

Changing Education Gap in Divorce Risk in Taiwan: Findings from period and cohort data

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Abstract

While social gradient in divorce has been explored in many Western societies, this issue received relatively less attention in Asia. This study explores the educational gradient in divorce risk in Taiwan. The findings from period data show that a reversal in educational differential in divorce from positive to negative is observed for women in the 1980s and for men in the 1990s. The drastic increase in period divorce rates is accompanied by expanding social inequality—the least educated men and women are becoming more vulnerable to union instability. The cohort analyses indicate that substantial increase in divorce/separation rates was first observed in the 1990 census and for those born in the 1950s and later. Furthermore, social gap in union dissolution rates expanded much faster among men than women across the years. Synthetic cohort life table estimates based on 2010 period duration-specific divorce rates also reveal substantial educational differences in the proportions of marriages ending in divorce within 10 years. The potential causes of these recent trends and implications for family policies and social assistance are discussed.

Keywords: Divorce, educational differentials, vital statistics, census data, Taiwan

The increasing prevalence of divorce is one of the major family changes observed in many Western countries in the past several decades. While most countries in Asia have been characterized as societies with relatively low divorce rates when compared to Western nations, drastic rise in crude divorce rates has been reported in East Asia over the past few decades. Countries like Japan, Taiwan, South Korea, China, and Singapore have all witnessed a two- to five-fold increase in the prevalence of divorce in less than four decades (see Figure 1). In 2005, the crude divorce rate of Taiwan ranks the highest in the region and is only slightly lower than Hong Kong in 2010. When compared across these six societies, the speed of increase in divorce rates in Taiwan is also as striking as Hong Kong. Crude divorce rate in Taiwan has skyrocketed from a low of .37 (per 1,000 populations) in the late 1970s to a peak of 2.87 in 2003 as the country became a rapidly growing economy after the 1980s. The latest statistics show that crude divorce rate has decreased slightly since 2003 and stabilized around 2.4 to 2.5 in recent years (see Figure 2). When compared internationally, crude divorce rate in Taiwan is only lower than the United States, Switzerland, and Denmark and is higher than many industrialized countries in the world as of 2010 (see Figure 3).

Existing research in Western societies has shown that divorce patterns not only vary across countries but also across social groups within a given society. Divorce differentials suggest that social inequalities in marital instability and the undesirable consequences of divorce for adults

and children are experienced differently across social lines. In particular, prior studies have shown that the rapid increase in divorce have impacted the socially disadvantaged more than the advantaged in most societies that experienced high divorce prevalence (De Graaf and Kalmijn 2006, Härkönen and Dronkers 2006, Hoem 1997, Martin 2011). In Asia, demographic research on divorce differentials by education has only emerged after the millennium, particularly over the past couple of years. These studies have revealed negative educational differentials in union disruption observed in Taiwan, Japan, and Korea (Chen 2012, Park and Raymo 2013, Raymo, Iwasawa and Bumpass 2004, Raymo, Fukuda and Iwasawa 2012), which is consistent with the findings of recent family research on many developed societies. All of these studies investigated patterns of divorce by education among women. The data employed are either survey data (Chen 2012; Raymo, Fukuda, and Iwasawa 2012) or vital statistics and census data (Park and Raymo 2013; Raymo, Iwasawa, and Bumpass 2004) that either include limited numbers of measures or cover a relatively short period of time.

This study aims to offer a more comprehensive investigation of the educational patterns of divorce over the past four decades in Taiwan for both men and women at the population level with period and cohort data. This study plans to utilize vital statistics to describe period trend in divorce risk by sex and education across thirty five years (1975-2010). Then, analyses using four rounds of census data collected in 1980, 1990, 2000, and 2010 will be conducted to examine

changes in the prevalence of divorce and separation by birth cohort and education. Finally, this study will also use synthetic cohort estimates to evaluate the implications of duration-specific divorce rates observed in 2010 on the outcomes of recent marriages with life table techniques. This paper will end with a discussion on the potential causes and social implications of the educational gradients in divorce risk on the well-being of adults and children.

Conceptual Framework

The classic theory on the educational differentials in marital dissolution is put forth by William Goode (1993), based on a modernization perspective. Goode argues that when the social, legal, and economic barriers of ending a marriage are high, the prevalence of divorce tends to be low and is generally more common and “affordable” among the elite or the better educated. That is, the socially advantaged are more able to deal with the complicated processes involved in dissolving a marital union in such social context, which is typical of pre-industrial or early industrialized societies. In turn, the relationship between social class (or education) and divorce tends to be positive. Overtime, as the costs of dissolving a marital union decline and the social acceptance of divorce rise, the prevalence of divorce inevitably increases through rapid behavioral diffusion. Given that the breadwinner-homekeeper division of labor that prevails in industrialized societies places more sanctions on maintaining marital stability among the middle- and upper-class families, lower-class couples have relatively less to lose from dissolving a union

and also tend to suffer more economic strain than their better-off counterparts. Both factors lead to a weakening of the positive association between education and union dissolution, or even a reversal of such association from positive to negative (Goode 1993, Goode 1951).

As societies further evolve into post-industrialized economies, the shrinkage of the industrial sector and the expansion of the service sector have brought about new challenges for contemporary families (Esping-Andersen 1999). The former has resulted in heightened unemployment rates among the less-educated men, whereas the latter has enabled more low- and middle-skilled women to enter the labor market for service jobs. Past research has reported that women's employment and earnings are linked to a higher risk of divorce, particularly when their household income or spouses' earnings are low (Ono 1998). Moreover, post-industrialization is also accompanied by a deterioration of income inequality across classes, which tends to further exacerbate the educational gap in marital stability, leaving the socially disadvantaged much more vulnerable to marriage disruption (Esping-Andersen 2009, White and Rogers 2000).

The Social Context and Divorce Trend of Taiwan

During the Japanese colonial time in between 1895 and 1945, Taiwan is an agriculture-based society. From the late 1940s to the mid-1980s, a remarkably rapid transformation of Taiwan to a highly industrialized society changed many aspects of social and family lives for Taiwanese. For instance, dramatic progress toward urbanization and the completion of first demographic

transition both occurred along with the economic transition. Period total fertility rates began to plummet from 7 children in 1951 to replacement level in the early 1980s. While crude marriage rates and crude divorce rates had been relatively stable across this four-decade period (around 7-9‰ for CMR and around less than 0.5‰ for CDR), constant decrease in marriage rates and striking increase in divorce rates have been reported since the 1980s, from 10‰ to about 5-6‰ for CMR and from 0.5‰ to more than 2.5‰ for CDR in recent years.

On the other hand, women's education used to be of low priority to families in agrarian Taiwanese societies. Educational expansion has taken place along with industrialization in Taiwan since the 1970s. Increasingly more women advance to tertiary education after finishing secondary education. The share of female college students has climbed from 21% in 1960 to 36% in 1970 and further to 50% in 2010 (Ministry of Education 2012). The improvement in human capital among women has propelled a surge in labor force participation rates at prime-working ages, with a tremendous increase from 56% to 84% at ages 25 to 29 and from 55% to 77% at ages 30 to 34 in between 1987 and 2010 (DGBAS 1987-2010). All these social and economic changes have formed the backdrop of various changing family behaviors in Taiwan.

