

What is Behind the Brisk Growth of Divorce Rates in Taiwan?

Findings from period and cohort data

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Over the past few decades, drastic increase in crude divorce rates has been observed in East Asia. Countries like Japan, 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). As of 2005, the crude divorce rate of Taiwan ranks the highest in the region. When compared across these six societies, the speed of increase in divorce rates in Taiwan is only second to 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 society became a rapidly growing economy after the 1980s. The latest statistics show that crude divorce rate has decreased slightly since 2003 and reached 2.46 in 2011 (see Figure 2). When compared internationally in year 2005, 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 (see Figure 3).

Recent family research has reported a negative association between education level and divorce risk in many developed societies (Hoem 1997; Raymo, Iwasawa et al. 2004; Härkönen and Dronkers 2006; Martin 2011). This study aims to explore whether the brisk growth in divorce rates over the past four decades in Taiwan is also accompanied by increasing educational differentials. In particular, this study also plans to investigate whether the patterns vary by sex. The current study will start out by using vital statistics data to describe period trend in divorce risk by education and sex across 35 years (1975-2010). Then, analyses using three rounds of census data collected in 1980, 1990, and 2000 will be conducted to examine cohort trends. Finally, using 9 waves of nationwide survey data, this study will also explore the distribution of divorced parents with children to reveal the potential implications of changing family structure on children's life.

Data

1. Vital statistics

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

are obtained from the Statistical Yearbook of the Republic of China from years 1975 to 2010.

2. Census data 1980, 1990, and 2000

Census data from 1980, 1990, and 2000 will be 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 are divorced or are separated from their spouse have to pick the same response category as their marital status. Thus, all analytical findings using census data are for in fact a combination of divorce and separation.

3. Taiwan Social Trend Survey (1998-2006)

The data used for this study come from nine waves of the Taiwan Social Trend Survey (TSTS). The survey was initiated in 1998 and conducted annual till 2006 when it was terminated. The TSTS is a large nationwide cross-sectional survey that aims to explore social changes. The sample sizes of TSTS range from about 15,000 to 36,000 respondents, depending on survey year. Nine waves of data were stacked to increase sample size. The total analytical sample is 92,692 men and 99,712 women born in years 1910 to 1979. The response categories for marital status in the TSTS also put divorced and separated individuals in one category, so that the figures presented are in fact for divorce and separation combined.

Preliminary Findings

Period Trend

This paper started out by calculating GDR since 1975, using annual divorce counts by sex and education divided by the total population age 15 and above over 35 years. GDR were calculated in a 5-year interval between 1975 and 2000 and then annually afterward. Figure 4 shows that prior to 1995, there is barely any educational gradient in divorce risk for both men and women. The years between 1995 and 2000 are the period when educational differentials become evident. Both college educated men and women have the lowest rates of divorce in years after 2000, with rates hovering around 4 divorces per 1,000 populations. The group with the highest divorce rate for both sexes is the high-school-educated, though the GDR for this group of women is higher than men for an entire decade. For both men and women, the years around the millennium appear to be the “watershed” when divorce rates move from similar to divergent across educational groups.

Cohort Trend

Next, divorce/separation trend are examined from a cohort perspective with three rounds of decadal census data from 1980 to 2000 in Taiwan. Figure 5 presents the percentage of

divorced/separated men and women ever in union across cohorts for three census years. In 1980, men born in the cohorts of 1910 to 1964 show a decreasing propensity to divorce/separation, whereas women in these cohorts have very similar level of divorce/separation percentages. For the 1990 census, divorce/separation percentage for women in the pre-1930 cohorts remain very similar to the levels observed in the 1980 census, but started to increase for cohorts born after 1930. Men of the cohorts after 1920 have much higher divorce/separation rates than those reported in 1980 census. For both sexes, a bulge in divorce/separation trend is found for the late 1940s and 1950s cohorts. As for the 2000 census, percentages of divorced/separated men and women reached an all-time high for the late 1940s to early 1960s cohorts, with peak at the 1950-54 cohort for men and 1955-59 for women. Overall, trend for cohorts born prior to 1930 tend to be more erratic across these census years, because differential mortality risks for married, divorced, and single individuals at older ages need to be factored in.

