The Development of Cohort-Based Marriages and Divorces Statistics

By
Koh Wee Ling and Wong Kwok Wing
Strategic Resource and Population Division
Singapore Department of Statistics

Introduction

Singapore has a sound vital statistics system where yearly records of marriages and divorces are available from the *Registry of Marriages* (ROM), *Registry of Muslim Marriages* (ROMM), *Family Justice Courts* and *Syariah Court*.

Based on these administrative records, the *Singapore Department of Statistics* (DOS) compiles and releases an annual report titled "Statistics on Marriages and Divorces"[1]. This publication contains analysis on the marriage trends and characteristics of grooms and brides based on period data. It also highlights the nature of divorces and characteristics of divorcees in the reference year.

DOS has developed statistics on dissolution of marriages among marriage cohorts in Singapore and the data are published via the *Ministry of Social and Family Development* (MSF)'s paper on "Dissolution of Marriages Among Cohorts 1987-2012"[2] as well as in the Ministry of Finance's Budget Book[3] and Singapore Public Sector Outcomes Review[4] publications.

The new cohort indicator complements the marriage and divorce period indicators by providing insights on the trends in stability of marriages by marriage

cohorts and their profiles, thus giving a complete picture of the number of marriages ending in divorce or annulment.

This article describes the methodology used to develop the cohort indicator, the data coverage and limitations. It also presents some key trends in marriage cohort dissolution rates in Singapore.

Use of Period and Cohort Indicators for Demographic Events

Period data describe demographic events that have occurred within a fixed period of time, such as during the year. For example, divorces or annulments registered in 2013, regardless of when the couples were married.

On the other hand, cohort data reflect the demographic events that occur to a specific cohort at various reference periods. For example, divorces or annulments which occurred by end-2013, among couples who had registered their marriage in 2008.

Compared with collecting period data, more time and effort is required to track cohort data longitudinally. By tapping on the rich administrative sources in Singapore's vital statistics system, we are able to track

---

1   http://www.singstat.gov.sg/publications/publications-and-papers/marriages-and-divorces/marriages-and-divorces
2   http://app.msf.gov.sg/Portals/0/Summary/publication/FDG/Statistics%20Series%20-%20Dissolution%20of%20Marriage%20Cohorts.pdf?timestamp=1427069824645
3   Financial Year 2015 Expenditure Estimates: Ministry of Social and Family Development.
    (http://www.singaporebudget.gov.sg/data/budget_2015/download/23%20MSF%202015.pdf)
    Key performer indicator under "Strong marriages and family ties" – Cohort Divorce Rate.
4   2014 Singapore Public Sector Outcomes Review. (http://www.mof.gov.sg/portals/0/SPOR%202014/SPOR%202014.pdf)

couples in each marriage cohort and estimate the cumulative proportion of marriages that had dissolved locally for different marriage cohorts.

Methodology

Creation of Statistical Dataset on Marriage Cohorts

Records on marriages registered in Singapore under the Women's Charter and Administration of Muslim Law Act are obtained from the ROM and ROMM respectively. Data on divorces and annulments granted in Singapore under the Women's Charter are obtained from records maintained by the *Family Justice Courts*.

As for divorces under the Administration of Muslim Law Act, divorce records are obtained from the register kept by the *Syariah Court* while records on the revocation of divorces are obtained from the ROMM.

Persons who marry in Singapore are issued a marriage certificate that carries a certificate number. This marriage certificate number has to be reported by the couple if they were to subsequently divorce in Singapore. A statistical dataset on marriage cohorts is developed through the following steps:

1.   All the available marriage records are matched with the divorce and annulment records through a set of unique identifiers. The marriage year

is used together with the marriage certificate number as the unique identifier. If the information on marriage certificate number is not available, the marriage date is used together with the couple's personal details as the unique identifier.
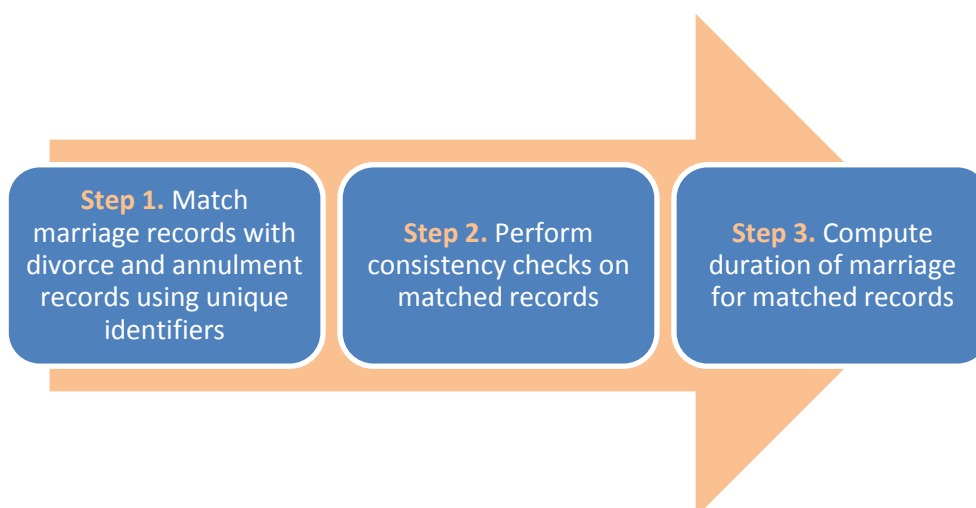
2.   Marriage records that are successfully matched with a divorce or annulment record using the unique identifiers are then passed through a series of automated checks to ensure consistency in the information. For example, the date of divorce or annulment should fall after the date of marriage.

