

Premarital cohabitation and marital stability

Ruth Weston, Lixia Qu and David de Vaus
Australian Institute of Family Studies

Paper presented at the HILDA Conference
University of Melbourne, Melbourne, Australia
13 March 2003

Abstract

Despite the opportunities that cohabitation should provide for screening out unsuitable matches, a large body of research suggests those who cohabit before they marry have a higher risk of divorce than those who marry without first cohabiting. This paper asks the following questions: (a) Has the relationship between pathway to marriage and marital stability diminished for more recent birth cohorts? (b) Is any difference in stability between direct and indirect marriages due to the period in which stability is measured (i.e., since marriage rather than since the start of the living-together union)? (c) To what extent is any difference in stability due to systematic differences in the characteristics of those who choose the alternative pathways to marriage or cohabitation's failure to "screen out" unsuitable matches?

Introduction

Family life has changed in many ways since the early 1970s. Amongst those causing the greatest disquiet have been the increase in the divorce rate (from 4.1 per thousand married women in 1970 to 12.0 in 2000) and associated increase in sole parent families with dependent children from 6.5 to 10.7 between 1976 to 2001 (Australian Bureau of Statistics (ABS) 2001, 2002a). But significant changes have also occurred in the start of couple relationships, with marriage rates falling, cohabitation rates (i.e., de facto relationships) increasing (see de Vaus & Qu forthcoming), and with cohabitation now being the normative pathway to marriage. Of all marriages that occurred in 2001, 72 per cent were preceded by cohabitation, up from 16 per cent in 1975 (ABS 1995, 2002b).

On face value, it might be expected that a period of cohabitation would give couples unique insight into their compatibility, thereby helping them to make informed decisions about whether or not to marry. However, most of the research into this issue in Australia and other western countries suggests quite the opposite trend: marriages preceded by cohabitation (here called “indirect marriages”) tend to have a shorter life than direct marriages (see Australia, Parliament 1998; Lillard, Brien & Waite 1995; Smock 2000). This paradox has sparked a great deal of research and discussion in the literature.

Three key explanations, which are not mutually exclusive, have been suggested (see Brown & Booth 1996; Brüderl, Diekmann & Engelhardt 1999; DeMaris & Rao 1992; Glezer, Edgar & Prolisko 1992; Lillard, *et al.* 1995). The most common of these concerns self-selection into the alternative pathways to marriage. According to this explanation, personal characteristics that influence choice of marriage pathway also influence risks of marital separation. In support of this explanation, a large number of studies in the 1990s suggested that those who cohabit before marriage have more unconventional backgrounds, attitudes and values than those who marry directly – characteristics that lead the former group to be more “divorce-prone” (e.g. Lillard *et al.* 1995; DeMaris & Rao 1992; Glezer *et al.* 1992).

Nevertheless, times have changed. Premarital cohabitation is now normative and thus no longer the preserve of the more unconventional adults in society. Several authors have thus argued that the self-selection should have weakened for more recent cohorts, although research into this proposition has yielded inconsistent results (see Brüderl *et al.* 1999; De Maris & Rao 1992; Schoen 1992). On the other hand, as direct marriages have become the exception, those who choose this pathway may have become increasingly homogeneous in ways that enhance marital stability – a point noted by Brüderl *et al.* (1999). For instance, in a broad social context in which both indirect marriage and divorce are sanctioned (de Vaus 1997), those who tend to resist indirect marriage may also resist divorce as a solution to marital unhappiness. Alternatively, partners in these marriages may share characteristics that increase their chances of enjoying a happy marriage.

A second explanation for the enhanced risk of instability of indirect marriages suggests that cohabitation and marital instability are causally linked. According to this explanation, the *experience* of cohabitation may change attitudes or behaviour in ways that are detrimental to marital stability. While there is some evidence that cohabitation may increase acceptance of divorce (Axinn & Thornton 1992), there appears to be general agreement in the research literature that selectivity is considerably more influential than causal processes in explaining the greater instability of indirect than direct marriages.

