%	5%
35-44	1996	3,544	414	2,575	28	527	100%	12%	73%	1%	15%
	2001	3,979	684	2,652	27	617	100%	17%	67%	1%	16%
	2011	3,683	1,087	2,068	18	509	100%	30%	56%	1%	14%
	2021	3,340	1,218	1,723	12	386	100%	36%	52%	0%	12%
45-54	1996	3,380	183	2,603	107	488	100%	5%	77%	3%	14%
	2001	3,482	238	2,553	98	593	100%	7%	73%	3%	17%
	2011	3,933	554	2,547	81	751	100%	14%	65%	2%	19%
	2021	3,640	883	2,087	60	611	100%	24%	57%	2%	17%
55-64	1996	2,574	128	1,870	318	258	100%	5%	73%	12%	10%
	2001	2,801	130	2,017	288	367	100%	5%	72%	10%	13%
	2011	3,347	212	2,263	273	599	100%	6%	68%	8%	18%
	2021	3,799	492	2,337	234	736	100%	13%	62%	6%	19%
65-74	1996	2,430	154	1,323	815	138	100%	6%	54%	34%	6%
	2001	2,301	125	1,302	696	179	100%	5%	57%	30%	8%
	2011	2,534	112	1,483	602	337	100%	4%	59%	24%	13%
	2021	3,050	186	1,713	610	541	100%	6%	56%	20%	18%
75+	1996	2,454	216	581	1,594	63	100%	9%	24%	65%	3%
	2001	2,517	188	638	1,604	87	100%	7%	25%	64%	3%
	2011	2,503	138	734	1,478	153	100%	5%	29%	59%	6%
	2021	2,832	124	947	1,461	299	100%	4%	33%	52%	11%

latest available actual rates (derived from the components of change data for 1995-96 described above), and also based on the assumed rates for the year 2011-12, after which the various assumptions are held constant. These are also compared with figures from an earlier cross-national study¹⁴ using England & Wales data for the years 1980-82.

The table shows some dramatic effects arising from the declining marriage rates of the last fifteen years. The first marriage rates of the early 1980s were consistent with five out of six men eventually marrying but, with the rates of the mid 1990s, only four out of six would marry. Proportions of women marrying are higher, but a similar fall has occurred. Further, the mean age at first marriage has risen by about 4.5 years for both sexes during this period. Partly because of the allowance made for marriage rates to rise at older ages because of deferred marriage, the projections envisage only a slight further fall in the proportion of people ever marrying, although the assumed further decline in the proportion remarrying after divorce is more marked.

LIPRO does not directly give the proportion of all marriages which end in divorce. However, dividing the proportion ever divorcing by the proportion ever marrying gives a very close approximation to the proportion of *first* marriages which would end in divorce. This shows that the projection assumptions are consistent with the proportion of first marriages ending in divorce remaining at around 40 per cent.

VARIANT PROJECTIONS

Population projections are, of course, subject to uncertainty, and this uncertainty grows the further forward they are carried. The rapid changes that have occurred in the recent past in family formation and dissolution emphasise the difficulty of making accurate projections about relationship patterns more than a few years into the future. The projections described above broadly assume some continuation of recent trends over the next ten to fifteen years, with marriage, remarriage and divorce rates thereafter assumed to remain constant.

To give an indication of the underlying uncertainty, variant projections have been carried out based on alternative assumptions about the future levels of marriage and divorce. Like the principal projections described above, these have been controlled to be consistent with the 1996-based national projections by age and sex i.e. they make the same assumptions about future fertility, mortality and net migration. Variant

national projections based on alternative assumptions regarding these three components are described elsewhere.¹⁵

Table 3 gives key summary statistics from these variant projections. The high and low marriage variants assume that marriage rates will gradually diverge from those assumed in the principal projection, so that from 2011 onwards first marriage rates, at all ages, differ by ± 15 per cent and remarriage rates by ± 10 per cent. The greater margin of uncertainty assumed for first marriage reflects, at younger ages, the continuing rapid decline in marriage rates and, at older ages, the uncertainty concerning how much of this decline will be offset by people marrying later in life. Similarly, the high and low divorce variants assume that divorce rates will gradually diverge from those assumed in the principal projection, so that from 2011 onwards they differ by ± 10 per cent at all ages.

