Marital Stability in Canada

Marcus Esteban

MacEwan University

**ABSTRACT**

Marital stability has been deeply explored in the American population; there has not been a comprehensive study of marital stability in Canada. This paper studies the validity of Becker’s instrumental theories in the exploration of marriage behavior as well as the business cycle’s effects on the decision to divorce. Using Statistics Canada’s Census Public Use Micro Data files (PUMF), it is found that the divorce rate is pro-cyclical, Becker’s theory applies similarly to the Canadian population and reveals other features of marriages in Canada.

**INTRODUCTION**

Economics is known for studying human behavior in the market context. In the market, firms and consumers seek to maximize something. A firm seeks to maximize economic profit and a consumer maximizes utility. In the case of marriage elements of both is found. Like a firm, family members—primarily parents—work to maximize the family’s wealth; like a consumer, parents distribute and consume this wealth somewhat like a market where these distributions are non-constant and are based on interpersonal leveraging and, unlike a market, love (Becker, 1973).

Recent studies in marital stability have been based on the so-called “Great Recession” of 2008 that was set-off by a housing price bubble. Relevant literature revealed that unemployment, house prices, mortgage delinquency, foreclosure rates and other similar variables affect marital stability (Amato & Beattie, 2011; Chowdhury, 2013; Cohen, 2014; and Harknett & Schneider, 2011). Based on these findings it is found that generally marital stability is positively affected by recessionary effects. This research aims to determine, through regression analysis, whether Becker’s theory of marriage is reflected in Canada’s marriage behavior and whether marital stability shifts in the economy positively affect marital stability in Canada in the same way it does in the U.S.; and if it does, what other conclusions can be made.

**LITERATURE REVIEW**

**Marriage Theory**

Becker’s (1973 & 1974) seminal work began the formal economic exploration of marriage. He starts with two assumptions: (1) the decision for two parties (as marriage is decided by either the parents or participants, or both) to marry is contingent on the expectation that there is gains in utility resulting from marriage and (2) the vast quantity of people seeking marriage imply that the pool of marriage-ready people are perfectly competitive. Further, Becker (1973) assumes that the utility gained from marriage is dependent on commodities produced by the household; these commodities are produced by household members’ time and market goods and services. These commodities are market goods and services either transformed or experienced with the family. An example of a transformed family commodity would be spaghetti alfredo made by the primary homemaker, and a shared experience is going to a hockey game with family. Theoretically, because of love and caring, these commodities provide more utility than normal goods and services because of the time investment of family members; hence a household, composed of related individuals, are better off together. Becker further asserts that a family shares an indifference curve, and their utility in this curve is maximized by the distribution and consumption of family commodities. Thus, the household’s objective is to maximize commodity production and members’ marginal utility (Becker, 1973 & 1974).

Proceeding from (2) it is assumed that generally people’s mating preferences are assortative; people look for mates that have similar traits. But, people are complex. Thus, people select for physical traits such as height, ethnicity, and body shape; and non-physical traits such as education, intelligence, religion, earnings potential, etc. This is consistent with what is observed in nature; animals are instinctively driven to select for advantageous traits to birth successful offspring. For humans, advantageous traits are not only physical, they are also emotional, behavioral, psychological, and economical. Becker supports this claim through mathematical models. But, it is also supported by empirical findings (Bumpass et al., 1991; Edwards, R., & Roff, J., 2016; Lehrer, E., & Chen, Y., 2013; Lehrer, E., & Chiswick, C., 1993). Bumpass et al. (1991); Lehrer and Chiswick (1993); and Edwards and Roff (2016) all have results that show religious homogamy is positively associated with marital stability. They find that differences in values cause marital friction. Lehrer and Chiswick (1993) explores further; there isn’t much variance in divorce rates of different intra-faith marriages except for Mormons, who have the highest stability, and non-religious/atheists, who have the lowest stability. Lehrer and Chen (2013); and Edwards and Roff (2016) found that age homogamy and educational homogamy between partners is also positively related to marital stability.

Most traits that are considered when judging a possible mate are unique—for instance, you can’t substitute height for education—in their role in commodity production. A crude example: a man has a wife with a delicate figure who was a Fine Arts major in Dance. He enjoys her dancing; his enjoyment of it is enhanced by her figure, her education, and the fact that she is his wife. Suppose instead she produces poetry; her figure, her education, nor the fact that she is his wife enhances the quality, and thus his enjoyment, of her poems in the same way they do for her dancing.

Selection of most traits is assortative; selection of substitutable traits is non-assortative. An example of a crucial but substitutable trait is market wage. Recall that Becker’s (1973) theoretical framework imply that the maximization of commodity production is the family’s goal; time spent working, wage, and property income constitute the monetary part of the function and consequently domestic work constitutes the non-monetary part. Thus, domestic work productivity in a single-earner home is a substitute for market wage. Naturally, Becker concludes that men select for women that have a lower market wage or is specialized in non-market labor; men prefer women who have high domestic productivity (Becker, 1973 & 1974).

**Divorce Theory**

Following up on his theoretical work Becker, Landes, and Michael (1977) applies (1) further in the context of divorce. Becker (1973) asserted in his work in 73’ that marriage occurs if expected utility from marriage is greater than expected utility without marriage. He assumed perfect information and did not account for the reality, that despite the length of “searching”—including dating and living together—you cannot anticipate the intricacies of married life because you do not have perfect information of your spouse or yourself. In this work, Becker et al. (1977) assert that divorce happens when the actual utility derived from the marriage, revealed through the marriage experience, is lower than the combined utility of the individuals in the couple living separately. People do not have perfect information; therefore, they operate and make decisions based on all information accumulated. Thus, the probability of divorce increases the lower the perceived value of the gain from marriage, which will fluctuate as new information becomes available (Becker et al, 1977).

In addition to imperfect information, probability plays a role in finding a suitable match. Building on Becker’s 1974 work, Becker et al (1977) assert that age at first marriage is a strong predictor of divorce. Empirically, it is found that the younger the age at first marriage the higher the probability of divorce (Bumpass et al., 1991; Lehrer, E., & Chen, Y., 2013). Becker et al. (1977) believes this happens because people who marry young hold unrealistic beliefs and expectations about the matches they found and themselves. On one hand, there are people that are optimistic; they believe they have already found the best partner for them. On the other hand, there are people that are pessimistic; no matter how much longer they search they will not find a more suitable match. Presumably, the first is more likely with younger marriages. Previously stated are unrealistic beliefs/expectations about one’s self and chosen partner. The optimistic belief of a best-fit match corresponds to what Becker et al. call a lack of “intensive search”, which is a lack of depth in assessing a partner; the pessimistic belief of a nil possibility of finding a more favorable match corresponds to what Becker et al. call a lack of “extensive search”, which is a lack in the number of observations—not enough possible partners have been assessed (Becker et al., 1977). They argue that people, as their search has not concluded after their planned age at marriage will relax their search standards and marry an unsuitable match. This is more relevant to women as the possibility of bearing children is a greater concern to women due to biology.

**Causes of Instability and Sex-specific roles**

From the same work, Becker (1973 & 1974) explores a lot of topics including polygamy, spouse selection, and speculations on the topic of divorce. He infers that perceived importance of investments specific to a marriage (e.g. children with partner and knowledge of partner) dis-incentivize dissolution; also inferred is that the degree at which a partner is convinced the marriage is a mistake is the extent of that partners’ incentive to divorce (Becker, 1974). Becker (1974) claims that the belief the marriage is a mistake is due to poor luck during search; they, in frustration with the spent resources in searching or due to search pessimism, chose a partner hastily or used a flawed methodology in choosing. Still another assertion from Becker (1973), is that an increase in the wife’s market wage, ceteris paribus, causes friction in the marriage as she would like to increase her market participation but she is expected to do domestic work. This is in line with the traditional view of gender roles for heterosexual couples. Men are expected to provide income and women are expected to be homemakers; deviation from the expectation causes strife.

More contemporary research (Bumpass et al., 1991; Cooke et al., 2013; Raz-Yurovich, 2011) reveal whether Becker’s assertions is true decades later. Bumpass et al. (1991) found that marital instability is greater for marriages where women had equal or greater wages than their counterpart despite the eroding of gender roles. Unemployment in men or unemployment of both but not unemployment of women early in a marriage is significantly related to instability. Cooke et al. (2013) found that in, 11 western countries, if an increase in wives’ income increased the likelihood of divorce; they found that in all but the U.S. the adverse effect Becker predicted was non-existent or negligible. The difference between the U.S. and the other nations is the existence of policies and programs that support women’s employment and the family (e.g. maternity and/or paternity leave). Raz-Yurovich’s (2011) research of Israelis found that there is asymmetry in work expectation in men and women; although employment stability in men and women promote stability, women’s market labor hours decrease stability.

Thus, it appears that women’s increasing labor participation is inevitable; even in less developed nations such as Israel, women are expected/required to work. However, it is apparent that there is a lag between the ideological paradigm shift away from gender roles and actual restructuring of households to conform to this idea. Different countries are at different stages in their acceptance of this reality as assessed by Cooke et al. It is reasonable to think that the expectation of women as the primary homemakers is in a steady decline; the presence of socio-economic policies and programs only aid, not force, this transition. In Becker et al. (1977), one conclusion is that an increase in expected earnings of men positively correlates with stability in first marriages. It further illustrates that it is due to the reality of the time, the economic inequality between sexes and sex-specific expectations, that men and women’s wage differentials are significant determinants of marital dissolution.

Prior research (as cited in Becker, 1973 & 1974) has found empirically that controlling for education, the likelihood of divorce is negatively related to income; and surprisingly, the higher a person’s income or expected lifetime earnings is, the younger they marry. Kinnunen and Pulkkinen (2003), psychologists, attempted to measure both marital stability and marital satisfaction in the same model. In their interdisciplinary work, they found that in addition to their psychological findings, early marriage age for women, employment instability and childlessness for men are all determinants of marital dissolution. These conclusions appear to contradict. Younger marriage age in women is negatively related to stability whilst higher income leads to lower-age marriages. But they do not, Becker et al.’s (1977) conclusion that high income leads to early marriage may only be specific to males, as the disparity in male and female wages and labor force participation rates was high at the time.