In Figure 6, the census data are further analyzed across education levels by sex for divorce/separation risk. During the 1980 census year, educational gradient is not yet observed for men. All educational levels have quite similar risks across cohorts, although an early sign for a diverging trend seems to emerge for men of the 1940s cohorts. For women, a somewhat positive educational gradient is observed for cohorts born prior to 1945, though women with high school education have higher divorce rates than those with junior college education. The pattern converged for the 1945-49 cohorts. As one moves to the 1990 census plots, a clear negative educational gradient in divorce risk was established for men born after 1945. Such a negative association between education and risk of divorce only appear for women born after 1950. Finally, the plots for census 2000 make it clear that the trend found in the 1990 census data is further intensified. Furthermore, the gap between educational groups for men continue to expand for younger cohorts, as college-educated men become less likely to divorce and the least educated men more likely to part their spouse. For women, the gaps between educational groups stay somewhat similar, with all groups becoming less likely to divorce for cohorts born after 1960.

Finally, logistic regression models presented in Table 1 further supported the findings in Figure 6. A negative educational gradient in divorce/separation risk for both men and women first emerged in the 1990 census and was further widened in the 2000 census data.

Preliminary conclusion and future analyses

The findings here demonstrate that as Taiwan go through the second demographic transition over

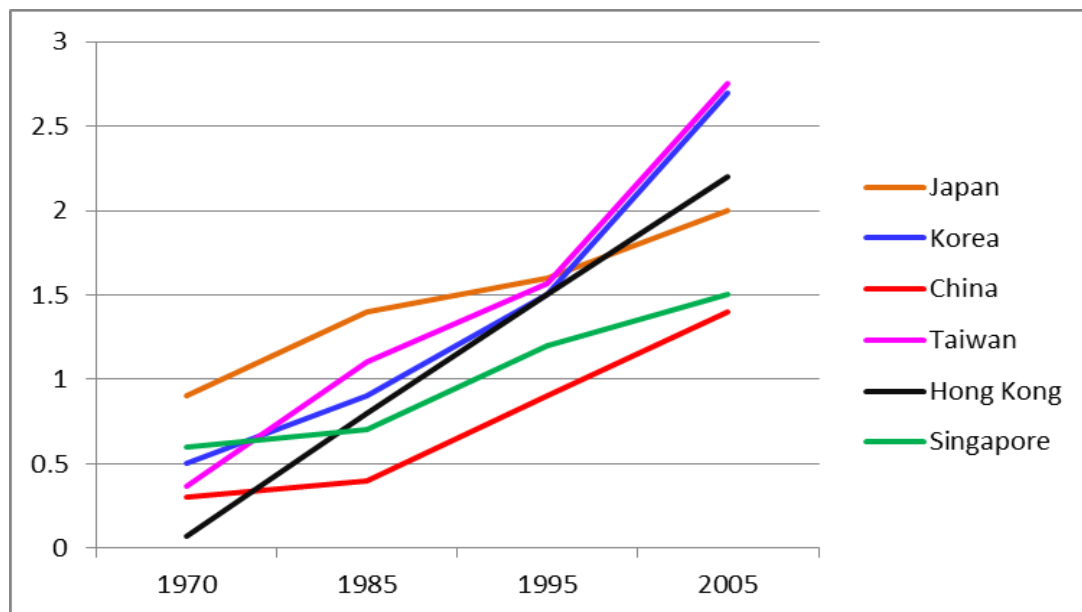
the past decades, rapid changes in family behaviors such as an ultra-low period total fertility of .89 observed in 2010, decreasing first marriage rates, and drastic increase in divorce rates have been reported. In particular, the drastic increase in divorce rates mask the fact that social inequality is expanding across educational lines—the least educated are becoming more vulnerable to union instability and so do their children. The decade before and after the millennium emerge as two critical periods, as educational gap in divorce risks for those with and without college education go from nearly non-existent to a two-fold difference. Cohort analyses with the census 2000 data indicate that men and women born in the 1950s experienced the highest divorce rates than other groups. The good news is that younger cohorts seem to have lower divorce rates than these “forerunners,” although the negative educational gradient is expanding for the younger generations.