A third explanation for the relationship between marriage pathway and marital stability concerns the measure used to assess duration of the relationship. A great deal of research suggests that marital satisfaction declines in the early years of marriage (see Clements, Cordova, Markman & Laurenceau 1997; Karney & Bradbury 1995; Parker 2002), yet many of the accumulating experiences that lower relationship satisfaction probably arise after partners begin living together. While the experience of cohabitation and marriage may differ in a number of ways, both circumstances would provide opportunities for increasing insight into each other's everyday foibles, some of which may not be particularly endearing. Thus, the way that stability is typically measured – from the start of the marriage rather than the start of the living-together union – may exaggerate any real difference in the stability of *relationships* involving direct or indirect marriage (“statistical artefact” explanation). Overseas studies that have attempted to examine this issue have produced mixed results (Teachman & Polonko 1990; DeMaris & Rao 1992; Berrington & Diamond 1999).

The present paper investigates the strength of the relationship between pathway to marriage and marital stability. In particular, it addresses the following questions:

- Are indirect marriages less stable than direct marriages, and if so, has the greater instability of indirect than direct marriages diminished for more recent birth cohorts?
- Is the difference in stability between direct and indirect marriages due to the period in which stability is measured (i.e., since marriage rather than since the start of the living-together union)?
- To what extent is the difference in stability due to systematic differences in characteristics of those who choose the alternative pathways to marriage?

Unless otherwise specified, the analysis is based on data for the combined sample of 5672 respondents who had ever married, with 3382 having married directly and 2290 having cohabited before marriage. The sample was derived from three national random surveys: the 2001 (wave 1) Household, Income and Labour Dynamics in Australia (HILDA) survey, the 1996 Australian Life Course Survey (ALCS); and the 1997 (wave1) Negotiating the Life Course Survey (NLCS).¹ All sets of analysis focus on respondents' first or only marriages.

¹ HILDA is funded by the Commonwealth Department of Family and Community Services and managed by the Melbourne Institute of Applied Economic and Social Research; the

Marriage survival rates

Are indirect marriages less stable than direct marriages?

The first set of analysis focuses on the length of marriage to final separation. In order to compare the stability of direct and indirect marriages, this analysis estimated “marriage survival rates” from the start of the marriage (where survival is 100%) onwards, using the Life Table method. The marriage survival rates were first assessed for the sample as a whole, and then for the following marriage cohorts: those who married in 1970–74, 1975–79, 1980–84, 1985–89, and 1990–94.

Marriage survival rates for the total sample

Consistent with previous research, direct marriages were significantly more likely to survive than indirect marriages (Table 1). For example, ten years after marriage, the survival rates for the total sample were 84 per cent and 71 per cent respectively (a gap of 13%); and by 20 years, the rates were 68 per cent and 51 per cent respectively (a gap of 17%).

Insert Table 1 here

Marriage survival rates by marriage cohort

For each cohort, the marriage survival rates for indirect marriages remained significantly lower than those for direct marriages, although as predicted, the survival gap between direct and indirect marriages was mostly lower for those who married in more recent times than for those who married in the 1970s. Table 1 shows that this pattern began to emerge some 10 years after marriage. By this stage, the marriage survival gaps were 14 per cent for the two 1970s marriage cohorts and 11 per cent for the 1980s cohorts. By 15 years after marriage, survival gaps were 18 per cent for the 1970s cohorts, and 11 per cent for the 1980-84 cohort.

Union survival rates

Can the survival gap be explained by the nature of the survival period measured – time since marriage rather than time since union formation?

As noted above, many of the accumulating negative experiences that lead couples to end their marriages may emerge after couples begin living together, whether as married couples or cohabitators. Relationship satisfaction may typically begin to erode in the early stages of the living-together union, as couples gain insight into their compatibility to each other and into each

partner's ability to handle sharing everyday life with a partner. It thus makes sense to examine relationship survival across time from the start of the (living together) union.