**Inequality, Stability, and Satisfaction**

Marital satisfaction and marital stability are not interchangeable, while both are affected by the same factors like income, age of marriage, employment, etc., a marriage does not have to be happy to be stable. Amato and Beattie; Harknett and Schneider; Chowdhury; and Cohen examine the effect of recessions on marital stability using income, unemployment rates, foreclosure rates, and mortgage delinquency. Amato and Beattie (2011) sought to assess the longitudinal association between unemployment and divorce; they conclude that prior to 1980, divorce was positively related to unemployment and from 1980 and on, the reverse. Harknett and Schneider (2012) used unemployment and mortgage delinquency data from 1998 – 2009 to determine what effects recessions had on marital stability; they found that mortgage delinquency did have a positive effect on stability and unemployment was not significant. Chowdhury (2013) used women’s transitory income (Incomei,t – Incomei where i is a state and t is the year) to regress against divorce; he found that higher transitory income makes divorce likelier—divorce is pro-cyclical (runs in tandem with economic fluctuations). Cohen (2014) analyzed a sample of about 2.8 million U.S. women in 2008-2011 and found that divorce rates dipped during the recession; but the divorce rates did not match the state-specific unemployment rate. They all find that divorce rates dropped due to recession symptoms. Taken together they conclude that after 1980, marriage and divorce was costlier; general economic uncertainty, rather than state-specific conditions, determine the likelihood of divorce.

Harknett and Schneider (2012) and Cohen (2014) both found that there is a difference in effect when considering education; Harknett and Schneider found less educated to have lower probability of divorce and Cohen found the opposite. This discrepancy may be explained by the differences in their data. Harknett and Schneider’s data considered a specific population whilst Cohen’s data was more general. Cohen’s finding seems more reasonable as the cost of education in the U.S. is high and on the rise, economic hardship hurts the student loan burdened population more than others. Cohen (2014) found that foreigners and pacific islanders are least likely to divorce and Black people, American Indians, Hispanics and non-Hispanic whites are most to least likely to divorce in that order.

Generally, marital stability is desirable as children are most vulnerable to the adverse effects of divorce. However, Harknett and Schneider (2012) add that while this may be true for a stable low-conflict household, it is worth considering whether suffering a divorce or remaining in a high-conflict household is worse for development.

**The Case for Canada**

Research on the relationship between marital stability and recessions have not been done in Canada. However, there is data and historical changes that provide preliminary evidence of the same-as-the-U.S. positive relationship between recessions and marital stability. Looking at Graph 1. and Graph 2. in the appendix, the growth rates of the U.S. and Canada are almost the same; just as their growth rates are similar the relationship between economic factors and marital stability are also the same. Ignoring the data from before 1996, the crude divorce rates and growth rate fluctuations appear to mirror each other. Thus, like Chowdhury concluded, crude divorce rate in Canada looks to be also pro-cyclical in relation to Canada’s growth rate. The divorce rates prior to 1996 were significantly higher than any point after. However, despite the difference in the average divorce rate pre-1996 and post-1996, the divorce rates still mimic the growth rate with low points that sandwich 1986 corresponding to low points in the growth rate.

There are two possible reasons for the generally high divorce rates before 1996 they are: (1) changes in divorce law and (2) increasing women’s labor force participation rate and wages. The last two reforms in divorce law happened in 1968 and then 1986. The 1968 change allowed for more grounds for divorce. Before the act, most divorce cases were due to adultery. The act included abuse, mental or physical, as well as separation for three years as grounds for divorce. The 1986 act added more provisions that modernized the divorce law; the most influential is the change of the separation requirement from three to just one year. Graph 3. shows the incline of women’s labor force participation in Canada. Not shown in the graph but per StatsCan “Women’s earnings more than doubled between the mid-1960’s and the early 2010’s, rising from $15 700 in 1965 to $37 200 in 2010”. Thus, considering that the two occurred simultaneously the higher divorce rates makes sense. Because of the divorce law changes, women or men can file for divorce for less-specific reasons. Women increasingly involved themselves in the labor market and drove up their wages. Earlier in the literature review, in the section Causes of Instability and Sex-specific roles, it was concluded that there is a lag between the philosophical acceptance of socioeconomic changes and practical acceptance, through conforming, of the de-normalization of gender roles. Thus, the high divorce rates were due to increased ease of divorce, and the conceptual threat of women’s increasing economic independence.

**METHOD AND DATA**

For this work, unlike other works, marital stability will not be analyzed by the probability of divorce and separation rather than only divorce. After 1986 in Canada, before every divorce there is a necessary one year of separation before having the divorce. Becker’s theory assumes that marriage formation and dissolution is dependent on income as well as personal characteristics and other characteristics of marriage. That theory, that income is related to marital decisions, is key to the analysis; because of the limitations of the data, only income and a few other variables can be regressed on marital stability. Specifically, the log of income and factor variables time, weeks worked the prior year, whether a person worked full or part time for most of the prior year, and whether a person has any schooling past high school are used for analysis.

Two types of analysis are done. Along with a graphical analysis, simple OLS regression analysis will be done on averages/ratios of the factor variables and income against the crude divorce rate for their census year. As this paper uses seven census years (1981, 1986, 1991, 1996, 2001, 2006, 2011), there are in total only seven observations. The data used for these analyses are found in the Appendix, Table 7 and Table 8. The second type of analysis is binomial Probit regression. These regressions use all observations collected from the censuses. A general regression is run using the natural log of income, a factor variable for age groups, and dummy variables for educational attainment and weeks worked. Then, regressions are run separately for census year. Each of these will be run with both sexes and separately. Separate regressions are run for the four years 1981, 1991, 2001, and 2011. These years have religion data and will be run in similar fashion as the other regression. Other regressions ran are for just the year 1981, and another set for the years 1991 to 2011. These regressions are ran because of the additional variables available in just these specific years.

The data complied comes from the StatsCan census PUMF (Public Use Microdata File); the data is derived from census responses. The data is rough and thus recoded to make the variables uniform throughout all seven census years. Observations collected were ever-married people (has been married at least once), and people who make at least $1 in income. Expected to be in the data set are all people who have not defaulted on debt (income would be negative for some if they are included) and may or may not be employed. In all, there are almost 2 million observations. (N = 1 984 757). Regressions are ran including both sexes and separately. The male sample totals 1 062 853 and the female sample totals 921 904. The census subset with religious data totals over 1 million (N = 1 158 385). The names and more information on the variables are on the table below:

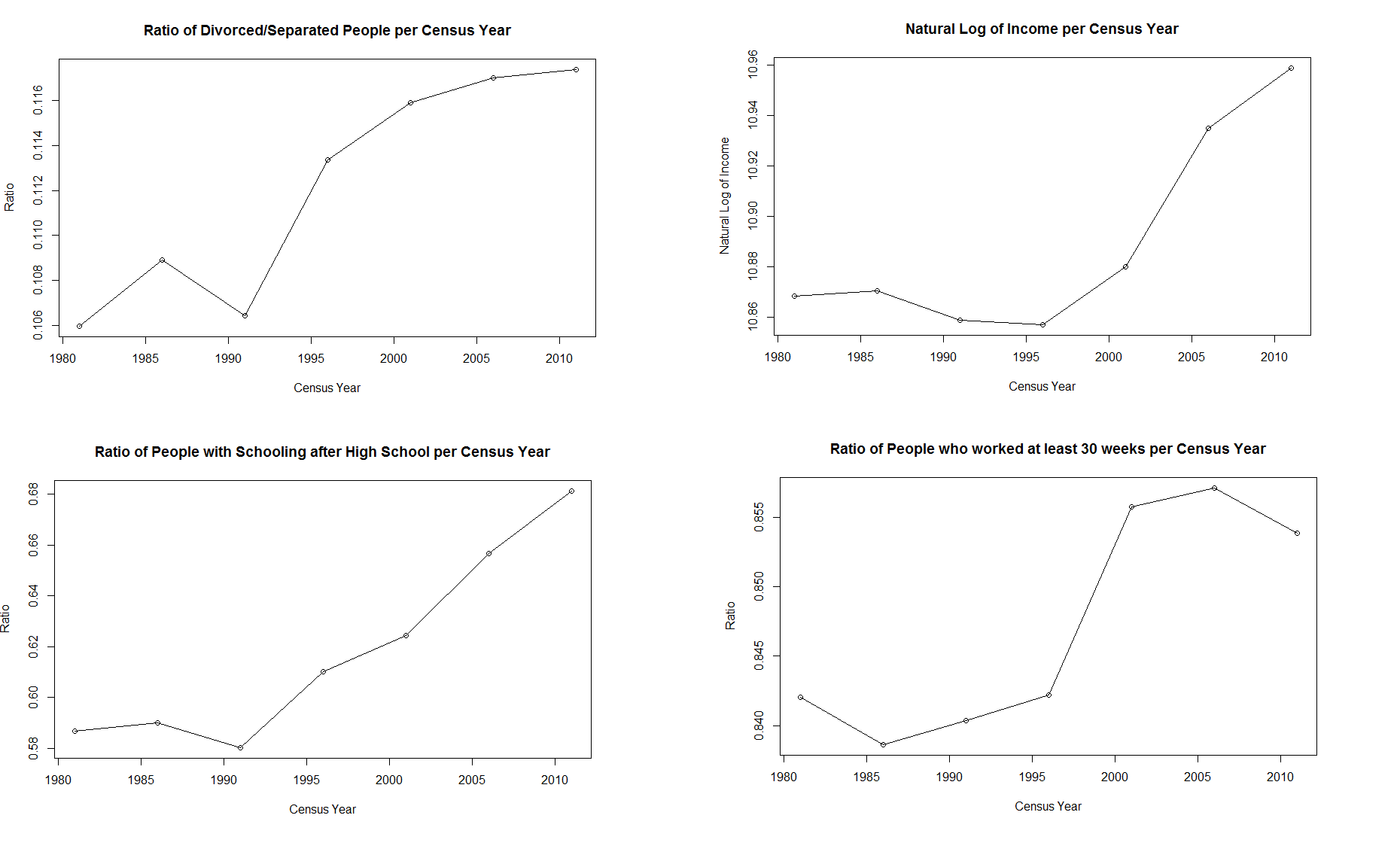
|  |  |  |
| --- | --- | --- |
| Variable (as found in census) | Transformed to | Description |
| prov(p) | bc: if 1, bc: otherwise 0. | Dummy variable for British Columbia |
| ab: if 1, ab; otherwise 0. | Dummy variable for Alberta |
| sk: if 1, sk; otherwise 0. | Dummy variable for Saskatchewan |
| mn: if 1, mn; otherwise 0. | Dummy variable for Manitoba |
| on: if 1, on; otherwise 0. | Dummy variable for Ontario |
| qc: if 1, qc; otherwise 0. | Dummy variable for Quebec |
| ns: if 1, ns; otherwise 0. | Dummy variable for Nova Scotia |
| nb: if 1, nb; otherwise 0. | Dummy variable for New Brunswick |
| nl: if 1, nl; otherwise 0. | Dummy variable for Newfoundland and Labrador |
| sex(p) | sx: if 1 female; if male 0. | Dummy variable for sex |
| marsth(p) | marstat: if 1, D/S; otherwise 0. | M/CL – Married/Common Law, D/S – Divorced/Separated |
| (h)dgree(p) | hsps: if 1, <= HS ; if 0, > HS. | Dummy for educational attainment; HS = High School |
| wkswrk | wkwks: if 1, >=30 w; if 0, < 29 w | Dummy variable for weeks worked; w = weeks |
| relig | nrel: if 1, non-christian, otherwise 0. | Dummy variable for Christian/non-Christian. Available every 10 years; every 2nd census year. (1981,1991,2001,2011) |
| totinc(p) | inc = totinc(p)/gdp defl. | Total income per person is divided by their year’s GDP deflator |
| agegrp | yrsld (0,1,…12) = (20-24, 25-29,…, 80-84). | Observations’ age group. Range of 5 years per grouping. |
| prescp | hask: if 1, has children; otherwise 0. | Dummy variable for whether an observation has kids and is living with them (from 0 – 24 years old) or not. |
| birthpla | org = (0-4). (1991-2011) | Person’s birth region ranging from 0 to 4. 0 indicates Canada as birthplace, 1 is the U.S., 2 is Europe, 3 is Asia, and 4 is other regions (Africa, Other Americas, Oceania etc.). |
| org = (0-7). (1981). | Person’s birth region ranging from 0 to 7. 0 indicates Canada as birthplace, 1 is the U.S. and EU countries, 2 is unaligned Europe (Portugal, Italy, and Greece), 3 is Soviet Europe, 4 is Asia, 5 is Africa, 6 is Central and South America and 7 is other regions. |
| agemar | agpafm (0–7) = (15-19,…,50+) | Observation’s age group. Range of 5 years per group except final group. |
| time | time (1,2,…,7) ~ 1981 to 2011 | Each observation designated a value from 1 – 7; dependent on census year. 1981 is 1, 2011 is 7. Increments of 5 years. Least to greatest. |