The figure and tables presented in Appendices 1 to 3 show that the stacked 9-year survey data from the TSTS are representative of the population circa year 2000, as the statistics are very similar to those found in census 2000. The next step of this study is to make use of the information on dependent children reported in the TSTS data to examine the implications of the parental divorce on children’s lives. In addition, changes in educational composition of different cohorts will also be taken into account, so that divorce risk across cohorts can be compared more precisely.

References

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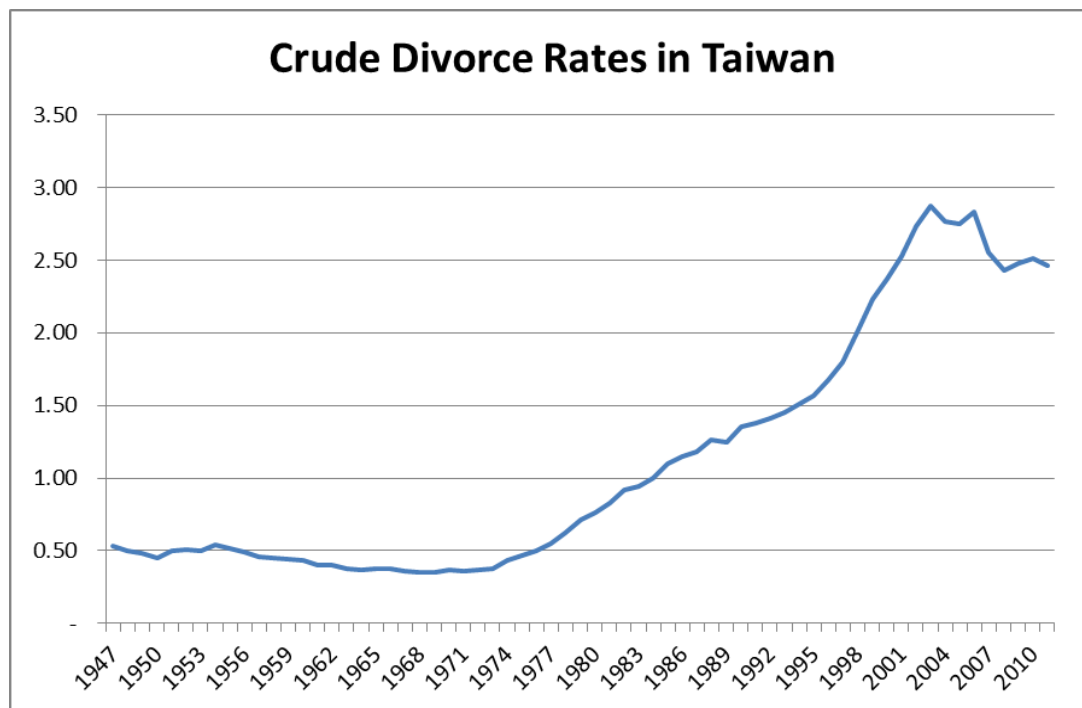
Figure 1. Crude divorce rate (per 1,000 population) in six Asian societies