The main purpose of these variants is to give an indication of the sensitivity of the projections to changes in each of the underlying assumptions and *not* to represent upper or lower limits for the future.

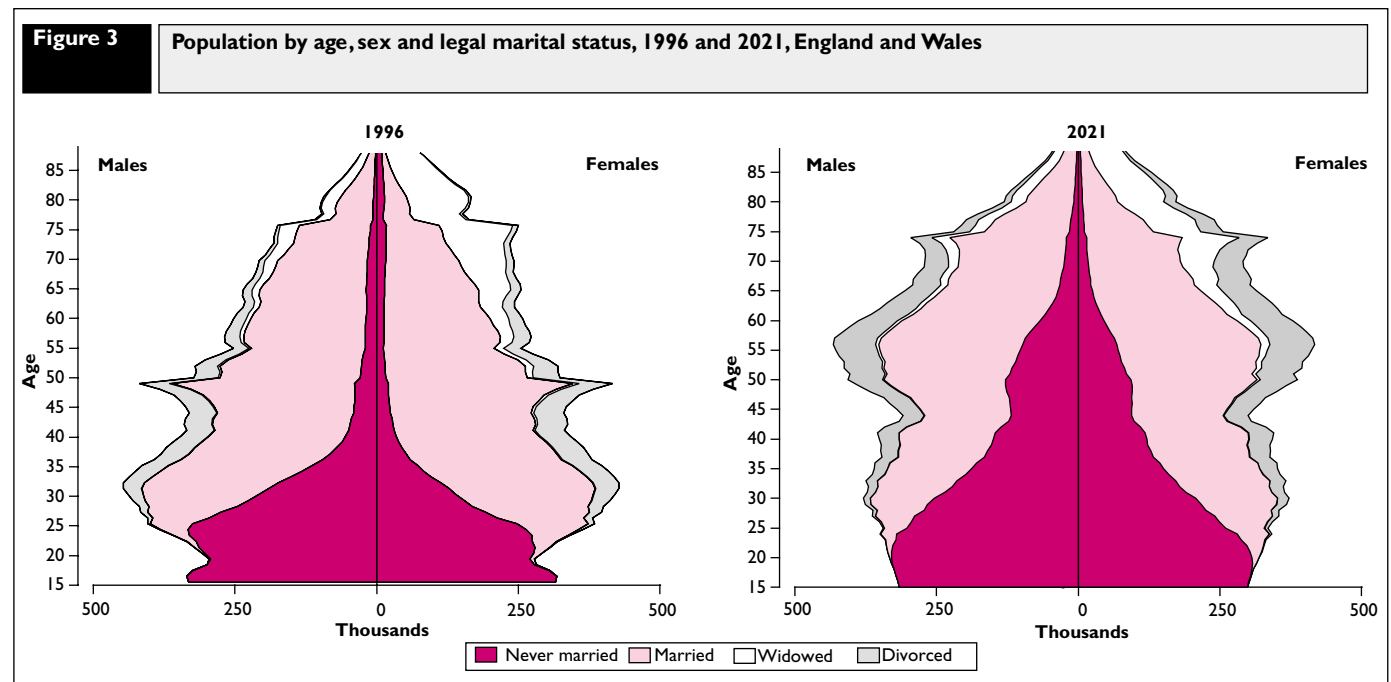
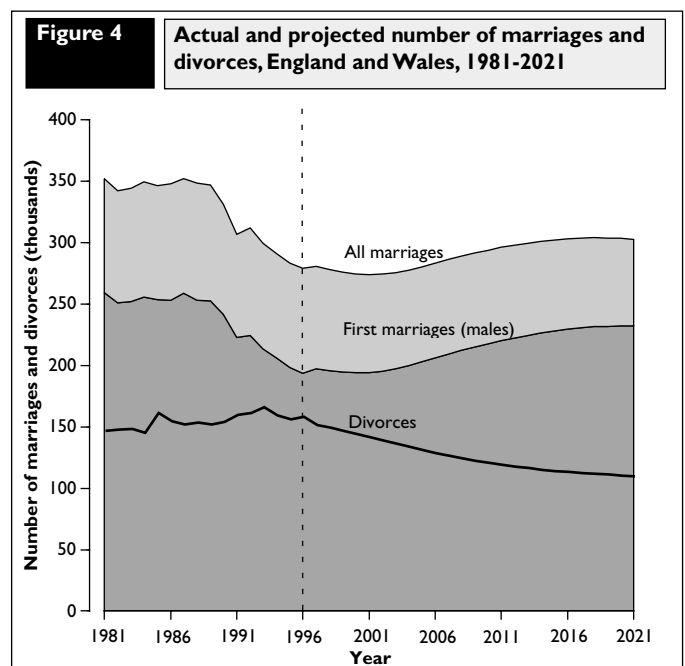


