

An Empirical Analysis of the Influence of Divorce Cooling-off Period on Divorce Rate in Chinese Context

Yujia Su^{1,*}

¹*School of Management, Xi'an Jiaotong University, Xi'an, 710000, China*

**Corresponding author: 310908@stu.xjtu.edu.cn*

Abstract: In 2020, the number of divorcees in China was as high as 3.733 million. The high divorce rate has become an unavoidable problem in today's society. Therefore, China officially implemented a cooling-off period policy for divorce in 2021, aiming to reduce the occurrence of impulsive divorces and lower the divorce rate by Increase the consideration time of the parties. Since its implementation, the policy has sparked heated discussions about its ethical and practical effects in China. This study focuses on the practical effects of divorce cooling-off period, and uses Ordinary Least Square (OLS) mixed multiple linear regression and other empirical tools to test the impact of divorce cooling-off period on divorce rate. The results show that the implementation of divorce cooling-off period has a significant effect on the decrease of divorce rate, however, the decrease regression coefficient is not large. It can be shown that in the context of China, the divorce cooling-off period plays a certain role and can be further implemented, but at the same time, more attention should be paid to its improvement. Subjective initiative should be exerted and external mediation mechanism should be added in the cooling-off period in order to achieve better results.

Keywords: Divorce Cooling-off Period, Divorce Rate, OLS Multiple Linear Regression.

1. Introduction

Under the tide of ideological emancipation and the influence of western thought, the main marriage views in China are increasingly changing from "moral deontology" to "emotional freedom" [1]. The theory of emotional freedom advocates that the emotional desires of individuals should not be bound by the traditional responsibilities and obligations of the family, and encourages the marriage concept that individuals live for themselves, which is commonly referred to as "freedom of love" and "freedom of marriage". In this view, the moral criticism of divorce behavior changes to moral neutrality [1]. The cost of trial and error in marriage is also falling. On the other hand, the overall economic level of the country is improving, personal income and living standards are generally rising, and there is less need to rely on the partner to a living. Similarly, at the legal level, the Marriage Registration Regulations revised in 2003 simplified the conditions of procedures for the parties to handle divorce registration. Since the amendment of the act, the divorce parties' marriage maintenance time has become short, and the phenomenon of impulsive divorce is frequent [2].

It is important to note that marriage not only represents lifestyle choices brought about by the individual's freedom to self-actualize, but harm children and create a vicious circle for society further [3]. Therefore, divorce not only represents the emotional failure, but also leads to the shock of family relations, which is one of the causes of some social problems [4].

Divorce would occur if the expected benefits of the couple outside the marriage exceed the benefits of the marriage [5]. On the premise that the decision of divorce is difficult to revoke, the fluctuation of quality which has little influence on the overall marriage yield should not cause the dissolution of the marriage relationship [6]. Because of China's original divorce procedure is relatively simple, the parties of impulse divorce can easily legal significance of the divorce agreement, so as to make the impulse divorce occupies certain proportion in divorce. A research has shown that about a quarter of women and one five men will regret for their divorce actions, reflecting that part of divorce behavior is not expected by the parties in the state of rationality after the event [7].

According to the National Bureau of Statistics, the crude divorce rate in China continued to rise from 2002 to 2019, reaching 3.36 permillage in 2019, more than triple the previous year's figure of 0.9 permillage. In this social context, the high divorce rate has become a fundamental social problem. The country is also actively looking for policy tools to restrain the growth of this index, so divorce cooling-off period emerged at the historic moment in China. China adopted the Draft Civil Code on 28 May 2020, which includes the 'cooling-off period' system for divorce, and officially took effect on 1 January 2021. The divorce cooling-off period refers to an additional 30-day cooling-off period between the application for divorce and the change in the registration procedure. During this period, the parties may cancel the application on their own or if they do not collect the divorce certificate in person at the registration authority after the expiration of the period, the application will be deemed to have been abandoned too. The validity and legitimacy of divorce cooling-off period has been the focus of social attention.