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

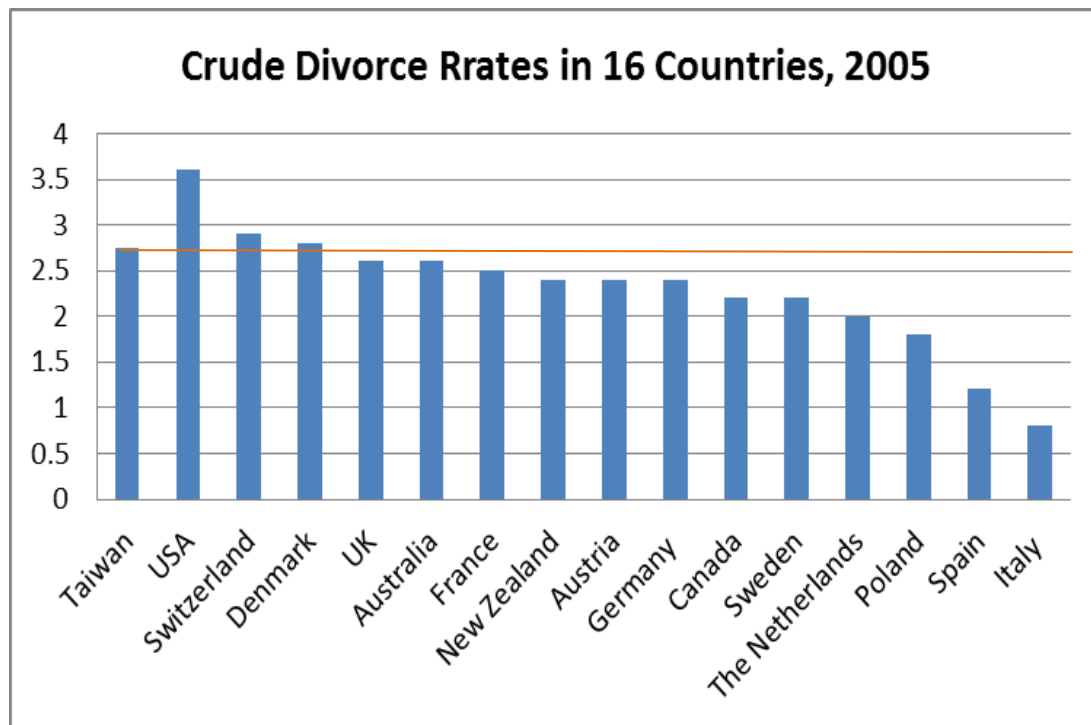
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Figure 2. Crude divorce rate (per 1,000 population) over six decades in Taiwan