The trend of crude divorce rates over the past century in Taiwan is characterized by a U-shaped curve, with the lowest rates recorded in 1968 and 1969 at 0.35‰. Crude divorce rates used to be as high as nearly 2‰ in the first decade of the twentieth century and dropped to a low

level of less than 0.4‰ in between the early 1960s and early 1970s (Ministry of the Interior 1947-2012, Thornton and Lin 1994). The reason why divorce rates were so high in the dawn of the 20th century is very likely due to the prevalence of matrilocal and minor (i.e., adopting young girls as future daughter-in-law) marriages (Wolf and Huang 1980) and the fact that these unions tend to be much more fragile. About 7-20 percent of matrilocal marriages and 20-24 minor marriages end in divorce in the beginning of the 20th century (Pasternak 1983, Wolf and Huang 1980). Their prevalence in the early 1900s and subsequent decline through the first five decades of last century have led to the rapid decline in divorce rates—the left side of the U-shape divorce trend. Since the mid-1970s, a phase of brisk growth in crude divorce rates began, reaching a record-high level of 2.83‰ in 2006 and have stabilized around 2.5‰ in recent years (Ministry of the Interior 1975-2012). This upsurge in divorce is mainly caused by modernization and urbanization that came with industrialization, as divorce rates were much higher in metropolitan areas and among the better educated in the early stage (Thornton and Lin 1994).

While changes in divorce patterns in the last century have been documented in prior research (Barclay 1954, Goode 1993, Thornton and Lin 1994), very little attention has been paid to the social variations in marital dissolution. Even the Statistical Yearbook published by the government release only registered divorce counts by age *or* by education, along with crude divorce rates. An exception is a study by Lee (1984) that attempted to describe the educational

differentials in divorce in the years of 1969, 1971, 1977, 1979, and 1981 using vital statistics data (Lee 1984). Given the various demographic transitions that occurred over the past fifty years in Taiwan, a systematic investigation of divorce differentials by education is needed, for it offers a more comprehensive picture of social stratification in times of rapid family changes.

Prior Research on Educational Differentials in Divorce

A plethora of research has been done to investigate the educational gradients of divorce in Western societies in recent decades (Blossfeld et al. 1995, De Graaf and Kalmijn 2006, Härkönen and Dronkers 2006, Hoem 1997, Jalovaara 2003, Martin 2011, Matysiak, Styrk and Vignoli 2013, Ono 1998, Teachman 2002, Vignoli and Ferro 2008) and different patterns of educational differentials in divorce have been reported. While some studies found a positive relationship between women's education and marital instability (Blossfeld et al. 1995, De Rose and Di Cesare 2007, Poortman and Kalmijn 2002, Vignoli and Ferro 2008), others have shown a negative relationship (Boyle et al. 2008, De Graaf and Kalmijn 2006, Hoem 1997, Jalovaara 2003, Martin 2011, Teachman 2002). A common trait of these studies is that they mainly focus on women, except for one Finish study that investigated the association between men's education and marital instability (Jalovaara 2003). Little is known about the divorce patterns of men.

The general patterns revealed by Western research line up well with Goode's hypothesis that divorce differentials by education tends to be positive in countries where marital disruption is

uncommon and negative where divorce rates are much higher (Härkönen and Dronkers 2006, Matysiak, Styrac and Vignoli 2013). For instance, Greece and Spain would belong to the former group and Sweden and Austria the latter. There are a few exceptions that do not conform to this pattern. Divorce is still positively correlated with education in Italy, despite divorce rates have substantially increased over the past four decades (Vignoli and Ferro 2008). In the United States, the association between education and divorce risk has remained stable for marriage cohorts from 1950 to 1984 (Teachman 2002), even though the prevalence of divorce has increased drastically between the late 1950s and 1980. In addition, when compared across social contexts, research suggests that the level of women's labor force participation is negatively linked to the social gradient of divorce. In other words, as more women entered the labor market, the risk of divorce tends to be much higher among the lower class of a society (Matysiak, Styrac and Vignoli 2013).

On the other side of the globe, substantial variations in recent patterns of marital dissolution have been observed in Asia. The Islamic Southeast Asian countries have been characterized by declining divorce rates until recent years, whereas the South Asian countries have experienced relatively constant and low divorce rates (Dommaraju and Jones 2011). For the more developed part of Asia, family dissolution rates have been increasing over the past decades in major East Asian societies (Dommaraju and Jones 2011, Park and Raymo 2013, Raymo, Iwasawa and Bumpass 2004, Yi and Deqing 2000). Educational differentials in marriage disruption have also

been documented in Japan and Korea (Park and Raymo 2013, Raymo, Iwasawa and Bumpass 2004, Raymo, Fukuda and Iwasawa 2012). In both countries, a negative educational gradient in divorce risk has been found for recent cohorts. While divorce differentials by education used to be negligible in the 1980 census, women without any tertiary education have become much more likely to end their marriages in the 2000 census in Japan (Raymo, Iwasawa and Bumpass 2004). In South Korea, Park and Raymo (2013) indicated that less educated Korean women have always experienced the highest divorce risk for those who married in between 1993 and 2002.

As for educational variations of divorce in Taiwan, an earlier study by Lee (1984) made use of divorce registration data and vital statistics showed that education is positively associated with divorce rates for both sexes in between 1969 and 1981 and the positive educational gradient is much stronger for men than for women (Lee 1984). Another recent study by Chen (2012) investigated the educational gaps in marital disruption using the Women's Marriage, Fertility, and Employment Survey. A total of 14 waves of cross-sectional surveys in between 1980 and 2006 were pooled together to examine divorce patterns by marriage cohort among 190,000 ever married women (excluding widows) ages 25 to 60. The findings indicated that while better educated women in earlier marriage cohorts (1940s to 1970s) were more likely to divorce, divorce risks increased faster and was much higher among the less educated women in later marriage cohorts. In turn, a reversal of educational gradient in divorce from positive to negative

was first observed among women who married in 1980-1990. While this study provides detailed analyses on the changing educational differentials in divorce behaviors for women who married in between 1940 and 1990, the logistic regression analyses present only the *relative* risk of divorce for women from different educational backgrounds. The actual period prevalence rates of divorce and cohort divorce rates by education since 1980 have not been systematically examined in Taiwan. In addition, no empirical research has addressed the union dissolution patterns among men by education across different cohorts.

The current study seeks to make use of the valuable and high-quality vital statistics and census data in Taiwan to offer a more comprehensive depiction of divorce patterns by education for both men and women from both period and cohort perspectives. This paper aims to explore three main research questions: (1) how do the educational gradients in divorce change across periods and cohorts over the past few decades? (2) do the changes in educational gradients in divorce vary by sex? (3) what are the implications of these changes in divorce risks on the outcomes of recently formed marriages by sex and education?

Research Design

Data

1. Vital statistics

Data for divorce counts by sex and education as well as population counts by sex and education

ages 15 and over were compiled from the Statistical Yearbook from years 1975 to 2010. These figures were used to calculate general divorce rates per 1,000 populations to describe period trend from 1975 to 2010. Nationwide duration-specific divorce counts by sex and education were also acquired for year 2010 from the Department of Household Registration. Along with annual marriage registration data, duration-specific divorce rates were calculated to construct synthetic cohort divorce life tables for men and women separately, assuming mortality can be ignored.