The Probit Regression:

E [1 | rincome, factors/dummies] = Probability [Divorce/Separation] = Φ (β1 + β2 log(rincome) + δi I) Where Φ is the probit link function, I is an indicator/dummy/factor variable, β1 is the constant, β2 is the income coefficient, and δ is an indicator/dummy coefficient.

**RESULTS AND DISCUSSION**

**Figure 1.**



As can be gleaned from figure 1, the graphs of the natural log average income and ratios of marital status, educational attainment, and work weeks all generally increased. Only income and education appear to have positive correlation. This is expected as generally more educated people tend to receive higher incomes. Curiously, there seems to be a negative correlation between crude divorce rate and weeks worked (see figure 2). Because of the low number of observations, a time series analysis cannot be done. Thus, a simple OLS is run, the results are shown in Table 1.

**Figure 2.**

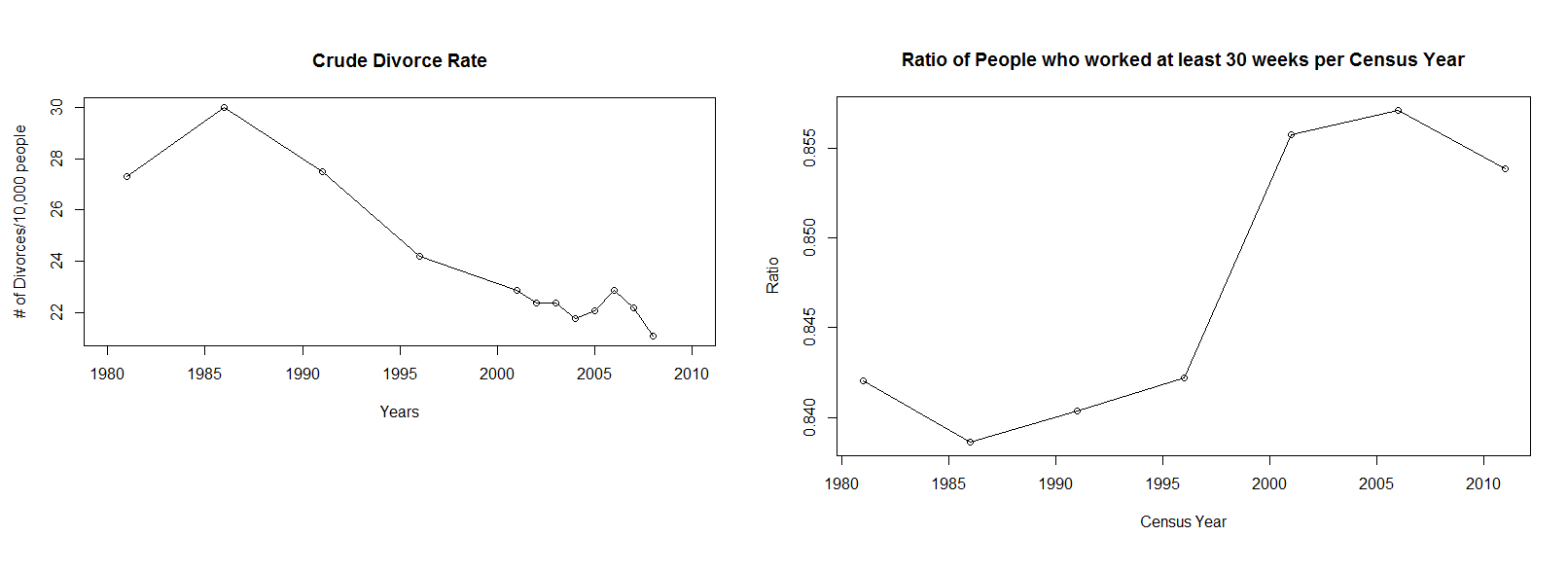


Table 1 supports the assertion that crude divorce rate and wkwks (wrk in it ratio form) have a negative relationship. Further, the significance of this negative linear relationship support the assertion of the pro-cyclical nature of divorce rates. That is, the fluctuation of the divorce rate follow the fluctuations of economic variables, in this case, employment stability.

**Table 1.**

lm(formula = cdr ~ wrk, data = tr)

Residuals:

1 2 3 4 5 6

0.299797 1.969089 -0.004613 -2.745730 0.032369 0.449088

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 281.36 79.24 3.551 0.0238 \*

wrk -302.08 93.66 -3.225 0.0321 \*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 1.711 on 4 degrees of freedom

Multiple R-squared: 0.7223, Adjusted R-squared: 0.6528

F-statistic: 10.4 on 1 and 4 DF, p-value: 0.03212

It is important to understand the determination of statistical significance. A simple understanding is that significance is most affected by the standard error of a statistic. Standard error is the estimate of the standard deviation of a statistic. Generally, it is assumed that if you have a large enough sample size, the statistic measured is normally distributed. That is, there is a most prevalent value, a mean, to the statistic. Further, as found in any statistics textbook, the majority (95%) of the measurements of a statistic lie within two standard deviations of the mean. Because of the massive sample size, the standard error of the statistics measured are tiny. Thus, the hypothesis test of whether the value of a statistic is zero is easily rejected because the estimate of the statistic needs only be two standard errors away from zero.

**Table 2.**

General Models

======================================================================

Dependent variable:

----------------------------------------------------

marstat

(1) (2) (3) (4)

----------------------------------------------------------------------

log(inc) -0.028\*\*\* -0.029\*\*\* -0.080\*\*\* 0.089\*\*\*

(0.001) (0.002) (0.002) (0.002)

yrsld1 0.237\*\*\* 0.225\*\*\* 0.248\*\*\* 0.220\*\*\*

(0.010) (0.012) (0.016) (0.012)

yrsld2 0.409\*\*\* 0.385\*\*\* 0.413\*\*\* 0.403\*\*\*

(0.009) (0.012) (0.016) (0.012)

yrsld3 0.553\*\*\* 0.528\*\*\* 0.553\*\*\* 0.550\*\*\*

(0.009) (0.012) (0.015) (0.011)

yrsld4 0.659\*\*\* 0.628\*\*\* 0.651\*\*\* 0.658\*\*\*

(0.009) (0.012) (0.015) (0.011)

yrsld5 0.718\*\*\* 0.696\*\*\* 0.716\*\*\* 0.715\*\*\*

(0.009) (0.012) (0.015) (0.011)

yrsld6 0.732\*\*\* 0.721\*\*\* 0.712\*\*\* 0.755\*\*\*

(0.009) (0.012) (0.015) (0.012)

yrsld7 0.723\*\*\* 0.715\*\*\* 0.660\*\*\* 0.808\*\*\*

(0.009) (0.012) (0.016) (0.012)

yrsld8 0.698\*\*\* 0.703\*\*\* 0.583\*\*\* 0.873\*\*\*

(0.010) (0.013) (0.016) (0.013)

yrsld9 0.635\*\*\* 0.658\*\*\* 0.506\*\*\* 0.872\*\*\*

(0.012) (0.015) (0.018) (0.016)

yrsld10 0.516\*\*\* 0.555\*\*\* 0.413\*\*\* 0.775\*\*\*

(0.016) (0.021) (0.023) (0.025)

yrsld11 0.433\*\*\* 0.431\*\*\* 0.379\*\*\* 0.675\*\*\*

(0.025) (0.032) (0.032) (0.043)

yrsld12 0.340\*\*\* 0.366\*\*\* 0.285\*\*\* 0.650\*\*\*

(0.044) (0.058) (0.055) (0.083)

hsps -0.015\*\*\* -0.018\*\*\* -0.059\*\*\* -0.007\*\*

(0.002) (0.003) (0.004) (0.003)

wkwks -0.103\*\*\* -0.092\*\*\* -0.160\*\*\* -0.095\*\*\*

(0.003) (0.005) (0.005) (0.005)

nrel 0.123\*\*\*

(0.004)

Constant -1.453\*\*\* -1.467\*\*\* -0.933\*\*\* -2.543\*\*\*

(0.013) (0.018) (0.021) (0.020)

----------------------------------------------------------------------

Observations 1,984,757 1,158,385 1,062,853 921,904

Log Likelihood -661,803.800 -381,814.500 -300,680.500 -350,488.800

Akaike Inf. Crit. 1,323,640.000 763,663.000 601,392.900 701,009.500

======================================================================

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

As labelled, table 2 shows the general models for different samples. (1) is the general model applied to the full sample, (2) is the general model applied for the sample of years with religious affiliation collected (1981, 1991, 2001, and 2011), (3) is the general model applied to males of the collected census years and (4) is the same as (3) but applied to females.