Union survival rates for the total sample

Even when duration is measured from the start of the union, indirect marriages have lower survival rates than direct marriages, although the survival gap is narrower when duration is measured from union formation rather than from marriage (Table 2). For example, 10 years after union formation, survival rates were 84 per cent for direct marriages and 75 per cent for indirect marriages, and by 20 years, the survival rates were 68 per cent and 55 per cent respectively.

Insert Table 2 here

Union survival rates by marriage cohort

As in the case of marriage survival gaps, union survival gaps were narrower for those who married in the 1980s than for those who married in the 1970s. Furthermore, Table 2 shows that the gap was smaller when the survival rates were measured from the start of the union rather than the start of the marriage. For instance, 10 years after *union formation*, the survival gap was 6 to 7 per cent for those who married in the 1980s, compared with 11 to 12 per cent for those who married in the 1970s. (The survival gaps by 10 years after *marriage* rather than union formation were 11% and 14% respectively).

Multivariate effects: a direct assessment of self-selection effects

As noted above, previous research has suggested that pre-existing differences in the characteristics of those who choose the alternative pathways to marriage are important in explaining the elevated risk of marital separation linked with indirect marriages.

Logistic regression was applied to the *HILDA* data in order to assess the extent to which the difference in the probability of separation for direct and indirect marriages could be explained by systematic differences in the measured characteristics of those who adopt the alternative pathways to marriage. The analysis was undertaken twice: first in relation to probability of separation eight years after marriage, and second in relation to the probability of separation eight years after union formation.²

The parameter estimates of logistic regression are presented in Tables 3 and 4. Model 1 is the baseline model which includes only marriage cohort, pathway to marriage, and the interaction between these two variables. Model 2 adds

² The analysis was restricted to *HILDA* data because the surveys varied in terms of the type of "selectivity" variables measured. Those whose husbands died during the eight year period investigated and those whose marriages took place after 1994 were excluded from this analysis.

the following variables: the experience or otherwise of parental divorce during childhood, age at union formation, educational attainment, rating of importance attached to religion³, having given birth to a child before marriage, and country of birth. All these variables have been linked with marital stability / instability in previous research (see Australia Parliament 1998; Berrington & Diamond 1999; Glezer *et al.* 1992; Brüderl *et al.* 1999), although of course the characteristics measures do not capture all those suggested to be important in previous research.

Insert Tables 3 and 4 here

For simplicity, the results outlined below are based on the data for women. The general pattern of results for men is similar to that for women.

Probability of separation eight years after marriage

When none of the control variables was entered (Model 1), premarital cohabitation resulted in a 11 per cent increased probability⁴ of marital separation, but when the control variables were introduced (Model 2), this increased probability of marital separation fell to 5 per cent, but remained statistically significant (Table 5). This pattern of results supports the contention that self-selection into the two pathways to marriage helps to explain some of the difference in marital separation rates. In the present analysis, the self-selection measures that were introduced explained half the difference in separation probabilities of direct and indirect marriages.

Insert Table 5 & 6 here

Table 3 shows that the interaction of marriage cohort and premarital cohabitation in both Model 1 and Model 2 was significant and negative, suggesting that the elevated risk of marital separation linked with indirect marriages is disappearing for more recent marriage cohorts. For example, before any controls were entered, the difference between direct and indirect marriages in the probability of separation was 17 per cent for those who married in the early 1970s and 5 per cent for those who married in the early 1990s. When the controls were introduced, the difference in probabilities of separation for direct and indirect marriages fell to 11 per cent for the earlier cohort (1970–74) and the difference virtually disappeared for the recent cohort (1990–94).

In summary, pre-existing characteristics distinguishing those who marry directly or indirectly helped explain a considerable amount of the difference in the marital separation rates for the early marriage cohorts. Nevertheless, the difference remained significant for the sample as a whole. For the more

³ The importance attached to religion at the time of the survey is a loose proxy for religiosity experienced at the time of union formation. It remains possible that marriage pathway and marital separation experiences influenced religiosity.