Table 2 Summary statistics from legal marital status life tables, England and Wales

	Males			Females		
	1980-82	1995-96	2011-12	1980-82	1995-96	2011-12
Mean age at first marriage (years)	26.6	31.2	32.6	24.4	28.9	30.3
% ever marrying	84%	67%	66%	89%	73%	71%
% ever remarrying						
of divorced	83%	62%	56%	74%	57%	51%
of widowed	15%	8%	6%	5%	3%	2%
% ever divorcing	n/a	26%	25%	n/a	28%	27%
% of first marriages ended by divorce*	n/a	39%	38%	n/a	38%	38%

* Obtained by dividing the proportion ever divorced by the proportion ever married. This is actually a very slight overestimate of the proportion of first marriages ending in divorce as it is possible to become 'ever divorced' by a remarriage ending in divorce, following a first marriage which ended in widowhood.

Table 3 Comparison of marriage and divorce variants, England & Wales, 1996-2021

	Total population (000s)					Events (000s)	
	All adults	Never married	Married	Widowed	Divorced	Marriages	Divorces
1996	41,356	11,653	22,744	3,597	3,361	279	157
Principal							
2001	42,165	12,880	21,914	3,434	3,937	274	141
2011	44,172	15,431	20,873	3,164	4,704	296	118
2021	45,649	16,980	20,477	3,112	5,080	303	109
High marriage							
2001	42,165	12,856	21,943	3,433	3,932	282	141
2011	44,172	15,098	21,248	3,160	4,666	327	123
2021	45,649	16,209	21,284	3,110	5,047	330	117
Low marriage							
2001	42,165	12,904	21,885	3,434	3,942	265	140
2011	44,172	15,777	20,484	3,168	4,743	263	113
2021	45,649	17,817	19,613	3,113	5,106	272	100
High divorce							
2001	42,165	12,880	21,903	3,434	3,949	274	144
2011	44,172	15,431	20,750	3,163	4,828	298	128
2021	45,649	16,981	20,243	3,105	5,321	307	118
Low divorce							
2001	42,165	12,880	21,925	3,434	3,926	273	137
2011	44,172	15,430	20,997	3,166	4,579	293	108
2021	45,649	16,979	20,717	3,118	4,835	298	100

Selected life table statistics (based on rates for given year)

	Mean age at first marriage (years)		% ever marrying		% of first marriages ending in divorce*	
	Males	Females	Males	Females	Males	Females
1995-96	31.2	28.9	67%	73%	39%	38%
2011-12 onwards						
Principal	32.6	30.3	66%	71%	38%	38%
High marriage	32.2	29.9	71%	76%	39%	39%
Low marriage	33.0	30.7	60%	65%	38%	37%
High divorce	32.6	30.3	66%	71%	41%	41%
Low divorce	32.6	30.3	66%	71%	35%	35%

* See footnote to Table 2.