3.   For marriage records with a matched divorce or annulment record, the duration from marriage till the dissolution of the marriage is computed based on the date of marriage and date of divorce or annulment.

Computation of the Cumulative Proportion of Dissolved Marriages

Data on the cumulative proportion of dissolved marriages by marriage cohort and duration of marriage can be compiled for the 1987 marriage cohort onwards. This is achieved through the following steps:

1.   The marriage records are first segregated into the different marriage cohorts based on the year of marriage.

Step 1. Match marriage records with divorce and annulment records using unique identifiers

Step 2. Perform consistency checks on matched records

Step 3. Compute duration of marriage for matched records

2.   The number of dissolved marriages is then totaled for each category on duration of marriage. The duration of marriage categories are presented in the form of "before xth anniversary from date of marriage".

Take for example a marriage that was contracted on 1 Jan 1987 which subsequently ended in divorce on 1 Jun 1990. Since the divorce took place after the 3rd wedding anniversary (1 Jan 1990) but before the 4th anniversary (1 Jan 1991), it will be reflected in the cumulative dissolution statistics as a dissolved marriage from the category "before 4th anniversary" onwards.

3.   Finally, the cumulative proportion of dissolved marriages for each marriage cohort and duration of marriage category is calculated using the following formula:

> Cumulative proportion of dissolved marriages of marriage cohort m at duration of marriage x
>
> $$= \frac{\text{Cumulative number of dissolved marriages in marriage cohort } m \text{ at duration of marriage } x}{\text{Number of marriages in marriage cohort } m}$$
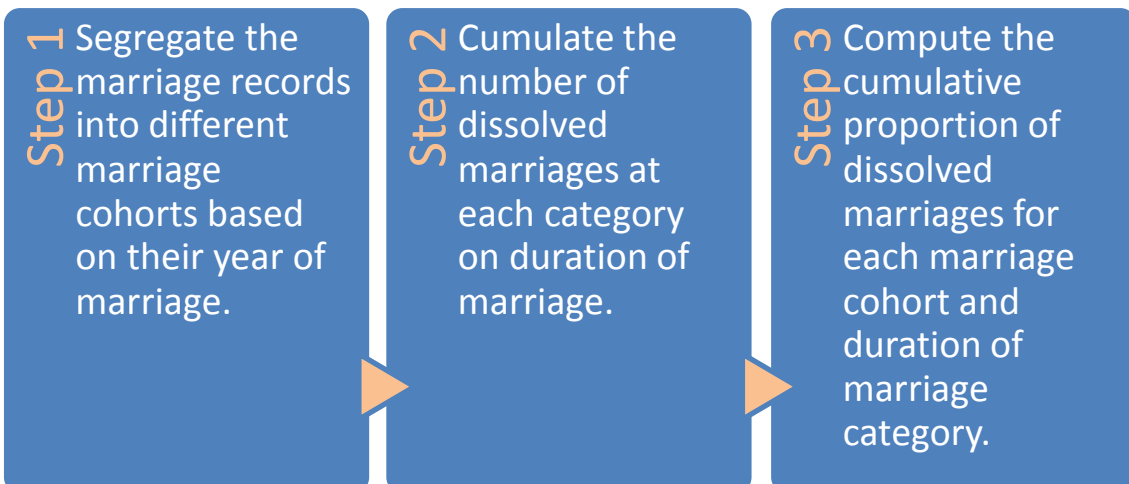
Data Coverage

Resident Marriages

The analysis on the cumulative proportion of dissolved marriages among marriage cohorts is confined to resident marriages, which refer to marriages contracted between persons where at least one party is a Singapore citizen or permanent resident.

Marriages contracted in Singapore between two non-residents are excluded from the analysis due to the difficulty in tracking the marital outcome of such non-resident couples over time. For example, the identification documents used by non-residents to register their marriages may not be unique. In addition, such couples may eventually leave Singapore to reside in their home country and the marriage outcome could not be tracked.