⁴ In the discussion of these results, “probability” refers to the predicted probability based on the model.

recent cohort, the difference in separation rates for direct and indirect marriages virtually disappeared when these pre-existing characteristics were controlled.

Probability of separation eight years after union formation

As expected, differences in the probability of separation for direct and indirect marriages were smaller when the period under investigation was eight years following union formation rather than eight years following marriage (Tables 6). For the sample as a whole, before the control variables were entered (Model 1), indirect marriages had a 6 per cent higher probability of separation than direct marriages by eight years after union formation (compared with 11% by eight years following marriage). When the controls were introduced, indirect marriages had only a one per cent higher probability of separation than direct marriages by eight years after union formation (compared with 5 per cent in the eight years following marriage). Thus, both self-selection and starting point (marriage or union formation) were important in explaining differences between direct and indirect marriages in marital stability. Even so, the elevated risk of separation linked with indirect marriages remained significant for the sample as a whole when the starting point was union formation and when all control variables were introduced in the model.

However, the persistence of a link between marriage pathway and marital stability was only apparent for the earlier marriage cohorts. First, before the control variables were introduced, the greater risk of marital separation of direct over indirect marriages after eight years of union formation was 11 per cent for those who married in the early 1970s and only 2 per cent for those who married in the early 1990s. When the control variables were introduced, indirect marriages that took place in the early 1970s had a 6 per cent higher chance of separation than direct marriages. On the other hand, those who married indirectly in the early 1990s had a marginally (3%) lower risk of separating than their counterparts who married directly. The difference was not statistically significant, and thus may reflect chance variation.

Comprehensiveness of “selectivity” measures used as controls

Taken together, various studies have highlighted a diverse range of factors that may contribute to choice of pathway to marriage, in addition to the characteristics used as controls in the above analysis. For example, some studies have suggested that indirect marriages are more likely be preferred than direct marriages by those who have grown up in families who at some stage were dependent on social security, those who are more critical of relationships, who hold less traditional family values including greater acceptance of divorce as a solution to marital problems, and who emphasise autonomy or individualism (for reviews, see Brown & Booth 1996; Cohan & Kleinbaum 2002; Glezer *et al.* 1992; Lillard *et al.* 1995). Others propose that a period of cohabitation may be chosen by those who are more uncertain about their suitability to marry (Brines & Joyner 1999) or who believe that they may encounter difficulties in marriage (Lillard *et al.* 1995). Some of these studies are based on surveys undertaken when cohabitation was still relatively

uncommon. The next generation of studies is likely to provide new insights into factors that lead some couples to defy the “new convention” of marrying indirectly.

No single study could be expected to capture the diversity of factors that may influence choice of marriage pathway. Virtually all investigations into selectivity of pathway to marriage, including the present one, have been opportunistic in the sense that they are based on surveys that have not been designed specifically to examine such issues. As a result, their choice of selectivity measures is highly constrained, and many potentially important “selectivity” factors remain unmeasured, including many of the background characteristics of a former spouse.

Some of these unmeasured “selectivity factors” would affect both premarital cohabitation and marital separation (e.g. attitudes towards marriage). Thus, the unmeasured factors influencing premarital cohabitation would potentially be correlated with marital separation. Brüderl *et al.* (1999) point out that this leads the standard approach (i.e a single divorce equation) to yield biased results regarding the impact of indirect marriage on marital stability. To overcome this problem, Brüderl *et al.* (1999) and Lillard *et al.* (1995) use a bivariate probit model that allows for correlated error terms.⁵

Using the above approach, both Brüderl *et al.* (1999) and Lillard *et al.* (1995) found that the impact of indirect marriage on marital stability became non-significant but changed direction. That is, the previously observed enhanced risk of marital instability linked with premarital cohabitation disappeared, and the direction of trends was consistent with the notion that marriages preceded by cohabitation are likely to be more stable than direct marriages. Brüderl *et al.* (1999) saw these results as supportive of the “screening out” hypothesis (that the period of cohabitation helps screen out unsuitable matches), while Lillard *et al.* (1995) focused on their non-significance, arguing that either screening out was counterbalanced by enhanced willingness to divorce generated by cohabitation, or cohabitation was ineffective in screening out unsuitable matches.