In all the general models, the model estimates that people that work most of the year and have more than a high school education are less likely to divorce. This is somewhat expected; most people when considering ages ranging from 20 to 84 are generally economically better off with more education. Unexpectedly, wkwks, the variable that can be interpreted as an indicator of employment stability indicates a lower probability of divorce. This opposes the results from Amato and Beattie (2011), who found that from the 1980s and on, unemployment was negatively related to divorce. The result is also at odds with Chowdhury (2013) and Cohen (2014) who assert the pro-cyclical nature of divorce rates. But this does not seem to be the case. It could be that the divorce rate is pro-cyclical but out of all ever-married people, those likely to divorce are those with lower employment stability.

The factor variable of age groups, yrsld, show that for (1) and (2) from age 20-24 (yrsld0), the ratio of divorced/separated people in higher age groups increase at a decreasing rate and cap at age group 50-54 (yrsld6); after the peak, the decline decreases at an increasing rate. Ratio of divorced people by age group shows a bell curve. Most divorced people are age 50-54 with age groups left and right of it are less divorced. For (3) and (4) yrsld shows a significant difference between the sexes. For males, the age group with the highest divorced population is yrsld5, men aged 45-49. For females, the age group with the highest divorced population is yrsld8 and yrsld9, women aged 60-64 and 65-69 respectively.

The difference in sign between log(inc) for (3) and (4) is in accordance with Becker’s theory; a decrease in the wage differential between husband and wife disturbs marital stability. This is surprising for Canada if this is a true reflection of marriage in Canada today. This however may not be the case as evidenced by table 3 below.

**Table 3.**

General Model: Female Subsets by Census Year

=========================================================================================================

Dependent variable:

---------------------------------------------------------------------------------------

marstat

(1) (2) (3) (4) (5) (6) (7)

---------------------------------------------------------------------------------------------------------

log(inc) 0.034\*\*\* 0.040\*\*\* 0.058\*\*\* 0.046\*\*\* 0.039\*\*\* 0.011\*\*\* -0.002

(0.003) (0.003) (0.003) (0.003) (0.003) (0.003) (0.003)

yrsld1 0.202\*\*\* 0.235\*\*\* 0.251\*\*\* 0.250\*\*\* 0.274\*\*\* 0.262\*\*\* 0.298\*\*\*

(0.022) (0.025) (0.024) (0.027) (0.028) (0.029) (0.045)

yrsld2 0.358\*\*\* 0.426\*\*\* 0.436\*\*\* 0.471\*\*\* 0.515\*\*\* 0.520\*\*\* 0.549\*\*\*

(0.021) (0.024) (0.023) (0.026) (0.027) (0.028) (0.043)

yrsld3 0.478\*\*\* 0.591\*\*\* 0.621\*\*\* 0.644\*\*\* 0.708\*\*\* 0.731\*\*\* 0.772\*\*\*

(0.021) (0.023) (0.022) (0.025) (0.027) (0.027) (0.042)

yrsld4 0.575\*\*\* 0.696\*\*\* 0.728\*\*\* 0.781\*\*\* 0.853\*\*\* 0.886\*\*\* 0.925\*\*\*

(0.021) (0.023) (0.022) (0.025) (0.026) (0.027) (0.042)

yrsld5 0.669\*\*\* 0.764\*\*\* 0.798\*\*\* 0.870\*\*\* 0.936\*\*\* 0.964\*\*\* 1.032\*\*\*

(0.021) (0.023) (0.022) (0.025) (0.026) (0.027) (0.041)

yrsld6 0.719\*\*\* 0.803\*\*\* 0.843\*\*\* 0.896\*\*\* 0.998\*\*\* 1.026\*\*\* 1.086\*\*\*

(0.021) (0.023) (0.022) (0.025) (0.026) (0.027) (0.041)

yrsld7 0.803\*\*\* 0.882\*\*\* 0.915\*\*\* 0.967\*\*\* 1.062\*\*\* 1.120\*\*\* 1.181\*\*\*

(0.021) (0.023) (0.023) (0.025) (0.027) (0.027) (0.042)

yrsld8 0.911\*\*\* 0.982\*\*\* 1.005\*\*\* 1.051\*\*\* 1.147\*\*\* 1.214\*\*\* 1.286\*\*\*

(0.022) (0.024) (0.024) (0.026) (0.027) (0.028) (0.042)

yrsld9 0.966\*\*\* 1.041\*\*\* 1.046\*\*\* 1.098\*\*\* 1.200\*\*\* 1.238\*\*\* 1.356\*\*\*

(0.027) (0.029) (0.028) (0.030) (0.031) (0.031) (0.045)

yrsld10 0.945\*\*\* 1.035\*\*\* 0.953\*\*\* 1.028\*\*\* 1.132\*\*\* 1.152\*\*\* 1.316\*\*\*

(0.041) (0.042) (0.040) (0.041) (0.041) (0.040) (0.056)

yrsld11 0.811\*\*\* 0.921\*\*\* 0.824\*\*\* 0.874\*\*\* 0.964\*\*\* 1.068\*\*\* 1.176\*\*\*

(0.073) (0.072) (0.068) (0.068) (0.066) (0.062) (0.085)

yrsld12 0.893\*\*\* 1.091\*\*\* 0.870\*\*\* 0.923\*\*\* 1.015\*\*\* 1.127\*\*\* 1.357\*\*\*

(0.155) (0.151) (0.137) (0.149) (0.126) (0.117) (0.172)

hsps -0.016\*\* -0.028\*\*\* -0.007 -0.010\* -0.011\* -0.014\*\* -0.021\*\*

(0.007) (0.007) (0.006) (0.006) (0.006) (0.006) (0.008)

wkwks -0.012 -0.028\*\*\* -0.064\*\*\* -0.090\*\*\* -0.058\*\*\* -0.007 -0.009

(0.009) (0.009) (0.008) (0.008) (0.008) (0.008) (0.011)

Constant -2.014\*\*\* -2.132\*\*\* -2.346\*\*\* -2.227\*\*\* -2.254\*\*\* -2.050\*\*\* -1.974\*\*\*

(0.035) (0.036) (0.035) (0.036) (0.037) (0.035) (0.051)

---------------------------------------------------------------------------------------------------------

Observations 240,971 250,971 316,898 310,712 320,899 332,153 170,140

Log Likelihood -92,352.080 -96,924.000 -120,049.500 -121,442.700 -126,473.900 -131,446.700 -67,391.920

Akaike Inf. Crit. 184,736.200 193,880.000 240,131.000 242,917.400 252,979.800 262,925.500 134,815.800

=========================================================================================================

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 3 shows the model applied to women for the individual census years. The effect of income is consistent. Every census year from 1981 to 2006, the effect of income on the likelihood of divorce was positive. For 2011, the effect seems to finally reverse; however, for this year, the log of income is not statistically significant. Not being statistically significant means the null hypothesis of the effect the variable has on the probability of divorce being equal to zero cannot be rejected. Therefore, the reason income is not statistically significant may just be due to the small effect size; not being able to reject the null hypothesis is not equivalent to accepting the null hypothesis. Looking at the trend of the effect of income on the probability of divorce, it appears that the effect of income on the probability of divorce for women will be, if not already, negative.

Fluctuations in wkwks between each census year may be explained by the high divorce rates from 1981 to 2001 that dramatically decrease thereafter. Hsps, the variable that indicates whether someone has more than high school level education drops very low between 1986 and 1991 but steadily increases thereafter. More information on women’s tertiary education enrollment rates are required to make a conclusion. But, a reasonable guess is that this sudden drop reveals the increase in the enrollment of ever-married women in educational institutions because of the divorce act of 1986 and increasing economic independence of women.

The yrsld variables behave differently every year. For every census year, the estimate of each yrsld variable is greater on average for every year. A commonality between every year is that the peak of the divorced women population is at age group 65-69, for all the years. However, for all years, age group 80-84 has a higher divorce probability than the prior age group, 75-79. In fact, for some years, age group 80-84 is a rival or greater peak to age group 65-69. This could be a future point of investigation in women’s divorce and remarriage behavior.

**Table 4.**

General Model: Male Subsets by Census Year

========================================================================================================

Dependent variable:

--------------------------------------------------------------------------------------

marstat

(1) (2) (3) (4) (5) (6) (7)

--------------------------------------------------------------------------------------------------------

log(inc) -0.073\*\*\* -0.074\*\*\* -0.076\*\*\* -0.076\*\*\* -0.069\*\*\* -0.055\*\*\* -0.061\*\*\*

(0.003) (0.003) (0.003) (0.002) (0.002) (0.002) (0.003)

yrsld1 0.194\*\*\* 0.318\*\*\* 0.292\*\*\* 0.256\*\*\* 0.208\*\*\* 0.234\*\*\* 0.281\*\*\*

(0.028) (0.034) (0.033) (0.036) (0.037) (0.039) (0.061)

yrsld2 0.296\*\*\* 0.460\*\*\* 0.463\*\*\* 0.472\*\*\* 0.418\*\*\* 0.429\*\*\* 0.467\*\*\*

(0.027) (0.033) (0.032) (0.034) (0.035) (0.038) (0.058)

yrsld3 0.404\*\*\* 0.600\*\*\* 0.620\*\*\* 0.635\*\*\* 0.601\*\*\* 0.630\*\*\* 0.668\*\*\*

(0.027) (0.033) (0.031) (0.034) (0.034) (0.037) (0.057)

yrsld4 0.493\*\*\* 0.688\*\*\* 0.712\*\*\* 0.758\*\*\* 0.737\*\*\* 0.791\*\*\* 0.820\*\*\*

(0.027) (0.033) (0.031) (0.034) (0.034) (0.037) (0.057)

yrsld5 0.611\*\*\* 0.786\*\*\* 0.798\*\*\* 0.837\*\*\* 0.842\*\*\* 0.925\*\*\* 0.970\*\*\*

(0.026) (0.032) (0.031) (0.034) (0.034) (0.037) (0.057)

yrsld6 0.649\*\*\* 0.825\*\*\* 0.818\*\*\* 0.863\*\*\* 0.870\*\*\* 0.945\*\*\* 1.022\*\*\*

(0.026) (0.032) (0.031) (0.034) (0.034) (0.037) (0.057)

yrsld7 0.635\*\*\* 0.802\*\*\* 0.790\*\*\* 0.838\*\*\* 0.843\*\*\* 0.935\*\*\* 1.023\*\*\*

(0.027) (0.033) (0.031) (0.034) (0.034) (0.037) (0.057)

yrsld8 0.582\*\*\* 0.734\*\*\* 0.739\*\*\* 0.768\*\*\* 0.785\*\*\* 0.892\*\*\* 0.976\*\*\*

(0.027) (0.033) (0.032) (0.035) (0.035) (0.037) (0.057)

yrsld9 0.513\*\*\* 0.673\*\*\* 0.663\*\*\* 0.711\*\*\* 0.741\*\*\* 0.815\*\*\* 0.919\*\*\*