2. Census data 1980, 1990, 2000, and 2010

Census data from 1980, 1990, 2000, and 2010 were used to analyze prevalence of divorce and the educational gradient of divorce across cohorts. One thing to be noted is that in all census questionnaires, individuals who were divorced or were separated from their spouse are grouped in the same response category for their marital status. Thus, all analytical findings using census data are in fact a combination of divorce and separation. However, given that divorce still carries a certain degree of stigma in a family-oriented society like Taiwan, one would expect those who are separated from their spouse (but not divorced) are very likely to pick “married” rather than “divorced/separated” as their marital status in the census.

Analytical Strategies

From a period perspective, divorce trend is first examined by calculating education-specific general divorce rates from 1975 to 2010, using the vital statistics on divorce and the 15+

population data. Census data on current marital status were then used to reveal cohort experiences of divorce/separation by sex. Further analyses were conducted to demonstrate educational variations in divorce/separation rates by sex and education across cohorts and census years. Logistic regression models were run to investigate the relative risk of divorce across educational groups and birth cohorts, using four rounds of census data. Finally, duration-specific divorce rates observed in 2010 were presented and were used to construct synthetic cohort life tables to estimate the proportions of recent marital unions remaining intact by different marriage durations across educational levels for men and women.

Findings

Period Trends

This paper started out by calculating general divorce rates since year 1975. Annual general divorce rates are presented for men and women in three educational categories (i.e., less than high school, high school, junior college and above) between 1975 and 2000. Figure 4 shows that divorce differentials by education used to be positive for men in the 1970s and early 1980s. The positive gradient reversed in the 1990s and that men with tertiary education were no longer more likely to divorce than their less educated counterparts. Moreover, the educational gap in divorce risk has been growing since the crossover took place, resulting in less-educated men's heightened likelihood to experience family disruption in recent years, particularly the high-school-educated.

For women, the crossover occurred earlier than men and the early 1980s appear to be the “watershed” when educational gradient in divorce shifted from positive to negative. Similar to men, the social gap in divorce risk has been expanding after the reversal of divorce trends, leaving those without tertiary education much more vulnerable to marriage dissolution for more than two decades. The two graphs for men and women indicate that the drastic increase in divorce rates over the past four decades in Taiwan has been mainly driven by the tremendous growth in marital dissolution among the less educated. The prevalence of divorce among those with tertiary education has tapered off since the late 1990s for both sexes. While period measures of divorce can potentially underestimate the share of individuals who *experienced* marriage disruption but have remarried, the recent remarriage patterns by education shown in Figure 5 suggest that the relatively low remarriage rates among the least educated men and women of all educational levels are not likely to substantially close the educational gap in divorce revealed in Figure 4.

Cohort Trends

Next, divorce/separation trend was examined from a cohort perspective with four rounds of decadal census data from 1980 to 2010 in Taiwan. The census data were analyzed across education levels by sex for divorce/separation risk, as shown in Figure 6. During the 1980 census year (the top panel), the high school graduates had always had higher divorce rates than men

from other educational groups. The least and best educated used to have the lowest divorce rates in the earlier cohorts, but a negative education-divorce relationship began to emerge for cohorts born in the 1940s. For women, a somewhat positive educational gradient is observed for cohorts born prior to 1940, with college-educated women having the highest risk of divorce/separation. The pattern converged later for the 1945-49 cohorts. As one moves to the plots for the 1990 census, a clear negative educational gradient in divorce risk emerged for men born in the late 1940s. Men of the post-1945 cohorts have much higher divorce/separation rates than those reported in 1980 census. Divorce/separation rates for women in the pre-1935 cohorts remain very similar to the levels observed in the 1980 census, but started to increase for cohorts born in the late 1930s and after. For both sexes, a clear negative educational differential in divorce was observed for men in the post-1945 cohorts and women in the late-1950s cohorts.

As for the 2000 census, rates of divorced/separated men and women further increased for the late 1940s to the 1960s cohorts, with a peak at the 1950-54 cohorts for men and 1955-59 cohorts for women. While divorce rates of least educated men and women skyrocketed across all cohorts, those of the rest three educational groups showed strong signs of declining paths for the post-1950 cohorts. Overall, educational gap in divorce/separation risk is much wider for men than for women among the younger cohorts in 2000. Finally, graphs for the 2010 census show that divorce/separation rates increased to an all-time high of over 100 incidents per 1,000

ever-married population without tertiary education for both sexes, with the least educated men having divorce/separation rates of more than 200‰ for those born in the 1970s. The educational gap in divorce/separation risk is particularly wide for men, although women also experienced tremendously unequal risks across educational groups. Across all cohorts, an intriguing pattern between men and women is the divorce/separation level of the least and best educated—men without a high school degree experienced much higher rates of union disruption than their female counterparts, but women who completed college education have much higher rates of divorce/separation than their male peers.

Logistic regression models presented in Table 1 further supported the findings in Figure 6 and reveal the net effect of education. Substantial increase in divorce risk was first led by those born in the late 1940s. In addition, clear and strong educational differentials in divorce only emerged in the 1990 census. When birth cohorts were taken into account, men with college education used to be 35% less likely to divorce/separate than the least educated men, whereas college-educated women were 6% less likely to divorce/separate than the least educated in 1990. With the rapidly growing educational gap in divorce risk over the years, the comparable figures in 2010 were 70% and 36% for men and women. Having received college education is now linked to a much lower likelihood of marriage disruption in recent years.

Finally, to investigate the implications of the expanding educational gap in marital instability

on recently formed marriages, duration-specific divorce rates by sex and education were calculated. As shown in Figure 7, there are clear educational variations in the patterns of divorce risk. The peak of such risk is observed at one year after marriage for men and women with a high school degree or less, and the risk of marital disruption declined as the duration of marriage increase. Quite different from the less educated men and women, those with tertiary education have relatively low and constant divorce risk across almost the entire span of marriage duration. The risk of divorce for the better educated only declined substantially for marriages that lasted more than 20 years. One notable pattern is that while the risk of disruption is much higher among the less educated for marriages of shorter durations, an educational crossover in divorce risk is observed for marriages that lasted longer than 10 years: those with less than high school education and a high school degree have become less likely to dissolve a marriage than their better educated counterparts. Next, synthetic cohort life table estimates of proportions of unions that remain intact by marriage duration are presented by sex and education, using the 2010 duration-specific divorce rates discussed above. Overall, Figure 8 reveals that about 11% of marriages would dissolve within 5 years and 21% within 10 years. By the time of the 30th anniversary, roughly 77% of marriages are still intact. When separated by sex and education, divorce risks are slightly higher for men than for women for all educational groups, and much higher among the less educated than those with tertiary education. As shown in the graph, the

educational gap in the proportions of intact marriages between those with and without tertiary education expands rapidly after one year of duration. About 16-17% of marriages dissolve within five years for the less educated, but the comparable figures are less than 7% for those with tertiary education. The widest gap is about 10-13% between these two groups for unions that lasted more than 8 years and longer. For instance, the risk of union dissolution within 10 years is about 23-26% for those without tertiary education and only 12-13% for the better educated. Since crude divorce rates have stabilized at around 2.5‰ between 2007 and 2012 (a drop from the high plateau of 2.7-2.9‰ in years 2002 to 2006), the life table estimates here will be underestimations only if another phase of drastic increase in marital dissolution resume in the near future.