Following the recommendations of the above authors, the bivariate probit model was applied to the HILDA data to estimate the impact of premarital cohabitation on marital separation after eight years of marriage. The results were similar to those suggested by Brüderl *et al.* (1999) and Lillard *et al.* (1995) in that the effect of premarital cohabitation was not significant but in a direction supporting increased marital stability (Table 7). When union duration rather than marital duration was measured, the results marginally reached significance.

Insert Table 7 here

⁵ See Kahn & London (1991) for a detailed explanation of this approach.

Summary and conclusions

In summary, these results suggest that, as indirect marriages have become more commonplace, the difference in the stability of direct and indirect marriages has diminished. Second, as would be expected, the difference is smaller if the duration of the (living-together) union rather than the duration of marriage is taken into account.

Third, the difference appears to be strongly influenced by self-selection factors: when some of the observed characteristics that appear to influence both marriage pathway and marital stability were controlled, the difference in the probabilities of separation eight years after marriage or union formation was substantially reduced.

Nevertheless, for the sample as a whole, the increased risk of separation associated with indirect marriages remained significant after the control variables were introduced, regardless of whether marriage duration or union duration was examined. At the same time, the link between pathway to marriage and marital stability seems to be changing as indirect marriages become increasingly commonplace. There appeared to be virtually no difference in the risks of separation eight years after marriage or union formation for the most recent cohort examined (those who married in the early 1990s), when the control variables were introduced.

There are at least two competing explanations for the results suggesting that, for the sample as a whole, indirect marriages have an increased risk of instability. The effect may have been influenced by the presence of unmeasured self-selection factors (e.g., differences between the two marriage pathway groups in values and attitudes towards marriage and divorce, and characteristics of the former spouse such as experience of previous cohabitations) or by any negative impact that the experience of cohabitation itself may have had on marital stability.

To address this issue, the next step in the analysis involved re-estimating the impact of indirect marriages on separation when these unmeasured selection effects were controlled. This analysis provided further support for the self-selection argument with the direction of trends supporting the notion that cohabitation may help to screen out some unsuitable matches. However, it is important to note that the multivariate analysis undertaken in this paper has not taken into account possible design effects linked with cluster sampling. This work is currently under way.

If indirect marriages become increasingly prevalent, we will see increased diversity amongst those who follow this pathway and decreased diversity amongst those who marry directly. The latter group may share religious and cultural backgrounds that lead them to condone neither cohabitation nor divorce. It is also possible that disproportionate numbers who follow this pathway share characteristics that contribute to happy marriages (see Parker 2002 for a review of studies of characteristics contributing to marital stability and marital happiness). If the pre-existing characteristics that lead people to

marry directly also contribute to “divorce resistance”, then we may see a growing divergence in the stability of direct and indirect marriages, once again in favour of direct marriages – a point noted by Brüderl *et al.* (1999).

Given the prevalence of indirect marriages, some couples will be better able than other couples to use the cohabitation experience to make well-informed and appropriate decisions about whether or not to marry. Thus, an important area for future research is the identification of factors that facilitate or interfere with a couple’s ability to profit by “trial before total committal” should they wish to follow this path.

References

Australian Bureau of Statistics (1995), *Australian Social Trends 1995*, Catalogue No. 4102.0, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics (2001), *Yearbook Australia*, Catalogue No. 1301.0

Australian Bureau of Statistics (2002a), *Census of Population and Housing: Selected Social and Housing Characteristics Australia 2001*. Catalogue no. 20150.0

Australian Bureau of Statistics (2002b), *Marriages and Divorces Australia, 2001*, Catalogue No. 3310.0, Australian Bureau of Statistics, Canberra.