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

Figure 3. Crude divorce rates in 16 industrialized countries, 2005



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

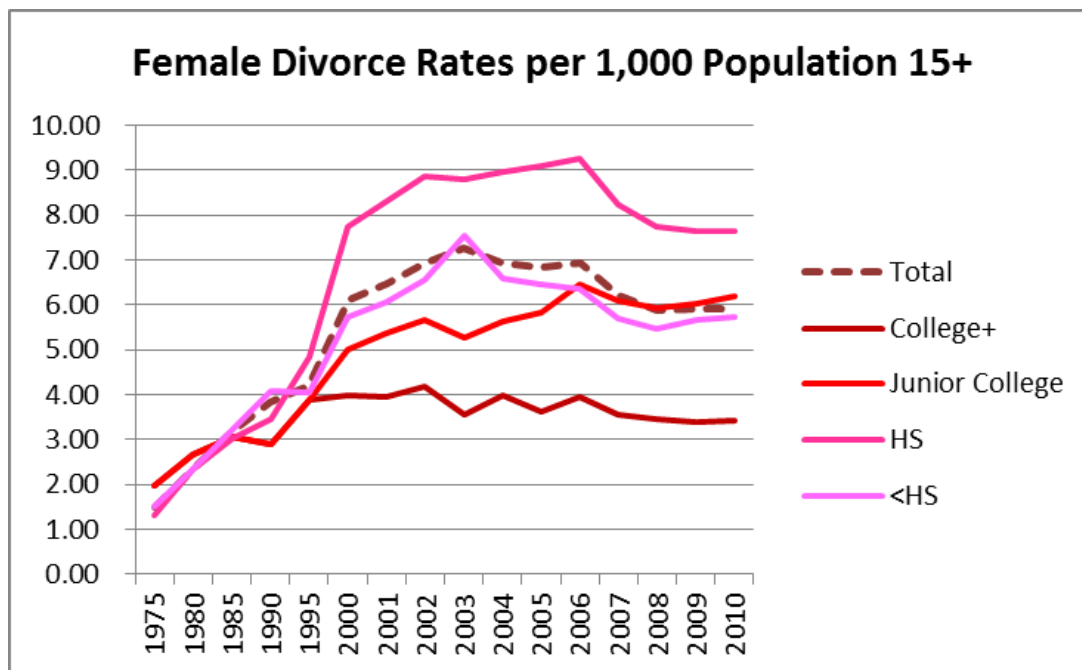
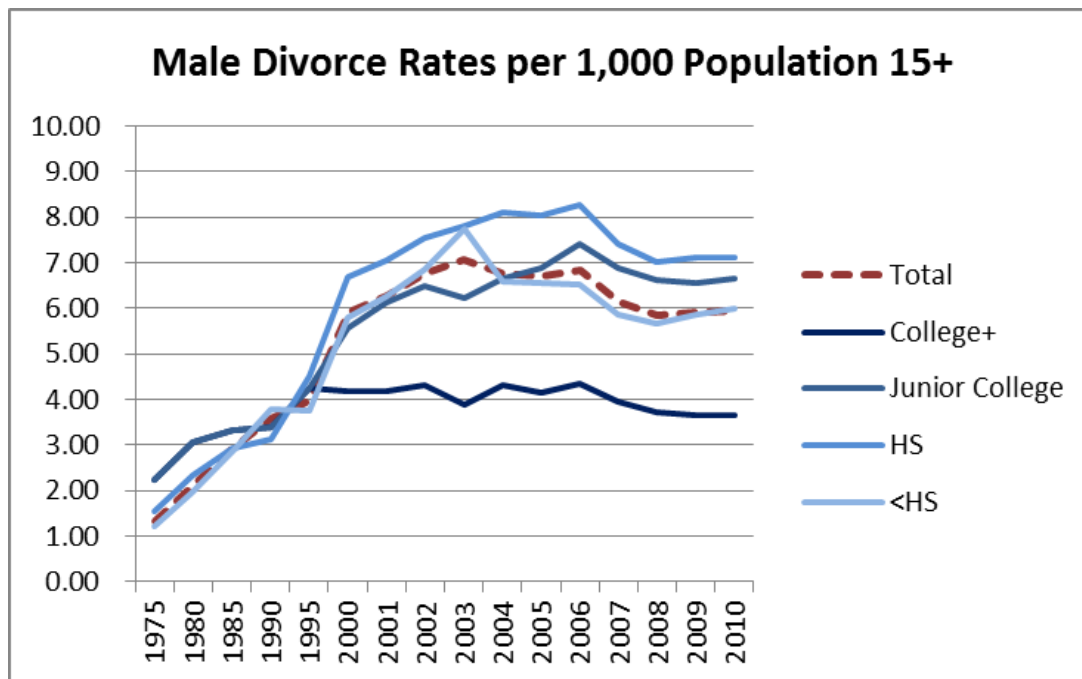