At present, the domestic research on divorce cooling-off period mainly stays at the level of theoretical analysis and legal and social significance. On the one hand, some argue that the cooling-off period is an attempt to solve the problem of rash divorce and abuse of divorce freedom [8]; Divorce cooling-off period is the inevitable requirement of law to respond to reality, to maintain the marriage relationship which is not completely ended in the actual sense, and to perfect the divorce procedure [9]. However, some opposing voices believe that the cooling-off period of divorce is to delay time to achieve the purpose of reducing risks, which is a manifestation of passive inaction and does not really solve the family risk of marriage breakdown [10]; In addition, the compulsory use of divorce period limits the individual rights and interests of non-impulsive divorce parties, and the lack of supporting marriage security system makes the policy to treat the symptoms rather than the root cause [11].

Overseas, such as South Korea, the United States, Russia and other countries implemented the divorce cooling-off period system earlier and conducted relevant studies. A study showed that under the background of South Korea, the divorce cooling-off period had no significant impact on the applied divorce rate, but had a significant impact on the decline of the actual divorce rate [12]. However, since the policy has just come into being in China, and there are certain differences between China and other countries in the aspect of marriage system and social situation. There is still a huge gap in empirical research on the cooling-off period of divorce in China.

Based on the method of OLS multiple linear regression, this paper focuses on the Chinese background and uses the quarterly panel data of China from 2015 to 2021 to achieve statistical analysis of the impact of divorce cooling-off period on divorce rate in the Chinese context. So as to verify whether China's policy and social system under the divorce cooling-off period is true and effective to alleviate the phenomenon of high divorce rate, and to quantify the size of the impact. This study can provide reference value for the government's subsequent implementation of marriage act to a certain extent. At present, the relevant researches in China are mostly theoretical analysis. This paper also fills the gap in the empirical field of divorce cooling-off period in China, provides a

realistic basis for subsequent theoretical research, and gives more convincing and targeted suggestions combined with it.

2. Methodology

This study was to explore the divorce and the influence of the divorce rate, its main variables for divorce a cooling-off period and the divorce rate. Due to the short establishment time of the divorce cooling-off period, in order to reduce the small sample size and the imbalanced sample after the implementation of the divorce cooling-off period, the crude divorce rate in years, which is commonly used in other research, is not selected in this paper, but quarterly is used as the minimum unit of measurement to increase the number of samples.

Secondly, in order to ensure the accuracy of the fitting results and reduce the large deviation of the coefficient of the explanatory variable caused by the certainty of the dependent variable. Four additional indicators of 'birth rate', 'marriage rate', 'regional per capita GDP' and 'resident consumption expenditure' were selected as control variables. 'Birth rate' and 'marriage rate' reflect the demographic characteristics of the region, and represent the attitude towards marriage itself and the possible stability of marriage. While 'regional per capita GDP' and 'resident consumption expenditure' are the regional economic development level, referring to the conjecture that the higher the individual economic independence is, the higher the divorce rate.

Data were collected from the official websites of National Bureau of Statistics of China, Ministry of Civil Affairs of China, official websites of finance departments of provinces (autonomous regions and municipalities) and statistical yearbooks during 2015-2021. As the dimension of data and the magnitude of value have a big difference, the data for standardization processing. The specific description of variables and simple descriptive statistics are shown in Table 1.

Table 1. Explanatory variables and control variables.

Variable	Full name	Explain	Mean value
Y_{it}	Quarterly crude divorce rate	Number of divorcees / Permanent resident population *1000‰	0.626‰
C_{it}	Cooling-off period	Whether there is a cooling-off period for divorce in region i and time t	-
M_{it}	Marriage rate	Quarterly number of marriages / Permanent resident population *1000‰	1.823‰
B_{it}	Birth rate	Yearly birth rate/ Permanent resident population *1000‰	10.52‰
G_{it}	GDP per capita	GDP / Permanent resident population	16178.96
H_{it}	Household consumption expenditure	Total expenditures of individuals and families for living expenses and collective expenditures for personal consumption	4910.81

Further, it can be known from the above analysis and practical experience that the general ideological cognition, openness and clan influence of the region are likely to have a significant impact on the divorce rate. However, it is difficult to use quantitative data to describe the ideological aspect, so the individual fixed effect is used to strip the divorce rate.