Australia, Parliament 1998 (“Andrews Report”), *To have and to hold: Strategies to strengthen marriage and relationships. A report of the inquiry into aspects of family services*, House of Representative Standing Committee on Legal and Constitutional Affairs, Canberra, Parl. Paper 95, Canberra.

Axinn, W. G., & Thornton, A. (1992), “The relationship between cohabitation and divorce; Selectivity or causal influence?”, *Demography*, Vol. 23, pp. 357-374.

Berrington, A. & Diamond, I. (1999), “Marital dissolution among the 1958 British birth cohort: The role of cohabitation”, *Population Studies*, Vol. 53, pp. 19-38.

Brines, J., & Joyner, K. (1999), “The ties that bind: Principles of cohesion in cohabitation and marriage”, *American Sociological Review*, Vol. 64, pp. 333-355.

Brown, S., & Booth, A. (1996), “Cohabitation versus marriage: A comparison of relationship quality”, *Journal of Marriage and the Family*, Vol. 58, pp.668-678.

Brüderl, J., Diekmann, A., & Engelhardt, H. (1999), “Premarital cohabitation and marital stability in West Germany”, Online: <http://www.soz.unibe.ch/personal/diekmann/downloads/kohab.pdf>

Clements, M.L., Cordova, A.D., Markman, H.J., & Laurenceau, J-P (1997), “The erosion of marital satisfaction over time and how to prevent it”, in R.J. Sternberg and M. Hojjat (eds), *Satisfaction in close relationships*, (pp. 335-355), Guilford Press, New York.

Cohan, C.L., & Kleinbaum, S. (2002), "Toward a greater understanding of the cohabitation effect: Premarital cohabitation and marital communication", *Journal of Marriage and the Family*, Vol. 64, pp.180-192.

DeMaris, A., & Rao, V.K. (1992), "Premarital cohabitation and subsequent marital stability in the United States: A reassessment", *Journal of Marriage and the Family*, Vol. 54, pp.178-190.

de Vaus, D. (1997), "Families values in the nineties: Gender gap or generation gap?", *Family Matters* No.48, pp.4-10.

de Vaus, D., & Qu. L. (forthcoming), "Forming relationships: Changing patterns of partnering. *Family Matters* no. 64.

Glezer, H., Edgar, D., & Prolisko, A. (1992) "The importance of family background and early experiences on premarital cohabitation and marital dissolution", Paper presented at the International Conference on Family Formation and Dissolution: Perspectives from East and West, Taipei, Taiwan, Republic of China, May 21-23.

Kahn, J.R., & London, K.A. (1001), Premarital sex and the risk of divorce, *Journal of Marriage and the Family*, Vol. 53, pp. 845-855.

Karney, B., & Bradbury, T. (1995), "Neuroticism, marital interaction, and the trajectory of marital satisfaction", *Journal of Personality and Social Psychology*, Vol. 72, pp. 1075-1092.

Lillard, L., Brien, M., & Waite, L. (1995), "Premarital cohabitation and subsequent marital dissolution: A matter of self-selection?", *Demography*, Vol. 32, pp. 437-457.

Parker, R. (2002), *Why marriages last: A discussion of the literature*, Research Paper No. 28, Australian Institute of Family Studies, Melbourne.

Schoen, R. (1992), "First unions and the stability of first marriages", *Journal of Marriage and the Family*, Vol, 54, pp. 281-284.

Smock, P.J. (2000), "Cohabitation in the United States: An appraisal of research themes, findings, and implications", *Annual Review of Sociology*, Vol. 26, pp. 1-20.

Teachman, J.D., & Polonko, K.A. (1990), "Cohabitation and marital stability in the United States", *Social Forces*, Vol. 69, pp. 207-220.