Figure 5. Percentage divorced/separated across cohort by census year, 1980-2000

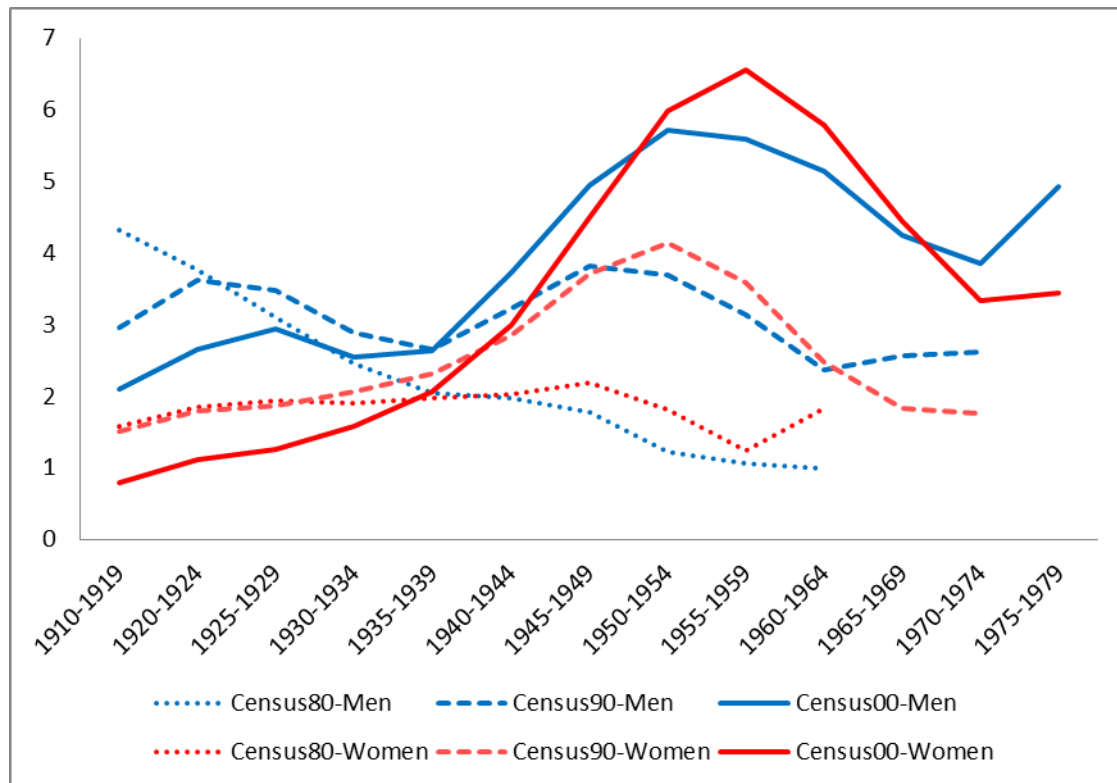


Figure 6. Cohort divorce/separation % trend for those ever in union across census years