Marriage and divorce have been considered independently although, in reality, changes in one component might well be associated with changes in the other. For example, if the popularity of marriage increased, then one might expect to see higher marriage rates *and* lower divorce rates. Also, such changes are unlikely to be uniform across all ages. For example, the extent to which attitudes to cohabitation change, whether it is seen as a prelude or an alternative to marriage, could have a marked effect on marriage rates at older ages, but little at younger ages.

Table 3 shows that the marriage variants are consistent with long-term proportions ever marrying which are around five percentage points higher or lower than assumed in the principal projection. These alternative assumptions would lead to the married population being over 800 thousand (4 per cent) different from the principal projection by 2021, almost entirely balanced by changes in the size of the never married population. The net effect on the size of the divorced

population is small. For example, in the high marriage variant, the married population is larger and therefore there are more divorces. But this is offset by the higher remarriage assumption.

The divorce variants are consistent with long-term proportions of first marriages ending in divorce which are about three percentage points higher or lower than assumed in the principal projection. They would lead to the divorced population being around 250 thousand (5 per cent) different from the principal projection by 2021, balanced by changes in the size of the married population.

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Box one

CONSISTENCY CONSTRAINTS OF THE PROJECTION MODEL

Typically, a marital status projection will be subject to a number of external and internal constraints. Within these constraints, the projections will be determined by assumptions of future (a) marriage and remarriage rates, (b) divorce rates, (c) mortality differentials by marital status and (d) net migration by marital status.

External constraints

The marital status projections were constrained to agree with the 1996-based national (age and sex) projections for England & Wales. There were three separate constraints:

- (i) the number of people entering the “population at risk” each year is the projected population aged 15 last birthday from the national projection, all of whom are assumed to be initially single (i.e. never-married);
- (ii) the total number of deaths each year is constrained to agree, at each age and sex, with the national projection; and
- (iii) the total number of net migrants each year is constrained to agree, at each age and sex, with the national projection.

Satisfying all these constraints, means that the total projected population for each future year, at each age and sex, is consistent with the national projections.

Internal constraints

The “input rates” for marriage and divorce described in the main text were subject to further adjustment in order to satisfy the following standard two sex consistency requirements:

- (a) the number of males marrying must equal the number of females marrying:

- (b) the number of males divorcing must equal the number of females divorcing:

- (c) the number of married males dying must equal the number of females becoming widowed; and

- (d) the number of married females dying must equal the number of males becoming widowed.

Note, however, that as one partner in a marriage may be temporarily resident abroad, the number of married men and women are never exactly equal in population estimates and have not been constrained to be equal in these projections. Similarly, in reality, net migration of married men and women is never exactly equal.

However, to avoid the risk of small annual differences accumulating into a significant long-term bias, it is sensible to assume that annual differences will cancel out and impose the further consistency condition:

- (e) net migration of married males is assumed to equal net migration of married females.

These five consistency conditions are handled in different ways within the model. The marriage and divorce consistency requirements (a and b) are met by taking the mean of the initially projected, and unequal, male and female events. This is justified on “market-mechanism” or bargaining grounds. If more women are willing to marry than men, say, then the actual number marrying will be a compromise between the two. These are termed *active* constraints.

The widowhood consistency requirements (c and d) are *passive* constraints. These are “mortality dominant” constraints where the number of people entering widowhood is set equal to the calculated number of married deaths and no further adjustment is required.

Finally, the net migration consistency requirement (e) is dealt with by simply specifying an assumed net migration distribution by marital status (see main text).

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Key findings

- Between 1996 and 2021, the total adult population is projected to rise by 10 per cent, but the total number of single and divorced people will both increase by around 50 per cent. Conversely, the married population will fall by about 10 per cent. As a result, married people will become a minority of the adult population within the next 10 years.
- The projections assume some continuation of the long-term decline in marriage rates for young people, and a modest further increase in divorce rates.
- The projected changes in the marital status distribution of the population are largely a consequence of rapid changes in marriage and divorce patterns which have already taken place.