Local Marriages and Divorces

As it is not required by law for residents of Singapore who contract their marriages outside of Singapore to register with the ROM or ROMM, overseas marriages are not covered in the statistics due to the unavailability of data. Similarly, divorces or annulment of marriages that were granted outside of Singapore are excluded in the compilation.

Step 1 Segregate the marriage records into different marriage cohorts based on their year of marriage.

Step 2 Cumulate the number of dissolved marriages at each category on duration of marriage.

Step 3 Compute the cumulative proportion of dissolved marriages for each marriage cohort and duration of marriage category.

Where a couple registered their marriage in Singapore but chose to divorce or annul their marriage in another country, the couple will continue to be reflected as having an intact marriage in the cohort statistics as the overseas divorce or annulment is not captured in Singapore's administrative records.

Treatment of Deaths and Migration

Besides the dissolution of a marriage through a divorce or annulment, an intact marriage can also be affected by the death of spouse(s). Married couples may also leave Singapore through migration. As the purpose is to track the marital outcome of marriage cohorts over time, the size of each marriage cohort is kept unchanged throughout the period of analysis, i.e. couples will not be removed from the marriage cohorts due to death or migration.

Key Data Trends

Among the 1987 resident marriage cohort, 17.8 per cent of marriages had dissolved via divorce or annulment before the 26th anniversary (Chart 1). For the subsequent 1988-2002 marriage cohorts, the proportion of marriages that had dissolved by end-2013 was also about 17 per cent or higher despite the fewer number of years since marriage.

The cumulative proportion of marriages that had dissolved generally rose across marriage cohorts. For the 1987 marriage cohort, the proportion of marriages that had dissolved before the 5th anniversary was 4.0 per cent (Chart 2). The corresponding proportion rose to 6.6 per cent for the 2008 cohort.

Likewise, the proportion of marriages that had dissolved before the 10th anniversary increased from 8.7 per cent for the 1987 cohort to 16.1 per cent for the 2003 cohort.

Similarly, the proportion of marriages that had dissolved before the 15th anniversary went up from 12.3 per cent for the 1987 cohort to 20.3 per cent for the 1998 cohort.

These trends suggest that recent marriages are generally more vulnerable to dissolution compared to the older marriage cohorts.