(0.031) (0.036) (0.035) (0.037) (0.037) (0.039) (0.059)

yrsld10 0.461\*\*\* 0.580\*\*\* 0.613\*\*\* 0.635\*\*\* 0.630\*\*\* 0.692\*\*\* 0.837\*\*\*

(0.039) (0.043) (0.041) (0.043) (0.043) (0.044) (0.065)

yrsld11 0.404\*\*\* 0.517\*\*\* 0.511\*\*\* 0.564\*\*\* 0.539\*\*\* 0.651\*\*\* 0.740\*\*\*

(0.054) (0.057) (0.054) (0.056) (0.056) (0.054) (0.078)

yrsld12 0.348\*\*\* 0.514\*\*\* 0.492\*\*\* 0.495\*\*\* 0.477\*\*\* 0.568\*\*\* 0.728\*\*\*

(0.095) (0.092) (0.087) (0.090) (0.089) (0.082) (0.114)

hsps -0.042\*\*\* -0.064\*\*\* -0.070\*\*\* -0.095\*\*\* -0.103\*\*\* -0.111\*\*\* -0.115\*\*\*

(0.007) (0.007) (0.006) (0.006) (0.006) (0.006) (0.009)

wkwks -0.127\*\*\* -0.152\*\*\* -0.126\*\*\* -0.146\*\*\* -0.121\*\*\* -0.116\*\*\* -0.097\*\*\*

(0.010) (0.010) (0.009) (0.009) (0.009) (0.009) (0.012)

Constant -0.978\*\*\* -1.088\*\*\* -1.099\*\*\* -1.066\*\*\* -1.140\*\*\* -1.354\*\*\* -1.372\*\*\*

(0.036) (0.040) (0.039) (0.040) (0.040) (0.041) (0.062)

--------------------------------------------------------------------------------------------------------

Observations 285,130 287,381 353,376 340,396 345,209 354,431 180,614

Log Likelihood -79,316.940 -81,835.910 -99,207.070 -100,615.300 -103,628.200 -106,449.200 -53,913.880

Akaike Inf. Crit. 158,665.900 163,703.800 198,446.100 201,262.500 207,288.400 212,930.400 107,859.800

========================================================================================================

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 4 shows the general model applied to males for individual census years—the same way table 3 does for women. For the male sample, the age group with the most divorced males is age group 60-64. Unlike women, there isn’t a second peak at higher age groups and the distribution is much more normal.

As there weren’t drastic changes in males’ labor force participations and incomes, inc and hsps, the variable estimates of inc does not fluctuate much and hsps’ continually decreases. The decreases in hsps’ estimation, even without the actual effect of the education, may be a result of increase of average first age at marriage of men. The increasing importance of education prompts more people to forego marriage to secure higher future wages. Wkwks seems somewhat pro-cyclical. Parallel to growth rates, years 1981 and 1991 are relatively higher than the 1986 and there is a steady increase from 1996 and on.

**Table 5.**

General Model per Census --Religious subset

=====================================================================

Dependent variable:

---------------------------------------------------

marstat

(1) (2) (3) (4)

---------------------------------------------------------------------

log(inc) -0.042\*\*\* -0.034\*\*\* -0.036\*\*\* -0.045\*\*\*

(0.002) (0.002) (0.002) (0.002)

yrsld1 0.190\*\*\* 0.269\*\*\* 0.258\*\*\* 0.289\*\*\*

(0.017) (0.019) (0.022) (0.036)

yrsld2 0.318\*\*\* 0.445\*\*\* 0.489\*\*\* 0.517\*\*\*

(0.017) (0.018) (0.021) (0.035)

yrsld3 0.433\*\*\* 0.617\*\*\* 0.677\*\*\* 0.730\*\*\*

(0.017) (0.018) (0.021) (0.034)

yrsld4 0.530\*\*\* 0.720\*\*\* 0.819\*\*\* 0.885\*\*\*

(0.016) (0.018) (0.021) (0.034)

yrsld5 0.641\*\*\* 0.799\*\*\* 0.914\*\*\* 1.017\*\*\*

(0.016) (0.018) (0.021) (0.034)

yrsld6 0.682\*\*\* 0.828\*\*\* 0.956\*\*\* 1.067\*\*\*

(0.016) (0.018) (0.021) (0.034)

yrsld7 0.714\*\*\* 0.847\*\*\* 0.972\*\*\* 1.116\*\*\*

(0.016) (0.018) (0.021) (0.034)

yrsld8 0.731\*\*\* 0.855\*\*\* 0.975\*\*\* 1.140\*\*\*

(0.017) (0.019) (0.022) (0.034)

yrsld9 0.697\*\*\* 0.818\*\*\* 0.953\*\*\* 1.123\*\*\*

(0.020) (0.021) (0.023) (0.036)

yrsld10 0.624\*\*\* 0.714\*\*\* 0.834\*\*\* 1.026\*\*\*

(0.027) (0.027) (0.029) (0.041)

yrsld11 0.505\*\*\* 0.573\*\*\* 0.685\*\*\* 0.876\*\*\*

(0.042) (0.040) (0.041) (0.054)

yrsld12 0.453\*\*\* 0.545\*\*\* 0.642\*\*\* 0.868\*\*\*

(0.078) (0.071) (0.070) (0.089)

hsps -0.017\*\*\* -0.029\*\*\* -0.044\*\*\* -0.057\*\*\*

(0.005) (0.004) (0.004) (0.006)

wkwks -0.058\*\*\* -0.081\*\*\* -0.078\*\*\* -0.049\*\*\*

(0.007) (0.006) (0.006) (0.008)

nrel 0.122\*\*\* 0.122\*\*\* 0.092\*\*\* 0.101\*\*\*

(0.005) (0.005) (0.005) (0.006)

Constant -1.322\*\*\* -1.519\*\*\* -1.548\*\*\* -1.586\*\*\*

(0.024) (0.024) (0.026) (0.039)

---------------------------------------------------------------------

Observations 523,538 667,684 663,545 348,191

Log Likelihood -172,769.500 -220,951.900 -231,612.500 -121,415.000

Akaike Inf. Crit. 345,573.000 441,937.800 463,258.900 242,864.100

=====================================================================

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

This table shows the general model in addition to the variable nrel for each individual census years that religious data was available. The same trends are observed in the religious subset of data; the effects of income, does not fluctuate much and hsps steadily increases. The impact of having a religion (or not having a religion) that isn’t Christian is the same in 1981 as 1991. It decreases in 2001 and increases but not at the same level as before at 2011.

**Table 6.**

Full, Male and Female Sample Models (1981 Census)

=====================================================

Dependent variable:

-----------------------------------

marstat

(1) (2) (3)

-----------------------------------------------------

log(inc) -0.008 -0.149\*\*\* 0.205\*\*\*

(0.005) (0.008) (0.008)

hsps 0.009 -0.010 0.018

(0.010) (0.014) (0.014)

wkwks -0.096\*\*\* -0.174\*\*\* -0.136\*\*\*

(0.013) (0.020) (0.018)

org1 0.033\*\* 0.048\*\* 0.008

(0.016) (0.022) (0.022)

org2 -0.571\*\*\* -0.491\*\*\* -0.710\*\*\*

(0.033) (0.043) (0.051)

org3 -0.006 0.024 -0.082\*\*

(0.025) (0.034) (0.038)

org4 -0.523\*\*\* -0.616\*\*\* -0.527\*\*\*

(0.036) (0.053) (0.049)

org5 -0.176\*\*\* -0.158\* -0.294\*\*\*

(0.061) (0.084) (0.090)

org6 0.202\*\*\* 0.080 0.227\*\*\*

(0.034) (0.051) (0.046)

org7 0.033 0.178 -0.161

(0.089) (0.120) (0.134)

agpafm1 -0.260\*\*\* -0.130\*\*\* -0.223\*\*\*

(0.012) (0.024) (0.015)

agpafm2 -0.375\*\*\* -0.178\*\*\* -0.337\*\*\*

(0.015) (0.026) (0.023)

agpafm3 -0.355\*\*\* -0.122\*\*\* -0.404\*\*\*

(0.023) (0.034) (0.042)

agpafm4 -0.237\*\*\* -0.053 -0.187\*\*\*

(0.036) (0.048) (0.066)

agpafm5 -0.221\*\*\* 0.002 -0.258\*\*

(0.056) (0.069) (0.108)

agpafm6 -0.298\*\*\* -0.061 -0.343\*\*

(0.090) (0.107) (0.175)

agpafm7 -0.228\*\* 0.054 -0.522\*\*\*

(0.096) (0.113) (0.194)

yrsld1 0.230\*\*\* 0.215\*\*\* 0.237\*\*\*

(0.023) (0.037) (0.029)

yrsld2 0.325\*\*\* 0.299\*\*\* 0.361\*\*\*

(0.022) (0.036) (0.028)

yrsld3 0.351\*\*\* 0.349\*\*\* 0.374\*\*\*

(0.023) (0.037) (0.029)

yrsld4 0.329\*\*\* 0.330\*\*\* 0.348\*\*\*

(0.023) (0.038) (0.030)

yrsld5 0.335\*\*\* 0.312\*\*\* 0.376\*\*\*

(0.024) (0.038) (0.031)

yrsld6 0.314\*\*\* 0.269\*\*\* 0.386\*\*\*

(0.024) (0.039) (0.033)

yrsld7 0.282\*\*\* 0.197\*\*\* 0.412\*\*\*

(0.026) (0.040) (0.036)

yrsld8 0.253\*\*\* 0.084\* 0.503\*\*\*

(0.029) (0.044) (0.042)

yrsld9 0.108\*\*\* -0.048 0.352\*\*\*

(0.042) (0.057) (0.071)

yrsld10 0.091 -0.071 0.417\*\*\*

(0.068) (0.085) (0.130)

yrsld11 0.182\* 0.041 0.404\*

(0.102) (0.119) (0.221)

yrsld12 -0.206 -0.204 -2.780

(0.252) (0.261) (15.340)

nrel 0.240\*\*\* 0.289\*\*\* 0.214\*\*\*

(0.014) (0.019) (0.022)

Constant -1.281\*\*\* 0.052 -3.280\*\*\*

(0.050) (0.087) (0.079)

-----------------------------------------------------

Observations 161,341 95,940 65,401

Log Likelihood -44,862.490 -21,430.880 -22,255.420

Akaike Inf. Crit. 89,786.980 42,923.750 44,572.830

=====================================================

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

The above table shows a more complete model. (1) is the full sample, (2) is male and (3) is female. It is only for the year 1981 and includes the factor variables agpafm and org which indicate age group at first marriage and birth region/country respectively. For this model, inc, wkwks, and nrel behave normally. Hsps is positively related to divorce as well as the general model. This may be because of the smaller sample size and more missing data for females compared to males, evidenced by the extreme difference in sample size between male and females.