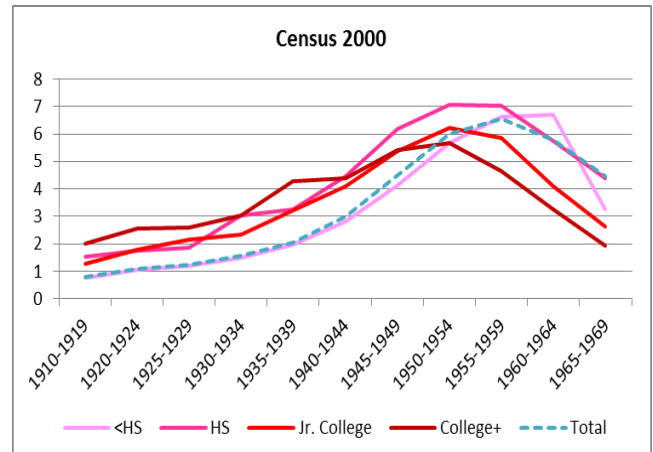
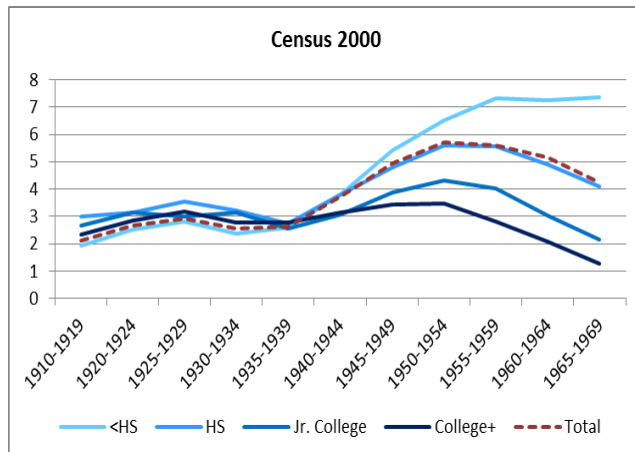
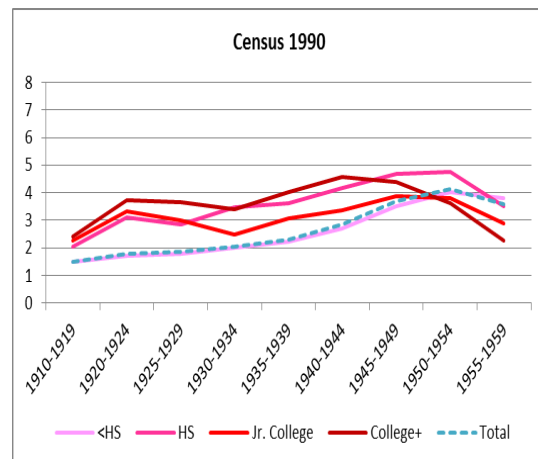
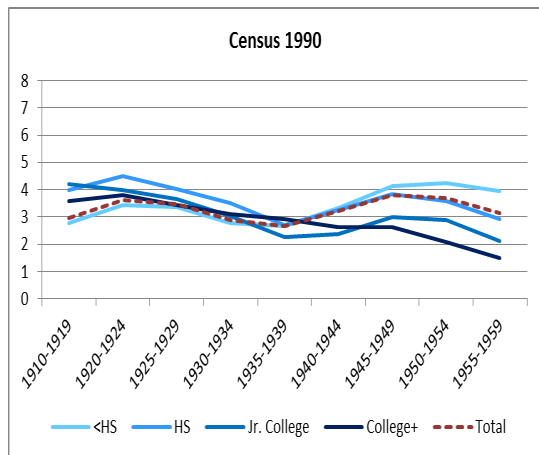
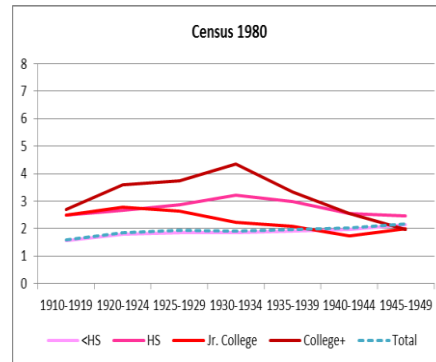
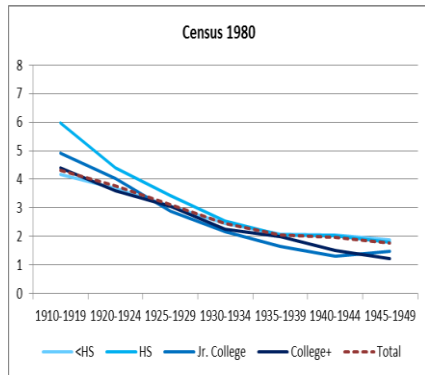
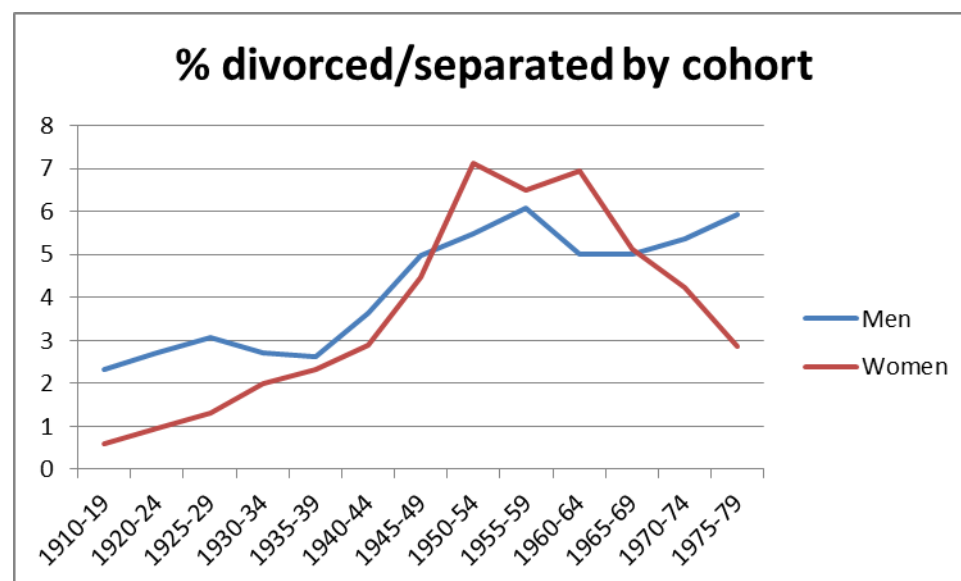