Conclusion and discussion

This paper set out to investigate the changing educational variations in divorce risk over the past few decades in Taiwan. The findings show that as Taiwan went through industrialization and becomes a post-industrialized society, drastic increase in crude divorce rates, along with very low fertility and decreasing marriage rates, have been the new social reality in recent years. Period analyses on general divorce rates reveal that back in the 1970s, education used to be positively associated with the prevalence of marriage dissolution for both men and women. An educational crossover in divorce rates was first observed in the 1980s for women and 1990s for men, which led to a reversal in educational gradients of divorce from positive to negative in subsequent years.

In particular, the drastic increase in divorce rates mask the fact that social inequality is expanding across educational lines: the least educated are becoming much more vulnerable to union instability, and divorce rates of those with tertiary education have tapered off since the late 1990s.

These period trends of crude and general divorce rates resonate with Goode's hypothesis that prevalence of marital dissolution is higher among the better educated when divorce is rare. As divorce becomes more common, educational differentials in marital dissolution become negative. Similar findings of a reversal of divorce differentials by education from positive to negative (De Graaf and Kalmijn 2006, Hoem 1997), and how family disruptions tend to be more concentrated in contemporary working class families than in middle-class families as a society went through demographic transition and economic restructuring (Esping-Andersen 2009, Martin 2011, McLanahan 2004) have been reported in other developed nations. While prior studies on Korea and Japan find the negative educational differentials in divorce are somewhat of an anomaly in social contexts where the costs of divorce remain high, the divorce patterns reported for Taiwan actually occur in a society with declining costs of marriage disruption. The next sections discuss potential explanations for the recent patterns of high divorce prevalence among the less educated Taiwanese population from social, economic, and legal perspectives.

First of all, public opinions about divorce have become more tolerant as suggested by various rounds of the Taiwan Social Change Survey that collect important attitudinal variables

from nationally representative samples since the 1980s (Fu 2012). Analyses on the mean scores for the question that asks respondents whether it is justifiable for incompatible couples to get a divorce have increased from 2.74 in 1984 to 3.96 in 2010 (results not shown), holding age, sex, education, and marital status constant (a higher score indicates more tolerance). Respondents are also increasingly more disapprove of the statement that couples should not divorce for the sake of children in between 1994 and 2011. These findings show evidence for rising public acceptance of divorce and decline in social costs of divorce.

Secondly, the expanding educational gap in divorce in post-millennium Taiwan demonstrates how entrenched social inequalities are further exacerbated by erosion of financial well-being among the disadvantaged in times of post-industrialization. The worsened economic conditions among blue-collar male workers who have suffered from work outsourcing and high unemployment rates over the past two decades are also key factors. Unemployment rates have been on the rise since the mid-1990s for men and women of all educational levels. In particular, the risk of being out of work is much higher among blue-collar male workers than female workers in the post-millennium years. In the 1970s men without a high school degree used to have the lowest unemployment rates than people in other educational groups, but in 2009 the proportion of them losing jobs reached an unprecedented high point. The decline in economic well-being that follow a breadwinner's job loss often leads to more marital conflict and union

instability (Conger, Rueter and Elder Jr 1999, Yeung and Hofferth 1998). Meanwhile, a substantial growth in labor force participation rates among women without a high school degree in prime working ages of 20 and 50 between 1995 and 2010 has been reported, whereas men with similar education have experienced a drop in labor force participation rates in the same period. (DGBAS 1987-2010). For instance, labor force participation rates for women ages 30 to 34 without a high school degree were 48.06% in 1995 and 60.06% in 2010, while comparable rates for men with similar education were 95.95% in 1995 and 87.67% in 2010. As men's economic prospect is still a crucial determinant of marriage in times of rising inequalities (Oppenheimer, Kalmijn and Nelson 1997), deteriorating employment opportunities among the disadvantaged men surely affects the stability of their marriages. The rise in women's labor force participation rates, on the other hand, alleviates the economic costs of divorce and lowers the risk of post-divorce economic strain among less educated women.

Thirdly, a series of legal reforms in family law since 1985 has led to several important changes regarding divorce: (1) an amendment of Article 1052 for a more lenient prerequisites of divorce in 1985; (2) an amendment of Article 1030 for more equal distribution of properties acquired during marriage in 1985; (3) an amendment of the "paternal priority" principle that has dominated custody assignments in divorce settlements to an equal and "child-centered" principle in 1996 (Chen 2011). In the past, custody rights were automatically assigned to fathers upon

divorce. After the amendment of Article 1051 of the Civil Law in 1996, post-divorce custody rights should be agreed by both parents, and it can belong to one party or shared by both parties. When no mutual agreement is reached, the court should make custody assignment based on the best interest of the child(ren). Although no empirical research has investigated the impact of these legal reforms on the tremendous surge of divorce cases after the 1980s, they certainly reduce the various “costs” of divorce for individuals who wish to end their marriage. In particular, the reform on custody arrangement could have benefited and empowered disadvantaged mothers more than their better educated peers, for they are now provided with legal rights to fight for and to win child custody that used to be out of reach in prior times.

Cohort data derived from four waves of decadal census between 1980 and 2010 show slightly different findings as suggested by the period trends, especially for men. The 1980 census data show that the prevalence of divorce among ever-married adult population used to be on a declining path for men and quite stable for women across cohorts. While college-educated women in the older pre-1940 cohorts had higher risk of divorce than the less educated, better educated men in older cohorts have had lower divorce risk than the less educated. Substantial increase in divorce/separation rates was first observed in the 1990 census and the forerunners were those born in the 1950s and later. These are the men and women who were coming of age when industrialization and urbanization in Taiwan were running at full speed. As divorce rates

took off in the 1990 census, negative educational gradients in divorce also emerged for both sexes, and such social gap in union dissolution rates expanded much faster among men than women over the years. The faster expansion of educational gap in divorce among men persists throughout the censuses of 2000 and 2010.

While most previous divorce research focused mainly on women, the results here suggest that rising prevalence of divorce is causing greater social inequalities in marriage instability among men. Heightened divorce rates among the less educated men can have unfavorable consequences for the adults and children involved in these unions. Indeed, analyses of the Taiwan Social Trend Survey data show that 97% of single-father families were caused by divorce (vs. 78% of single-mother families) in 2006. In addition, a much larger share of single-father families are headed by low-income divorced fathers in 2006 than in 1998 (Cheng and Wu 2013). The economic advantage of single-father families over single-mother families has been declining. Furthermore, the levels of parental involvement with and awareness of children are much lower among less educated lone-fathers than better educated lone-fathers, whereas no educational differences are found among single-mothers' parenting practices (Cheng and Wu 2013). Single mothers on average are much more involved with their children than single fathers. Prior studies have shown that the lower parental involvement in single-parent families is key to the inferior child outcomes when compared to two-parent families (Astone and McLanahan 1991, Thomson,

Hanson and McLanahan 1994). Hence, expanding negative social gap in divorce risk among men and the lower parental involvement among the disadvantaged long-fathers will certainly affect the adjustments and well-being of the children involved in these disrupted families—an important issue awaiting to be addressed in future research.