Table 1. Estimated probability of marriage remaining intact by marriage duration

Marriage duration	Marriage cohorts					All
	70-74	75-79	80-84	85-89	90-94	
a. Direct marriages						
5 years	0.913	0.926	0.916	0.928	0.896	0.917
10 years	0.816	0.858	0.835	0.842	-	0.839
15 years	0.753	0.775	0.743	-	-	0.753
20 years	0.687	0.699	-	-	-	0.685
N	997	728	682	569	406	3382
b. Indirect marriages						
5 years	0.834	0.814	0.854	0.848	0.814	0.835
10 years	0.673	0.718	0.725	0.735	-	0.711
15 years	0.570	0.591	0.633	-	-	0.595
20 years	0.454	0.537	-	-	-	0.515
N	189	346	557	591	607	2290
Gap in probabilities of marriage remaining intact (a-b)						
5 years	0.079	0.112	0.062	0.080	0.082	0.082
10 years	0.143	0.140	0.110	0.107	-	0.128
15 years	0.183	0.183	0.111	-	-	0.159
20 years	0.233	0.162	-	-	-	0.171

Table 2. Estimated probability of marriage remaining intact by union duration

Union duration	Marriage cohorts					All
	70-74	75-79	80-84	85-89	90-94	
a. Direct marriages						
5 years	0.913	0.926	0.916	0.928	0.896	0.917
10 years	0.816	0.858	0.835	0.842	-	0.839
15 years	0.753	0.775	0.743	-	-	0.753
20 years	0.687	0.699	-	-	-	0.685
N	997	728	682	569	406	3382
b. Indirect marriages						
5 years	0.893	0.861	0.896	0.905	0.892	0.892
10 years	0.710	0.735	0.769	0.783	-	0.752
15 years	0.602	0.629	0.666	-	-	0.637
20 years	0.487	0.548	-	-	-	0.550
N	189	346	557	591	607	2290
Gap in probabilities of marriage remaining intact (a-b)						
5 years	0.02	0.07	0.02	0.02	0.004	0.03
10 years	0.11	0.12	0.07	0.06	-	0.09
15 years	0.15	0.15	0.08	-	-	0.12
20 years	0.20	0.15	-	-	-	0.14

Table 3. Logistic regression model of marital separation within eight years of first marriage, women

	Model 1	Model 2
	Coefficient	Coefficient
Marriage cohort	0.0006	0.0855
Indirect pathway to marriage	1.1480 **	0.9455 **
Parental divorce		0.4223 **
(Australia or New Zealand)		
Other Europe and North America		0.3208
Southern and Eastern Europe and Middle East		-0.0114
Other countries		0.1735
Post graduate or higher		0.1495
Bachelor degree		0.3306 *
Vocational diploma or certificate (No qualification)		0.2567 *
Rating of importance of religion in life		-0.0211
Cohabited with other partner before first married/partnered		0.4024
Age at start of living together with first husband		-0.3767 **
Squared Age at start of living together with first husband		0.0052 *
Premarital birth		0.4766 *
Marriage cohort * Premarital birth	-0.1636 *	-0.1989 *
INTERCPT	-1.6955 **	3.6206 *
N	2486	2486
Model chi-square	37.68	141.84
Degree of freedom	3	15

HILDA Wave 1 (2001)

** p < 0.01; * p < 0.05

Table 4. Logistic regression model of marital separation within eight years of union formation for first marriages, women

	Model 1	Model 2
	Coefficient	Coefficient
Marriage cohort	0.0006	0.0898
Indirect pathway to marriage	0.8694 **	0.6205 *
Parental divorce		0.2925 *
(Australia or New Zealand)		
Other Europe and North America		0.3868 *
Southern and Eastern Europe and Middle East		-0.2373
Other countries		0.0930
Post graduate or higher		0.1834
Bachelor degree		0.3166
Vocational diploma or certificate		0.2009
(No qualification)		
Rating of importance of religion in life		-0.0291
Cohabited with other partner before first married partnered		0.5744 **
Age at start of living together with first husband		-0.3159 *
Squared Age at start of living together with first husband		0.0039
Premarital birth		0.5220 **
Marriage cohort * Premarital birth	-0.1432	-0.1788 *
INTERCPT	-1.7834 **	2.9221
N	2424	2424
Model chi-square	15.26	101.16
Degree of freedom	3	14