Table 1. Odds ratios of divorced/separated men and women in three census rounds in Taiwan

	1980		1990		2000	
	Men	Women	Men	Women	Men	Women
Education (ref. <HS)						
HS	1.06***	1.08***	0.89***	1.01	0.74***	0.96***
Jr College	0.88***	0.82***	0.69***	0.84***	0.49***	0.66***
College+	0.86***	0.92**	0.62***	0.80***	0.40***	0.59***
Cohort (ref. 1940-44)						
1910-19	2.25***	0.78***	0.90***	0.52***	0.54***	0.26***
1920-24	1.95***	0.91***	1.11***	0.62***	0.70***	0.36***
1925-29	1.59***	0.95**	1.07***	0.65***	0.78***	0.40***
1930-34	1.25***	0.94***	0.87***	0.71***	0.65***	0.51***
1935-39	1.04**	0.97	0.80***	0.80***	0.68***	0.67***
1945-49	0.90***	1.08***	1.23***	1.32***	1.42***	1.55***
1950-54	0.61***	0.89***	1.21***	1.48***	1.72***	2.13***
1955-59	0.52***	0.60***	1.03**	1.28***	1.81***	2.38***
1960-64	0.49***	0.51***	0.76***	0.87***	1.64***	2.13***
1965-69			0.80***	0.64***	1.42***	1.66***
1970-74			0.79**	0.61***	1.27***	1.24***
1975-79					1.47***	1.21***
Sample size N	3,639,080	3,864,960	4,684,461	4,998,006	5,488,957	6,040,389

**Appendix 1. Percentage of divorced/separated men and women ever in union by 5y cohort
(Taiwan Social Trend Survey, 1998-2006 combined)**



Note: Percentages are calculated by number of divorced/separated individuals divided by number of married, divorced/separated, and widowed individuals in a given cohort.

Appendix 2. Percentage distribution of men and women ever experienced divorce/separation by cohort (TSTS 1998-2006 combined, weighted data)

	% Ever Divorced/Separated	
	MEN	WOMEN
1910-19	2.31	0.58
1920-24	2.72	0.94
1925-29	3.08	1.32
1930-34	2.72	1.99
1935-39	2.62	2.32
1940-44	3.65	2.90
1945-49	4.99	4.48
1950-54	5.48	7.14
1955-59	6.07	6.49
1960-64	5.01	6.95
1965-69	5.00	5.14
1970-74	5.36	4.23
1975-79	5.94	2.86

Appendix 3. Odds ratios of logistic regression predicting the experience of divorce/separation by sex (TSTS 1998-2006 combined, weighted data)

	Men	Women
Education (ref. <HS)		
HS	0.74***	1.14*
Jr College & College	0.44***	0.88†
Grad. Sch	0.26***	0.63*
Cohort (ref. 1940-44)		
1910-19	0.62†	0.21***
1920-24	0.75	0.32**
1925-29	0.83	0.45**
1930-34	0.73*	0.68*
1935-39	0.69**	0.80
1945-49	1.48**	1.57***
1950-54	1.70***	2.55***
1955-59	1.99***	2.28***
1960-64	1.71***	2.45***
1965-69	1.79***	1.77***
1970-74	1.93***	1.41**
1975-79	1.97***	0.90
Survey Year (ref. 1998)		
1999	0.74**	0.66***
2000	1.08	1.00
2001	0.89	1.01
2002	0.96	0.99
2003	0.93	1.06
2004	1.29*	1.32*
2005	0.95	1.10
2006	1.20†	1.22*