As marriage rates are declining much faster among the less educated men and women than their more advantaged counterparts (Cheng 2013), the diverging outcomes of recent marriages across educational groups implied by the life table estimates warrant more attention. Within five years since marriage, less than 7% of unions dissolve for those with tertiary education but about 16-17% break up for men and women without a high school degree. Given that remarriage rates for the disadvantaged are also particularly low, these patterns indicate that the less educated are spending an increasingly large proportion of their lives outside a marital union as single or previously married individuals. As less educated individuals have more limited human capital and less socioeconomic resources at their disposal, the consequences of heightened divorce risk and low remarriage rates will certainly have considerable impact on their life outcomes for they lack an extra safety net brought by family support at old ages. While policy makers and the public discourses often focus on the disadvantages of single-mother families when lone-parent families are concerned, the results of this paper call for more attention to the well-being and development of all adults and children in disrupted families with limited resources.

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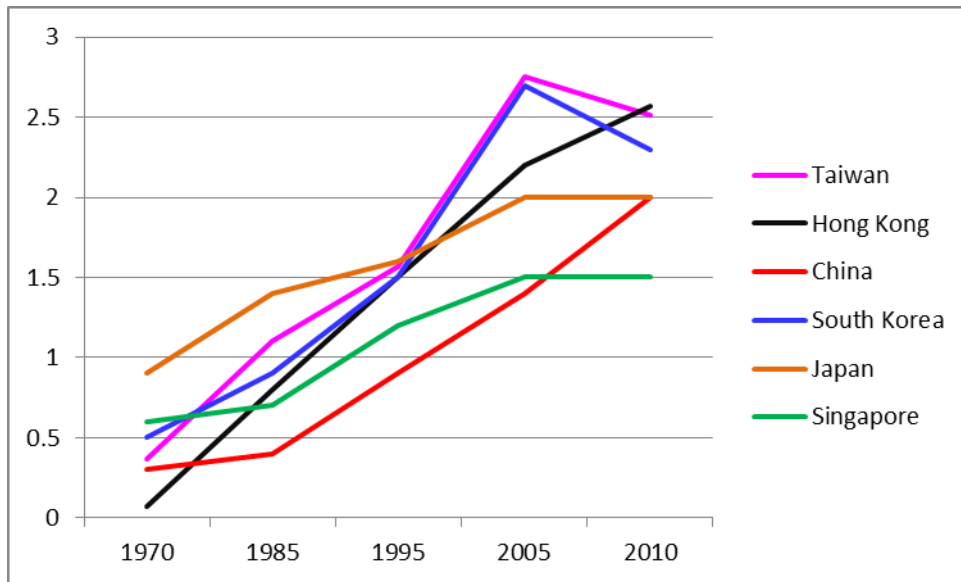
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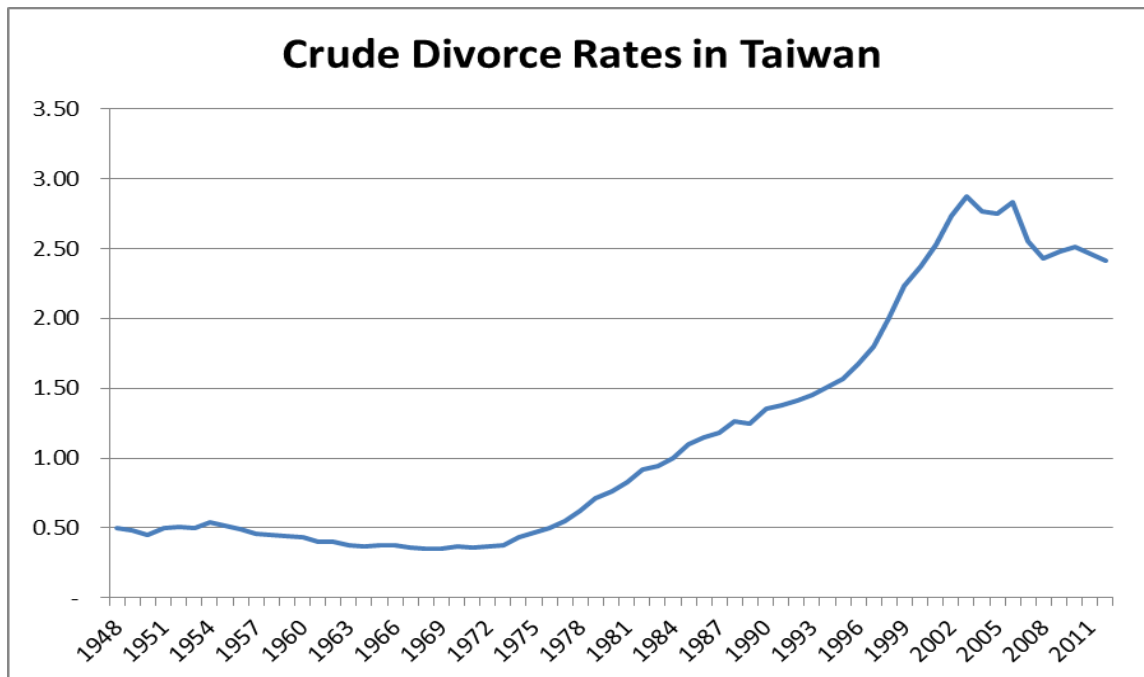
Figure 1. Crude divorce rate (per 1,000 population) in six Asian societies



Source: United Nations, Department of Economic and Social Affairs, Population Division (2009). *World Marriage Data 2008* (POP/DB/Marr/Rev2008).

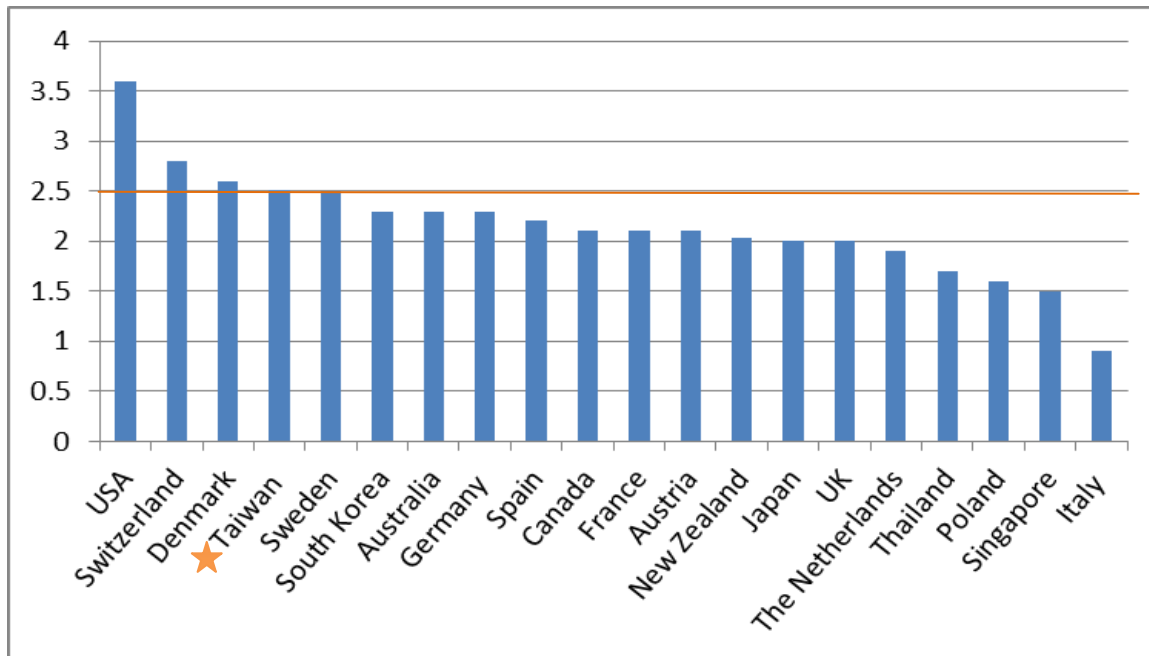
http://www.un.org/esa/population/publications/WMD2008/WP_WMD_2008/Data.html