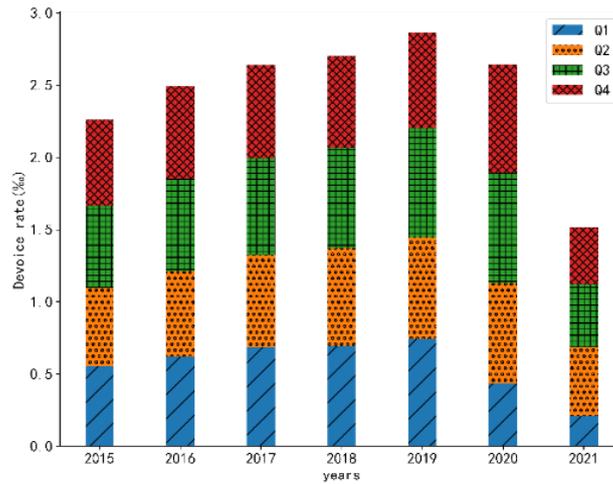


Figure 1: Quarterly divorce rate change in China from 2015 to 2021.

Similarly, time changes of divorce rate were observed, as shown in Figure 1. Obviously, from the perspective of the total annual divorce rate, the trend of divorce from 2015 to 2019 showed a gradual increase. From the perspective of quarterly differences, the divorce rate in the first and second quarters of each year is relatively slightly lower than that in the third and fourth quarters. It may be related to holiday length, climate and other factors, which are also difficult to be expressed by data. Therefore, time-fixed effect variables are added to the model to eliminate the influence of time-dependent variable divorce rate.

OLS multiple regression model was used for specific statistical analysis of the data. By gradually adding control variables, the influence of each variable on the regression equation was analyzed and the rationality of the control variables could be verified. The regression model mainly constructed is shown in Formula (1).

$$Y_{it} = \beta_1 C_{it} + \beta_2 M_{it} + \beta_3 B_{it} + \beta_4 G_{it} + \beta_5 H_{it} + \lambda_i + \gamma_t + \mu_{it} \quad (1)$$

Y_{it} means divorce rate as dependent variable; i is the collection of region; t is the collection of time; C_{it} is the core explanation variables as cooling-off period, means whether implemented a divorce a cooling-off period system in the region i and at time t (according to Chinese law, all regions implemented the policy in 2021); M_{it} is marriage rate; B_{it} is birth rate; G_{it} is the regional GDP per capita; H_{it} behalf of the per capita consumption; λ_i is the individual fixed effect; γ_t is the time fixed effect; μ_{it} is the residual.

3. Results and Discussion

On the basis of the data and methods mentioned above, the original data are preprocessed such as sorting and standardization. According to Formula (1), and gradually to join part of the control variable, build a total of five OLS multiple regression equations. Then regression equations are analyzed respectively, and the divorce a cooling-off period influence on quarterly crude divorce rate, further add individual fixed effects and time fixed effects control provinces and the trend of time characteristic, the analysis of the effect of divorce to cooling-off period of quarterly crude divorce rate. The calculation results of the above multiple regression models are shown in Table 2.

Table 2. Results of OLS regression analysis.

Variable	(1)	(2)	(3)	(4)	(5)
Birth rate	0.107*** (0.000)	0.087*** (0.000)	0.093*** (0.000)	0.102*** (0.000)	0.080*** (0.000)
Marry rate	- 0.133*** (0.000)	- 0.172*** (0.000)	-0.1628*** (0.000)	- 0.182*** (0.000)	0.018 (0.142)
Cooling-off	-	- 0.400*** (0.000)	-0.395*** (0.000)	- 0.256*** (0.000)	-0.059** (0.023)
GDP per	-	-	0.077*** (0.000)	0.092*** (0.000)	0.087*** (0.000)
Household consumption expenditure	-	-	-0.057*** (0.000)	- 0.084*** (0.000)	- 0.069*** (0.000)
Time fixed effects	NO	NO	NO	YES	YES
Individual fixed effects	NO	NO	NO	NO	YES
Adjusted R ²	0.269	0.486	0.503	0.565	0.833

^a * Significant at 0.1 level. ** Significant at 0.05 level. *** Significant at 0.01 level.