As expected, age at first marriage has a negative relationship with the probability of divorce. The effect of a higher age at first marriage does not increase steadily. For men, age at first marriage of age group 25-29 causes the lowest divorce rates. For women, the lowest divorce rates peak first at age group 30-34 and again at the final age group, the less defined 50+.

As discussed in literature review, values and beliefs about family and marriage must also be a major contributor to the decision to divorce. The table shows that the effect birthplace has, which is the assumed culture the individual grew in, does vary by region. For (1), (2), and (3) people born in unaligned European, Asian, and African countries and living in Canada are less likely to divorce than Canadian born people. Across (1), (2), and (3) U.S. and EU nation born people; and Central and South American born people and living in Canada have a higher likelihood of divorce than Canadian born people. Lastly, for people born in Soviet aligned countries and living in Canada women have a lower likelihood to divorce than Canadian born women but not Canadian born men, and for unspecified regions, org7, the same.

**Table 7.**

Special Full and Religious subset Models (1991 - 2011)

==============================================

Dependent variable:

----------------------------

marstat

(1) (2)

----------------------------------------------

hsps -0.078\*\*\* -0.111\*\*\*

(0.004) (0.005)

wkwks -0.136\*\*\* -0.136\*\*\*

(0.005) (0.007)

yrsld1 0.310\*\*\* 0.290\*\*\*

(0.026) (0.029)

yrsld2 0.579\*\*\* 0.575\*\*\*

(0.026) (0.028)

yrsld3 0.822\*\*\* 0.827\*\*\*

(0.026) (0.028)

yrsld4 0.867\*\*\* 0.874\*\*\*

(0.026) (0.028)

yrsld5 0.742\*\*\* 0.712\*\*\*

(0.025) (0.027)

yrsld6 0.619\*\*\* 0.550\*\*\*

(0.025) (0.027)

yrsld7 0.530\*\*\* 0.427\*\*\*

(0.025) (0.027)

yrsld8 0.437\*\*\* 0.338\*\*\*

(0.026) (0.028)

yrsld9 0.274\*\*\* 0.188\*\*\*

(0.030) (0.034)

yrsld10 0.072 -0.023

(0.044) (0.051)

yrsld11 -0.038 -0.155\*

(0.070) (0.084)

yrsld12 -0.352\*\* -0.338\*

(0.169) (0.181)

hask 0.624\*\*\* 0.428\*\*\*

(0.030) (0.036)

org1 -0.030\* -0.048\*\*

(0.018) (0.024)

org2 -0.058\*\*\* -0.027\*\*\*

(0.007) (0.009)

org3 -0.242\*\*\* -0.254\*\*\*

(0.007) (0.010)

org4 0.206\*\*\* 0.183\*\*\*

(0.008) (0.011)

nrel 0.006

(0.006)

yrsld1:hask -0.272\*\*\* -0.231\*\*\*

(0.034) (0.040)

yrsld2:hask -0.452\*\*\* -0.428\*\*\*

(0.033) (0.039)

yrsld3:hask -0.556\*\*\* -0.542\*\*\*

(0.033) (0.039)

yrsld4:hask -0.485\*\*\* -0.497\*\*\*

(0.032) (0.038)

yrsld5:hask -0.310\*\*\* -0.276\*\*\*

(0.032) (0.038)

yrsld6:hask -0.215\*\*\* -0.126\*\*\*

(0.032) (0.038)

yrsld7:hask -0.131\*\*\* 0.009

(0.033) (0.040)

yrsld8:hask -0.084\*\* 0.080\*

(0.037) (0.047)

yrsld9:hask -0.029 0.142\*

(0.055) (0.078)

yrsld10:hask -0.032 -0.100

(0.110) (0.205)

yrsld11:hask -0.144 -0.066

(0.229) (0.439)

yrsld12:hask 0.263 -1.822

(0.352) (5.971)

Constant -2.226\*\*\* -2.012\*\*\*

(0.024) (0.025)

----------------------------------------------

Observations 1,251,082 681,898

Log Likelihood -262,638.000 -152,431.500

Akaike Inf. Crit. 525,340.100 304,928.900

==============================================

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

For this last table, (1) includes census years 1991, 1996, 2001, 2006, and 2011; and (2) includes census years 1991, 2001, and 2011. Birthplace indicator variable org is also in this model but defined differently. A dummy variable for whether a person has kids, hask, is included and interacted with the yrsld variable. This is because I suspect having children, up to age 24, living as a dependent has different effects depending on age.

For this sample, org shows that people born in America, Europe and Asian countries who live in Canada all have lower likelihoods to divorce than Canadian born. People born in the rest of the world though and living in Canada, have a higher likelihood of divorce than Canadian born people living in Canada.

Lastly, as suspected, having dependents affects the likelihood of divorce differently depending on age. For both (1) and (2), having kids at age group 20-24, hask on the table, greatly increases divorce risk, this does not account for whether children are young or old or newly acquired. Again, for both (1) and (2), the effect on the likelihood of divorce due to having kids as we go up the age groups decreases at a decreasing rate and caps at age group 35-39. Then, it increases at a decreasing rate till age group 65-69 where it reverses again. After age group 65-69, for both (1) and (2), the interaction variable of yrsld and hask become less reliable as standard error balloon. This makes sense as it is not expected for older couples to have children. A difference between (1) and (2) is from age group 55-59 to age group 65-69 the likelihood of divorce is greater than people without kids at age group 20-24 for (2). But for the same age groups likelihood of divorce for (1) in comparison with people without kids at age group 20-24 remain are lower.

**CONCLUSION**

Looking at the discrepancy in the likelihood of divorce rates due to the factor yrsld, it seemed the data collected is problematic, in that it was not an accurate representation of the population. However, looking at figure 3, the fears subside. It shows that the proportion of married women to divorced/separated women are higher than those for males. In the tables this paper has displayed, this is reflected by the higher estimates of yrsld variables. This paper does not explain this discrepancy in behavior, it just displays it.

From the graphical and simple ols analysis, marriage rate (first marriage or remarriage) seems to be decreasing. Comparing the crude divorce rate graph to the divorced ratio graph, the slope of the divorce rate graph is approximately the crude divorce rate graph subtracted by marriage rate. Observed then is many marriages relative to divorce from 1996 to 1991. But thereafter, there are more divorce and separations than traditional and common law marriages. Also, the claims by Cohen (2014) and Chowdhury (2013) of the pro-cyclical nature of the divorce rate is reaffirmed in this section by the significant negative relationship between crude divorce rates and employment stability in table 1.

The probit analysis gleans new results. In addition to the pro-cyclical nature of the crude divorce rate, people who do not have employment stability in the first place are those likelier to suffer a divorce. This seems contradictory. How can divorce rates be lower when the ratio of stably employed people are lower and simultaneously the likelihood of divorce is higher for people who are not stably employed. This seems to say that the decision to divorce is affected by the business cycle, but, the people who are likelier to divorce are they who don’t have stable employment. It is not contradictory, it is in accordance with both Becker (1973 & 1974) and Cohen (2014) and Chowdhury (2013); family income is higher if people are stably employed and are less likely to divorce, but the decision to divorce is related to the booms and busts of the economy.

Birthplace had a significant effect on marital stability, as expected. Cultural differences in the importance of family is what this captures. Having kids affects marital stability. Becker (1974) and Becker et al. (1977) claimed that children increases marital stability; they are right. Except for people aged 20-24 and people aged 65-69 or older, the presence of children promote marital stability. Asserted by Becker (1974) and Becker et al. (1977) as well, is that age at first marriage affects marital stability. This is generally true but only up to an age cap, and is different for males and females.

Other conclusions that can be drawn is that from 1981-2001 the mean age of divorce was decreasing and then increased again thereafter. This is expected as this runs simultaneous to the divorce Act of 1986 and the increases of women’s labor force participation. Also, religion has become less of a factor, or that people have become less religious in general, in affecting marital stability.

Because it is not determined whether people are in their first marriages and whether they are remarried results from age at first marriage does not reflect the overall likelihood that a person may or may not divorce due to their early or late age at first marriage. The indicator for whether there are kids in the family has the same problem. It does not differentiate whether people are in a family with their own kids or are in a family with their spouse’s kids from a previous marriage. Despite these problems, the results still say something important. Regardless of whether the kids are their own or not, at the age groups where the likelihood of families having young children are more stable. Whether both a child’s parents are their birth parents, at least in their formative years, the majority of them have the attention of two parental figures.

**REFERENCES**

Amato, P. R., & Beattie, B. (2011). Does the unemployment rate affect the divorce rate? An analysis of state data 1960-2005. *Social Science Research*, 40(3), 705-715. DOI: <http://dx.doi.org.ezproxy.macewan.ca/10.1016/j.ssresearch.2010.12.012>

Becker, G. S. (1973). A theory of marriage: Part I. *Journal of Political Economy,* 81(4), 813-846. Retrieved from <https://library.macewan.ca/library-search/detailed-view/bth/5051604>

Becker, G. S. (1974). A theory of marriage: Part II. *Journal of Political Economy,* 82(2), 11-26. Retrieved from <http://www.nber.org/chapters/c3681>

Becker, G. S., Landes, E. M., & Michael R. T. (1977). An economic analysis of marital instability. *Journal of Political Economy*, 85(6), 1141-1188. Retrieved from <http://library.macewan.ca/library-search/detailed-view/bth/5181499>

Bumpass, L. L., Martin, T. C., & Sweet, J. A. (1991). The impact of family background and early marital factors on marital disruption. *Journal of Family Issues,* 12(1), 22-42. Retrieved from <http://library.macewan.ca/library-search/detailed-view/cmedm/12316638>

Canada. Statistics Canada. Census of Canada, 1981: public use microdata file - individuals file [computer file]. Reloaded. Ottawa, Ont.: Statistics Canada [producer]; Statistics Canada. Data Liberation Initiative [distributor], 2007/01/12. Retrieved from <http://myaccess.library.utoronto.ca.ezproxy.macewan.ca/login?url=http://sda.chass.utoronto.ca.ezproxy.macewan.ca/sdaweb/html/canpumf.htm>

Canada. Statistics Canada. Census of Canada, 1986: public use microdata file - individuals file [computer file]. Ottawa, Ont.: Statistics Canada [producer]; Statistics Canada. Data Liberation Initiative [distributor]. Retrieved from <http://myaccess.library.utoronto.ca.ezproxy.macewan.ca/login?url=http://sda.chass.utoronto.ca.ezproxy.macewan.ca/sdaweb/html/canpumf.htm>