Figure 2. Crude divorce rate (per 1,000 population) over six decades in Taiwan



Source: Department of Household Registration, Ministry of the Interior. http://www.ris.gov.tw/zh_TW/346

Figure 3. Crude divorce rates in 20 industrialized societies, 2010



Source: United Nations, Department of Economic and Social Affairs, Population Division (2009). *World Marriage Data 2008* (POP/DB/Marr/Rev2008).

http://www.un.org/esa/population/publications/WMD2008/WP_WMD_2008/Data.html

Figure 4. General divorce rate (per 1,000 population aged 15+) by sex in Taiwan, 1975-2010

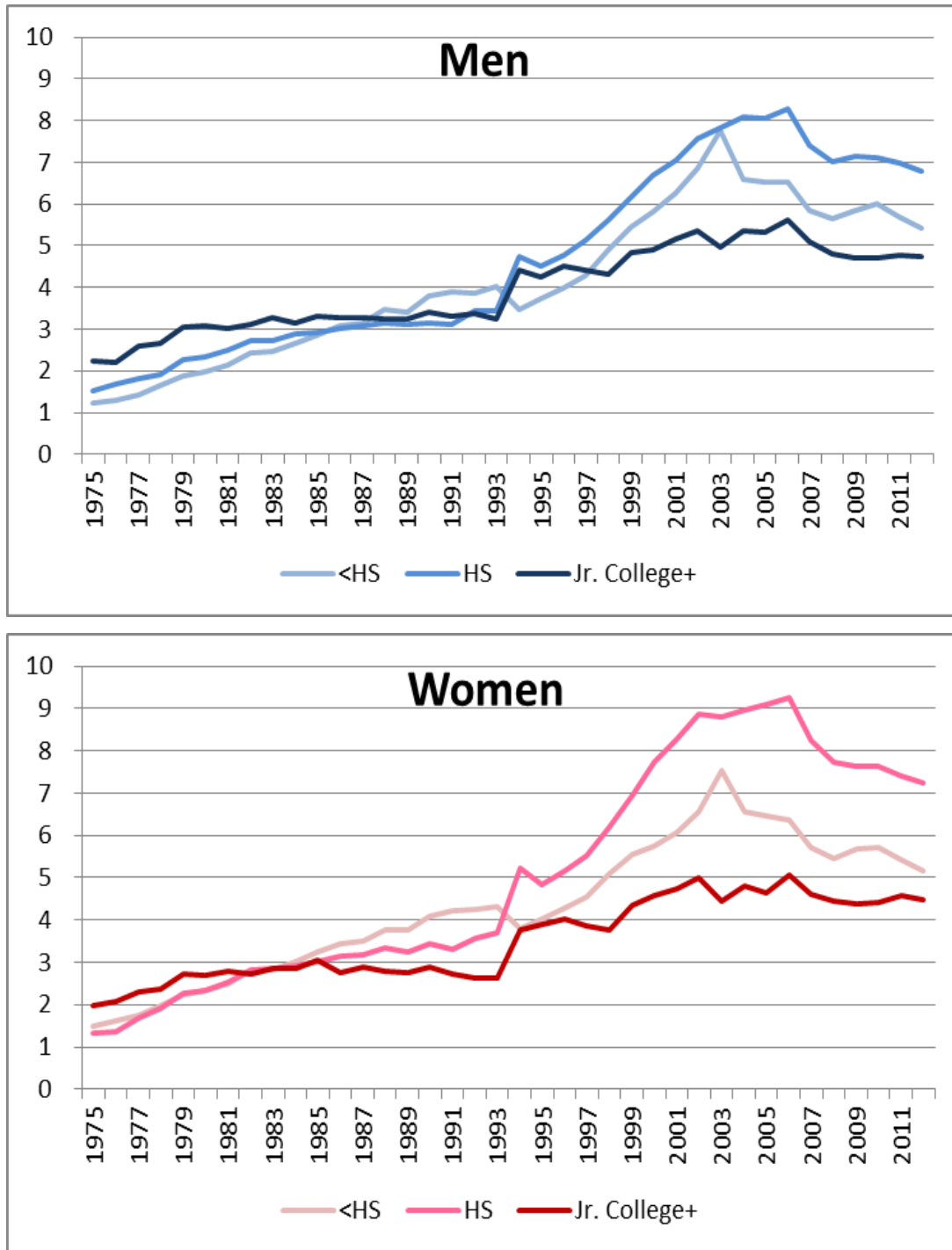
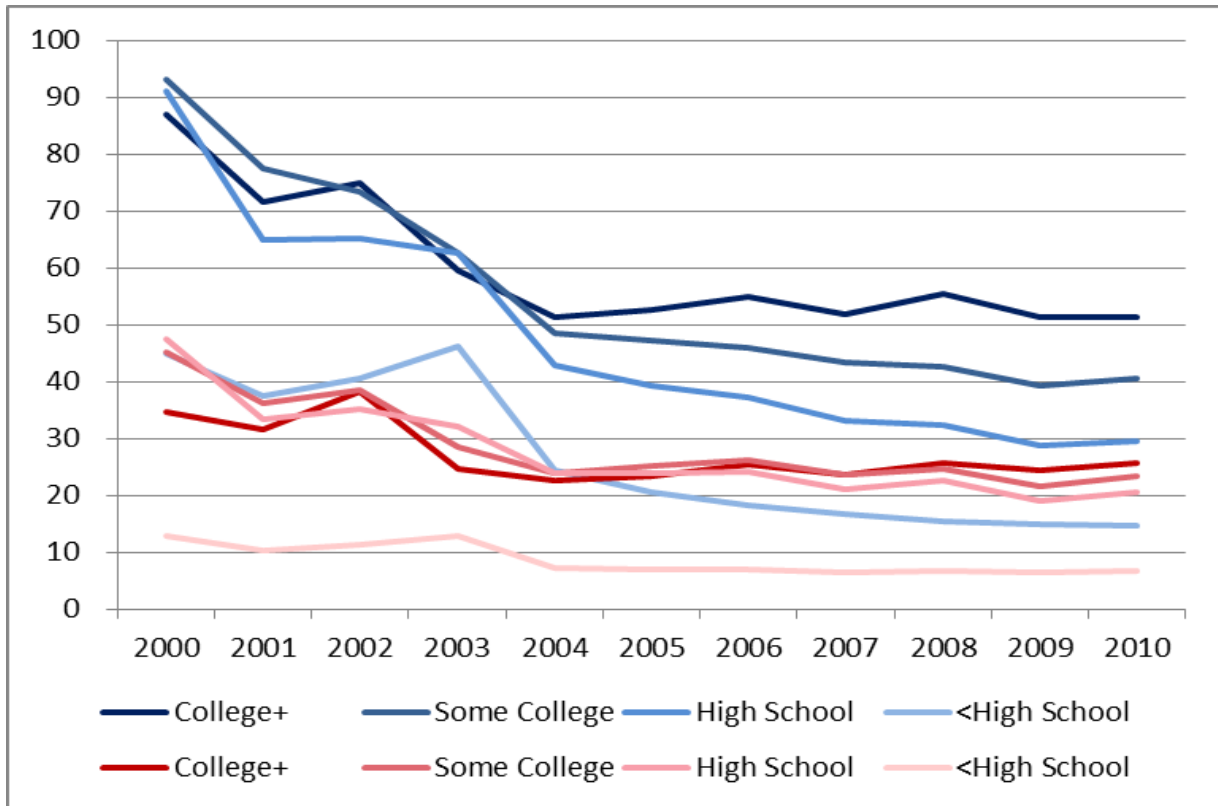