CHART 1   CUMULATIVE PROPORTION OF DISSOLVED MARRIAGES
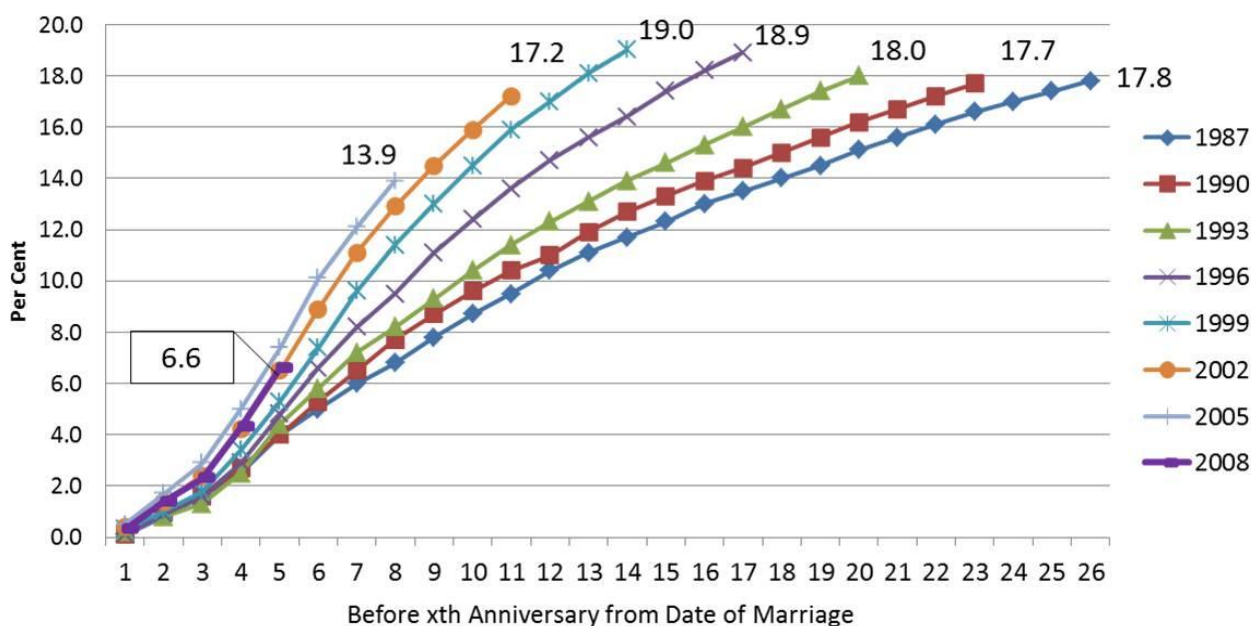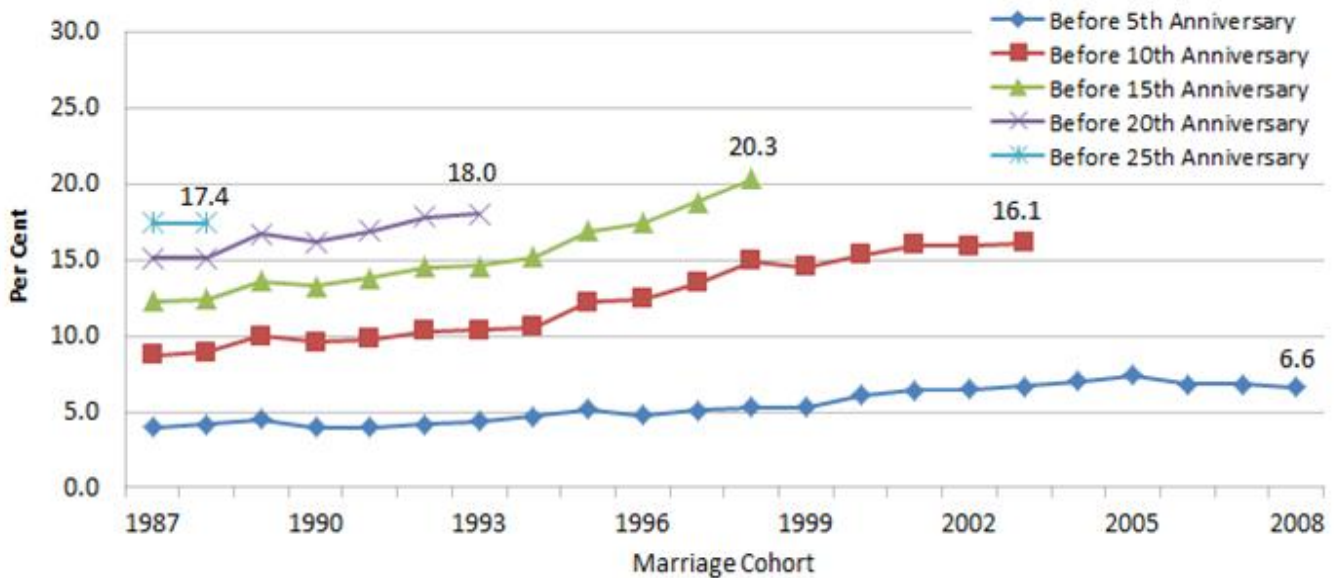BEFORE X^TH ANNIVERSARY

CHART 2   CUMULATIVE PROPORTION OF DISSOLVED MARRIAGES
BEFORE 5TH, 10TH, 15TH, 20TH AND 25TH ANNIVERSARY

International Comparison

Unlike period statistics on marriages and divorces, there are only a few National Statistical Offices that have embarked on cohort studies on marriage dissolution. *Statistics New Zealand* (SNZ) and the United Kingdom's *Office for National Statistics* (ONS) are among those who track such cohort statistics. The methodology we used is similar to that of SNZ and ONS.

Compared to New Zealand and the United Kingdom, the proportions ending in divorce or annulment were generally lower for the older marriage cohorts in Singapore. For example, for the 1987 marriage cohort, 15.1 per cent had dissolved before the 20th anniversary for Singapore, compared with at least 30 per cent for New Zealand[5] and the United Kingdom[6].

However, for the more recent 2005 and 2007 marriage cohorts, about 7 per cent had dissolved before the 5th anniversary for Singapore, closer to the 8 per cent for the United Kingdom.

A longer time trend is needed to ascertain if this convergence with international counterparts would continue when marriages reach their 20th anniversary.

Conclusion

By tapping on the rich administrative sources in Singapore's vital statistics system, DOS has developed a new cohort indicator on the cumulative proportion of dissolved marriages among marriage cohorts through the matching and merging of marriage and divorce records.

This new cohort indicator, which provides an insight on the trends in stability of marriages by marriage cohorts, complements existing period indicators to give a more comprehensive overview of the marriage and divorce trends in Singapore.

Data based on the new indicator showed that the cumulative proportion of marriages dissolving before specific anniversaries has generally increased across successive marriage cohorts in Singapore.

---

5   Data for New Zealand refer to the latest available for the 1987 marriage cohort.
    URL link: http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/demographic-trends-2012.aspx
6   Data for the United Kingdom refer to England and Wales.
    URL link: http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-328994