Canada. Statistics Canada. Census of Canada, 1991: public use microdata file - individuals file [computer file]. Ottawa, Ont.: Statistics Canada [producer]; Statistics Canada. Data Liberation Initiative [distributor]. Retrieved from <http://myaccess.library.utoronto.ca.ezproxy.macewan.ca/login?url=http://sda.chass.utoronto.ca.ezproxy.macewan.ca/sdaweb/html/canpumf.htm>

Canada. Statistics Canada. Census of Canada, 1996: public use microdata file - individuals file [computer file]. Reloaded. Ottawa, Ont.: Statistics Canada [producer]; Statistics Canada. Data Liberation Initiative [distributor], 2011/01/26. Retrieved from <http://myaccess.library.utoronto.ca.ezproxy.macewan.ca/login?url=http://sda.chass.utoronto.ca.ezproxy.macewan.ca/sdaweb/html/canpumf.htm>

Canada. Statistics Canada. Census of Canada, 2001: public use microdata file - individuals file [computer file]. Revision 2; Reloaded. Ottawa, Ont.: Statistics Canada [producer]; Statistics Canada. Data Liberation Initiative [distributor], 2006/05/05. (STC 95M0016XCB)   
Retrieved from <http://myaccess.library.utoronto.ca.ezproxy.macewan.ca/login?url=http://sda.chass.utoronto.ca.ezproxy.macewan.ca/sdaweb/html/canpumf.htm>

Canada. Statistics Canada. Census of Canada, 2006: public use microdata file of individuals [computer file]. Corrected. Ottawa, Ont.: Statistics Canada [producer]; Statistics Canada. Data Liberation Initiative [distributor], 2010/05/27. (STC 95M0028XVB) Retrieved from <http://myaccess.library.utoronto.ca.ezproxy.macewan.ca/login?url=http://sda.chass.utoronto.ca.ezproxy.macewan.ca/sdaweb/html/canpumf.htm>

Canada. Statistics Canada. Census of Canada, 2011: public use microdata file - individuals file [computer file]. Ottawa, Ont.: Statistics Canada [producer]; Statistics Canada. Data Liberation Initiative [distributor], 2014/07/29. (STC 99M0001X) Retrieved from <http://myaccess.library.utoronto.ca.ezproxy.macewan.ca/login?url=http://sda.chass.utoronto.ca.ezproxy.macewan.ca/sdaweb/html/canpumf.htm>

Choudhry, S. A., & Hum, D. J. (1995). Graduated work incentive and how they affect marital stability: The Canadian evidence. *Applied Economic Letters,* 10(2), 367-372. Retrieved from <http://library.macewan.ca/library-search/detailed-view/bth/9511071279>

Chowdhury, A. (2013). ‘Till recession do us part: booms, busts and divorce in the United States. *Applied Economic Letters,* 20(3), 255-261. Retrieved from <https://library.macewan.ca/library-search/detailed-view/edswss/000305511600009>

Cohen, P. (2014). Recession and Divorce in the United States, 2008-2011. *Population Research & Policy Review*, 33(5), 615-628. Retrieved from <https://library.macewan.ca/library-search/detailed-view/her/97679993>

Cooke, L., Erola, L., Evertsson, M., Gahler, M., Harkonen, J., Hewitt, B., et al. (2013). Labor and love: Wives’ employment and divorce risk in its socio-political context. *Social Politics,* 20(4), 482-509. Retrieved from <https://library.macewan.ca/library-search/detailed-view/edswss/000330211200002>

Divorce Act, R.S.C., 1985, c. 3 (2nd Supp.). Retrieved from <http://laws.justice.gc.ca/eng/acts/D-3.4/page-1.html>

Edwards, R., & Roff, J. (2016). What mom and dad’s match means for junior: Marital sorting and child outcomes. *Labour Economics,* 40, 43-56. DOI: <http://dx.doi.org/10.1016/j.labeco.2016.04.005>

Farnham, M., Schmidt, L., & Sevak, P. (2011). House prices and marital stability. *The American Economic Review,* 101(3), 615-619. Retrieved from <http://library.macewan.ca/library-search/detailed-view/edsjsr/edsjsr.29783816>

Farzanegan, M., & Gholipour, H. (2016). Divorce and the cost of housing: evidence from Iran. *Review of Economics of the Household,* 14(4), 1029-1054. DOI: 10.1007/s1115010.1007/s11150-014-9279-0-014-9279-0

Google. (2017). [Time-Series graph of GDP growth rate of U.S. and Canada]. *Google*. Retrieved from <https://www.google.ca/publicdata/explore?ds=d5bncppjof8f9_&ctype=l&strail=false&bcs=d&nselm=h&met_y=ny_gdp_mktp_kd_zg&scale_y=lin&ind_y=false&rdim=region&idim=country:CAN:USA&ifdim=region&hl=en&dl=en&ind=false>

Harknett, K. & Schneider, D. (2012). Is a bad economy good for marriage? The relationship between macroeconomic conditions and marital stability from 1998-2009. *National Poverty Center Working Paper Series, #*12-06. Retrieved from <http://www.npc.umich.edu/publications/working_papers/?publication_id=234&>

Kinnunen, U., & Pulkkinen, L. (2003). Childhood socio-emotional characteristics as antecedents of marital stability and quality. *European Psychologist,* 8(4), 223-237. Retrieved from <https://library.macewan.ca/library-search/detailed-view/edswss/000188417500001>

<https://knoema.com/atlas/Canada/topics/Economy/Inflation-and-Prices/GDP-deflator-index>

Lehrer, E., & Chen, Y. (2013). Delayed entry into first marriage and marital stability: Further evidence on the Becker-Landes-Michael hypothesis. *Demographic Research*, 29(20), 521-542. Retrieved from <http://www.demographic-research.org/Volumes/Vol29/20/>

Lehrer, E., & Chiswick, C. (1993). Religion as a determinant of marital stability. *Demography*, 30(3), 385-303. Retrieved from <http://www.jstor.org/stable/2061647>

Raz-Yurovich, L. (2011). Economic determinants of divorce among dual-earner couples: Jews in Israel. *Conference Papers – American Sociological Association.* Retrieved from <https://library.macewan.ca/library-search/detailed-view/sih/85657704>

Statistic Canada. (2015). Figure 1: Population pyramids of legal marital status by single year of age and sex, Canada, 1981 and 2011 [Figure]. *Statistics Canada.* Retrieved from <http://www.statcan.gc.ca/pub/91-209-x/2013001/article/11788/fig/fig1-eng.htm>

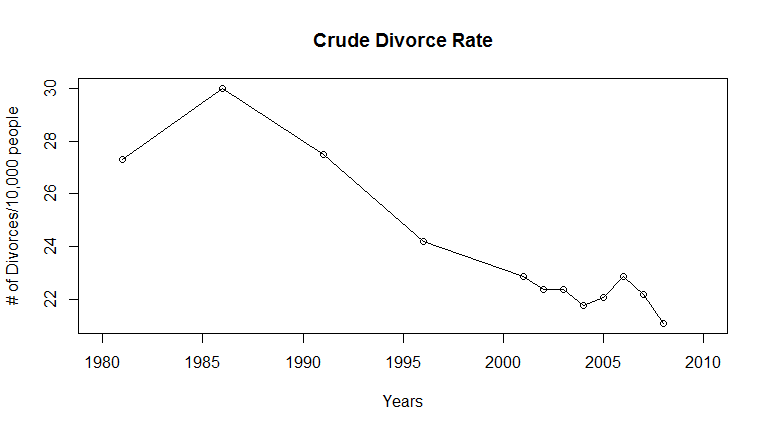
Statistics Canada. (2015). Table 2: Divorce and crude divorce rates, Canada, provinces and territories, 1981 to 2008 [Table]. *Statistics Canada*. Retrieved from <http://www.statcan.gc.ca/pub/91-209-x/2013001/article/11788/tbl/tbl2-eng.htm>