Figure 5. Remarriage rates per 1,000 divorced/widowed men and women by education



Note: Remarriage counts by education were not available for years before 2000.

Figure 6. Divorce/separation rates per 1,000 ever-married adults by cohort and education

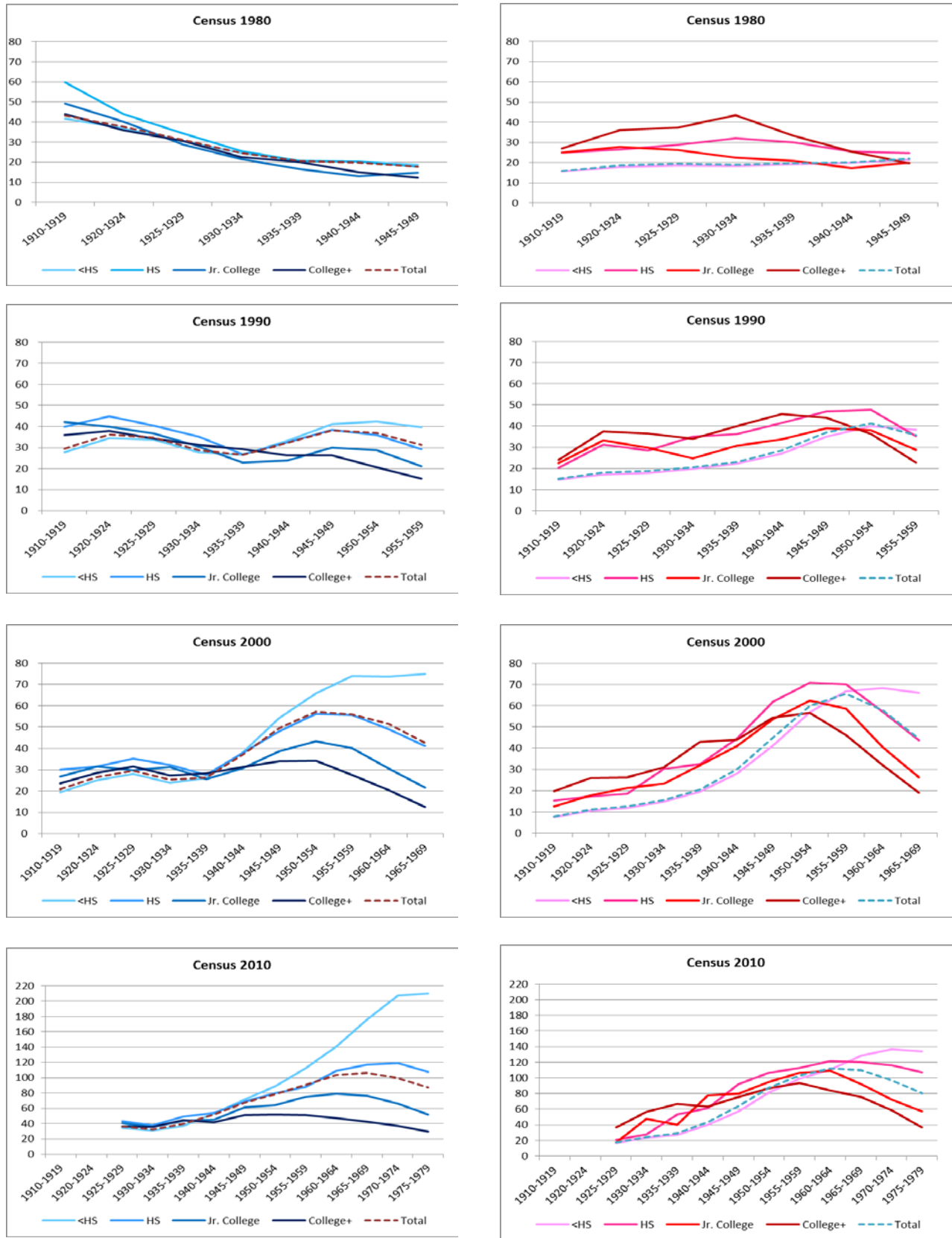


Figure 7. Duration-specific divorce rates by sex and education observed in 2010

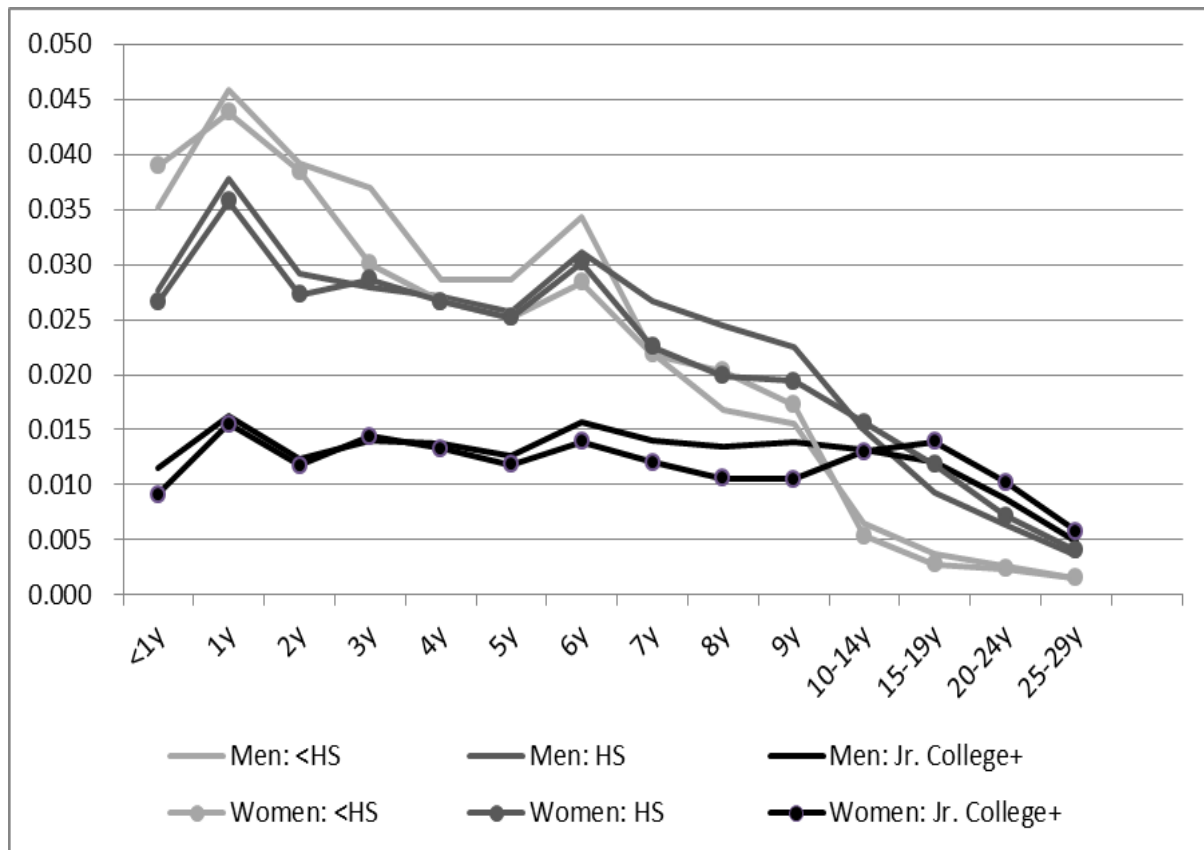
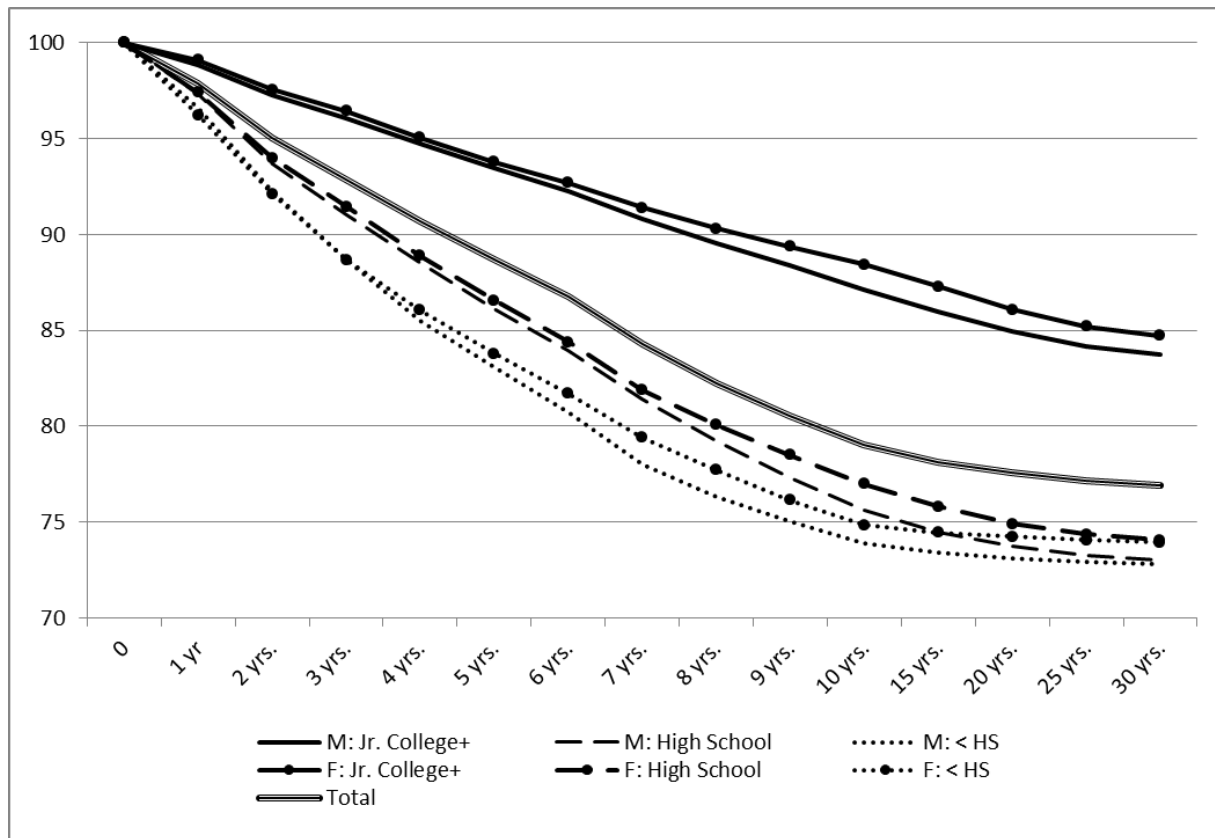


Figure 8. Synthetic cohort life table estimates of proportions of intact marriage for men and women across educational groups, based on 2010 observed duration-specific rates



Notes:

*Lines with dots are women.

*The curves for those with junior college and college+ education are very similar for both men and women and were thus combined as one category.

Table 1. Odds ratios of divorced/separated men and women in three census rounds in Taiwan

	1980		1990		2000		2010	
	Men	Women	Men	Women	Men	Women	Men	Women
Education (ref. <HS)								
< High School	--	--	--	--	--	--	--	--