HILDA Wave 1 (2001)

** p < 0.01; * p < 0.05

Table 5. Predicted probability of separation within eight years of first marriage, women

Marriage cohort	Model 1			Model 2		
	Direct marriage (a)	Indirect marriage (b)	Gap ((b)- (a))	Direct marriage (c)	Indirect marriage (d)	Gap ((d)- (c))
1970-1974	15.5%	32.9%	17.4%*	12.9%	23.9%	11%*
1980-84	15.5%	26.2%	10.7%*	15.0%	20.0%	5.0%
1990-94	15.5%	20.4%	4.9%	17.3%	16.6%	-0.7%
All cohorts	15.5%	26.1%	10.6%*	15.1%	20.0%	4.9%*

Note: the probabilities were computed based on the estimated parameters in Table 3 and the variable means
 * p<0.05

Table 6. Predicted probability of separation within eight years of union formation for first marriage, women

Marriage cohort	Model 1			Model 2		
	Direct marriage (a)	Indirect marriage (b)	Gap ((b)- (a))	Direct marriage (c)	Indirect marriage (d)	Gap ((d)- (c))
1970-1974	14.4%	25.8%	11.4%*	12.2%	17.8%	5.6%*
1980-84	14.4%	20.7%	6.3%*	14.3%	15.3%	1.0%
1990-94	14.4%	16.4%	2.0%	16.6%	13.2%	-3.4%
All cohorts	14.4%	20.7%	6.3%*	14.3%	15.3%	1%*

Note: the probabilities were computed based on the estimated parameters in Table 4 and the variable means
 * p<0.05

Table 7. Coefficients of bivariate probit model of marriage pathway and marital separation within 8 years of marriage

	Indirect pathway to marriage	Separation
Marriage cohort	0.3425 **	0.0957
Indirect pathway to marriage		-0.5848
Parental divorce	0.3496 **	0.3292 **
(Australia or New Zealand)		
Other Europe and North America	0.2596 **	0.2431 *
Southern and Eastern Europe and Middle East	-0.6066 **	-0.1263
Other countries	-0.7047 **	-0.0637
Post graduate or higher	0.0711	0.0841
Bachelor degree	0.0150	0.1749
Vocational diploma or certificate	0.0315	0.1443 *
(No qualification)		
Rating of importance of religion in life	-0.0975 **	-0.0356 *
Cohabited with other partner before first married partnered		0.1984
Age at start of living together with first husband		-0.2025 **
Squared Age at start of living together with first husband		0.0028 *
Premarital birth		0.2464 *
INTERCPT	-0.9114 **	2.1340 **
Correlation	0.46	^
N	2486	
Model chi-square	624	
Degree of freedom	23	

HILDA Wave 1 (2001)

** p < 0.01; * p < 0.05

^ p < 0.1

Appendix 1. Descriptive statistics for female respondents

	Mean	STD
Marriages separated within 8 years of marriage	0.19	0.39
Separation within 8 years of union	0.16	0.37
Year of marriage		
1970-74	0.20	0.40
1975-79	0.19	0.39
1980-84	0.21	0.41
1985-89	0.22	0.41
1990-94	0.19	0.39
Country of birth		
Australia and New Zealand	0.74	0.44
Southern and Eastern Europe and Middle East	0.06	0.23
Other Europe and North America	0.09	0.29
Other countries	0.11	0.32
Parental divorce	0.18	0.39
Educational attainment		
Post graduate or higher	0.09	0.28
Bachelor degree	0.16	0.36
Vocational diploma or certificate	0.35	0.48
No qualification	0.40	0.49
Rating of importance of religion in life (0=not important at all, 10=very important)	5.04	3.52
Cohabited with other partner before first married partnered	0.07	0.25
Indirect pathway to marriage	0.38	0.49
Age at start of living together with first husband	22.5	4.0
Premarital birth	0.07	0.26

N

2486

HILDA wave 1 (2001)