**APPENDIX**

**Table 8.**

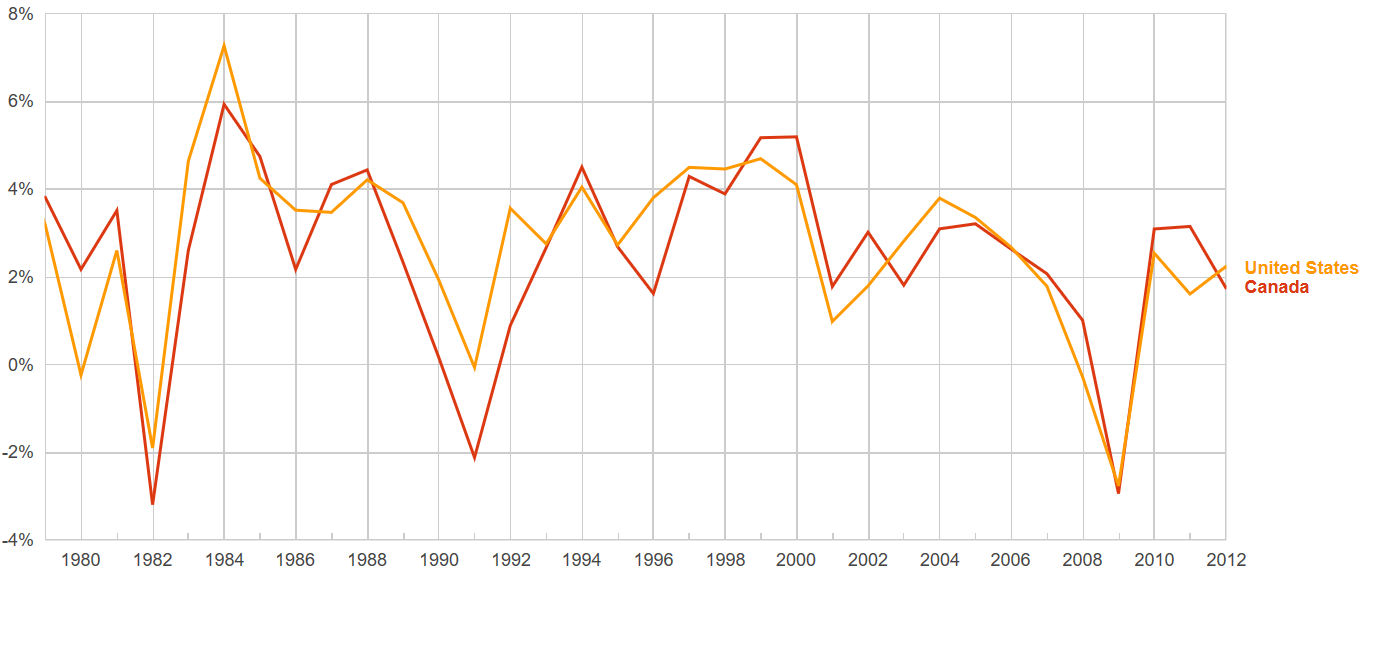
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 2 Divorces and crude divorce rates, Canada, provinces and territories, 1981 to 2008 Table summary This table displays the results of divorces and crude divorce rates. The information is grouped by year (appearing as row headers), n.l., p.e.i., n.s., n.b., que., ont., man., sask., alta., b.c., y.t., n.w.t., nvt. and canada, calculated using number and rate per 10,000 units of measure (appearing as column headers).** | | | | | | | | | | | | | | |
| **Year** | **N.L.** | **P.E.I.** | **N.S.** | **N.B.** | **Que.** | **Ont.** | **Man.** | **Sask.** | **Alta.** | **B.C.** | **Y.T.** | **N.W.T.** | **Nvt.** | **Canada** |
| number | | | | | | | | | | | | | |
| 1981 | 569 | 187 | 2,285 | 1,334 | 19,193 | 21,680 | 2,399 | 1,932 | 8,418 | 9,533 | 75 | 66 | **Note ...: not applicable** | 67,671 |
| 1986 | 687 | 199 | 2,609 | 1,729 | 19,026 | 27,549 | 2,982 | 2,479 | 9,556 | 11,299 | 94 | 95 | **Note ...: not applicable** | 78,304 |
| 1991 | 912 | 269 | 2,280 | 1,652 | 20,274 | 27,694 | 2,790 | 2,240 | 8,388 | 10,368 | 67 | 86 | **Note ...: not applicable** | 77,020 |
| 1996 | 1,060 | 237 | 2,228 | 1,450 | 18,078 | 25,035 | 2,603 | 2,216 | 7,509 | 10,898 | 115 | 99 | **Note ...: not applicable** | 71,528 |
| 2001 | 755 | 246 | 1,945 | 1,570 | 17,094 | 26,516 | 2,480 | 1,955 | 8,252 | 10,115 | 91 | 83 | 8 | 71,110 |
| 2002 | 842 | 258 | 1,990 | 1,461 | 16,499 | 26,170 | 2,396 | 1,959 | 8,291 | 10,125 | 90 | 68 | 6 | 70,155 |
| 2003 | 662 | 281 | 1,907 | 1,450 | 16,738 | 27,513 | 2,352 | 1,992 | 7,960 | 9,820 | 87 | 62 | 4 | 70,828 |
| 2004 | 837 | 293 | 2,000 | 1,415 | 15,999 | 26,374 | 2,333 | 1,875 | 8,317 | 10,049 | 66 | 71 | 15 | 69,644 |
| 2005 | 789 | 283 | 1,961 | 1,444 | 15,423 | 28,805 | 2,429 | 1,922 | 8,075 | 9,954 | 109 | 65 | 10 | 71,269 |
| 2006 | 831 | 287 | 2,161 | 1,527 | 14,965 | 31,983 | 2,221 | 1,983 | 8,329 | 10,235 | 84 | 54 | 21 | 74,681 |
| 2007 | 969 | 278 | 2,006 | 1,499 | 14,336 | 31,242 | 2,279 | 1,850 | 8,466 | 10,071 | 95 | 64 | 12 | 73,167 |
| 2008 | 907 | 306 | 1,902 | 1,458 | 13,899 | 29,692 | 2,241 | 1,858 | 8,868 | 8,903 | 108 | 58 | 26 | 70,226 |
|  | rate per 10,000 | | | | | | | | | | | | | |
| 1981 | 9.9 | 15.1 | 26.7 | 18.9 | 29.3 | 24.6 | 23.2 | 19.8 | 36.7 | 33.7 | 31.4 | 13.9 | **Note ...: not applicable** | 27.3 |
| 1986 | 11.9 | 15.5 | 29.3 | 23.8 | 28.4 | 29.2 | 27.3 | 24.1 | 39.3 | 37.6 | 38.5 | 17.4 | **Note ...: not applicable** | 30.0 |
| 1991 | 15.7 | 20.6 | 24.9 | 22.2 | 28.7 | 26.5 | 25.1 | 22.3 | 32.4 | 30.7 | 23.2 | 22.2 | **Note ...: not applicable** | 27.5 |
| 1996 | 18.9 | 17.5 | 23.9 | 19.3 | 24.9 | 22.6 | 23.0 | 21.7 | 27.1 | 28.1 | 36.6 | 23.7 | **Note ...: not applicable** | 24.2 |
| 2001 | 14.5 | 18.0 | 20.9 | 20.9 | 23.1 | 22.3 | 21.5 | 19.5 | 27.0 | 24.8 | 30.2 | 20.3 | 2.8 | 22.9 |
| 2002 | 16.2 | 18.8 | 21.3 | 19.5 | 22.2 | 21.6 | 20.7 | 19.7 | 26.5 | 24.7 | 29.6 | 16.3 | 2.1 | 22.4 |
| 2003 | 12.8 | 20.5 | 20.3 | 19.3 | 22.4 | 22.5 | 20.2 | 20.0 | 25.0 | 23.8 | 28.1 | 14.6 | 1.4 | 22.4 |
| 2004 | 16.2 | 21.3 | 21.3 | 18.9 | 21.2 | 21.3 | 19.9 | 18.8 | 25.7 | 24.2 | 21.0 | 16.4 | 5.0 | 21.8 |
| 2005 | 15.3 | 20.5 | 20.9 | 19.3 | 20.3 | 23.0 | 20.6 | 19.3 | 24.3 | 23.7 | 34.2 | 15.0 | 3.3 | 22.1 |
| 2006 | 16.3 | 20.8 | 23.0 | 20.5 | 19.6 | 25.3 | 18.8 | 20.0 | 24.3 | 24.1 | 26.0 | 12.5 | 6.8 | 22.9 |
| 2007 | 19.1 | 20.1 | 21.4 | 20.1 | 18.6 | 24.4 | 19.1 | 18.5 | 24.1 | 23.4 | 29.2 | 14.7 | 3.8 | 22.2 |
| 2008 | 17.9 | 21.9 | 20.3 | 19.5 | 17.9 | 23.0 | 18.6 | 18.3 | 24.7 | 20.3 | 32.6 | 13.3 | 8.2 | 21.1 |

**Graph 1.**



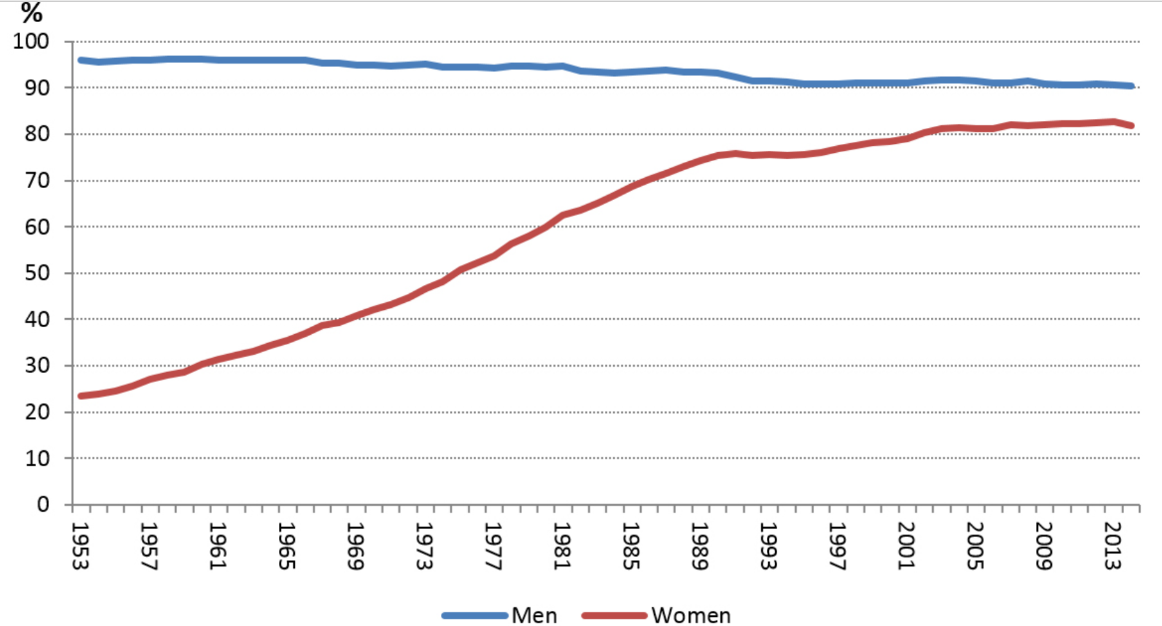
**Graph 2.**

**Growth Rate of Canada and the U.S. over time**



**Graph 3.**

**Labor Force Participation Rate in Canada over Time**



**Table 9.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Full Sample | 1981 | 1986 | 1991 | 1996 | 2001 | 2006 | 2011 |
| Average Income ($) | 52 484 | 52 602 | 52 001 | 51 901 | 53 098 | 56 105 | 57 460 |
| Ratio of: |  |  |  |  |  |  |  |
| Divorced or Separated | 0.1060 | 0.1089 | 0.1064 | 0.1134 | 0.1159 | 0.1170 | 0.1174 |
| More than high school | 0.5865 | 0.5900 | 0.5802 | 0.6100 | 0.6244 | 0.6567 | 0.6813 |
| Worked at least 30 weeks | 0.8420 | 0.8386 | 0.8404 | 0.8422 | 0.8557 | 0.8571 | 0.8539 |
| British Columbia | 0.1293 | 0.1276 | 0.1293 | 0.1340 | 0.1329 | 0.1335 | 0.1344 |
| Alberta | 0.1117 | 0.1123 | 0.1091 | 0.1107 | 0.1138 | 0.1162 | 0.1181 |
| Saskatchewan | 0.0329 | 0.0331 | 0.0328 | 0.0321 | 0.0311 | 0.0304 | 0.0300 |
| Manitoba | 0.0373 | 0.0374 | 0.0371 | 0.0367 | 0.0361 | 0.0352 | 0.0352 |
| Ontario | 0.3819 | 0.3838 | 0.3826 | 0.3815 | 0.3856 | 0.3858 | 0.3844 |
| Quebec | 0.2391 | 0.2373 | 0.2396 | 0.2367 | 0.2337 | 0.2333 | 0.2347 |
| New Brunswick | 0.0234 | 0.0236 | 0.0238 | 0.0239 | 0.0235 | 0.0229 | 0.0223 |
| Nova Scotia | 0.0284 | 0.0286 | 0.0288 | 0.0284 | 0.0280 | 0.0276 | 0.0267 |
| Newfoundland | 0.0159 | 0.0163 | 0.0167 | 0.0157 | 0.0153 | 0.0150 | 0.0143 |

\*All numbers rounded, sum of provinces may not equal 1.

**Figure 3.**