HS	1.11***	1.37***	0.94***	1.17***	0.78***	1.01*	0.75***	1.14***
Jr College	0.91***	1.04	0.75***	0.97*	0.53***	0.75***	0.49***	0.82***
College+	0.89***	1.28***	0.65***	0.94***	0.42***	0.65***	0.30***	0.64***
Cohort (ref. 1940-44)								
1910-19	2.26***	0.79***	0.90***	0.53***	0.54***	0.26***	--	--
1920-24	1.95***	0.93***	1.12***	0.63***	0.70***	0.36***	--	--
1925-29	1.59***	0.96*	1.07***	0.65***	0.78***	0.41***	0.68***	0.39***
1930-34	1.25***	0.95**	0.88***	0.72***	0.65***	0.51***	0.57***	0.55***
1935-39	1.05**	0.99	0.81***	0.81***	0.68***	0.68***	0.72***	0.65***
1940-44	--	--	--	--	--	--	--	--
1945-49	0.90***	1.05***	1.22***	1.30***	1.42***	1.54***	1.40***	1.52***
1950-54			1.19***	1.44***	1.70***	2.10***	1.73***	2.13***
1955-59			1.01	1.22***	1.79***	2.34***	2.10***	2.54***
1960-64					1.62***	2.08***	2.58***	2.79***
1965-69					1.39***	1.62***	2.87***	2.81***
1970-74							2.87***	2.53***
1975-79							2.54***	2.12***
Sample size N	2,840,620	2,623,364	4,056,806	3,949,296	5,052,291	5,213,740	5,826,075	6,434,786