In OLS (1) regression, only birth rate and marriage rate were used as variables for multiple linear regression. Put cooling-off period as a classification variables into OLS (2) , and observed the divorce a cooling-off period P value is 0.000, shows that under the significance level of 1% reject the null hypothesis, namely to set up a divorce a cooling-off period can affect the divorce rate, and the coefficient is 0.400, namely when other condition is constant, set up a divorce a cooling-off period can reduce the divorce rate 0.4 %.Then OLS (3), OLS (4) and OLS(5) respectively considered regional per capita GDP and consumer expenditure indicators, time fixed effect and individual fixed effect indicators on the basis of OLS (2). After placing these indicators in order, it was found that the goodness of fit improved significantly, reflecting that the control variables were effective and reasonable. The goodness of fit of OLS (5) reached 0.833 and the fitting effect was good. The divorce cooling-off period was significant at the significance level of 5%, which could reject the null hypothesis, that is, the establishment of divorce cooling-off period could reduce the divorce rate by 0.059%.

Similarly, through other variables of fitting results, it can also be found that birth rate, marriage rate and per capita GDP indicators have a positive impact on the divorce rate, that is, the higher these indicators are, the divorce rate will rise, while residents' consumption expenditure has a negative impact on the divorce rate. It shows that population characteristics and regional characteristics have certain influence on divorce rate.

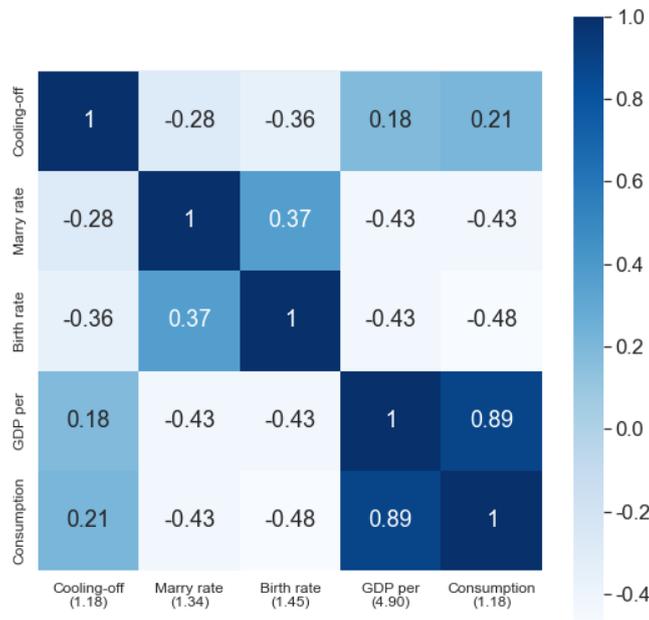


Figure 2: Correlation coefficient and variance expansion coefficient between variables.

From Figure 2, further observing the correlation between variables and verify the rationality of variable selection. The numbers in brackets on the horizontal axis of the figure represent the variance inflation factor (VIF) of each variable, and the values in the matrix figure represent the correlation coefficient between two variables. It can see that the correlation coefficient between cooling-off period divorce, marriage, birth rate, GDP per are small. the GDP per and consumption correlation coefficient is big, but the intrinsic causal relationship in between is variable, namely, in GDP per capita large areas, consumer spending should also be larger. And the VIF of all variable is < 5 , which indicates that the multicollinearity of each variable is not serious. That is, the model distortion or difficult to estimate accurately caused by multicollinearity is not significant.

The empirical analysis shows that the divorce cooling-off period has a certain decreasing effect on the divorce rate, but the coefficient is not particularly large. The possible explanations for this result are as follows. Ideally, for couples who divorce impulsively, the divorce cooling-off period provides time to avoid impulsiveness. Within the time of the effect of the policy, the short-term conflict between the couple ends and the divorce agreement is revoked. That is, the cooling-off period encourages the parties to treat the comprehensive negotiation process of the divorce agreement more carefully and make a rational decision that is more in line with their own or the actual interests of both parties. Second, for the parties who have the potential but not strong desire to divorce, the divorce cooling-off period increases the steps of the divorce process. The influence of the more complicated steps of the divorce exceeds the parties' willingness to make divorce decisions, and the parties are unwilling to carry out complicated divorce procedures for divorce. Third, the parties are not familiar with the divorce cooling-off period policy, or forget to apply for divorce after the divorce cooling-off period expires, resulting in no successful divorce. Fourth, the parties in the divorce cooling-off period between the contradiction is still not fully resolved, adhere to divorce. Fifth, the divorce due to irreconcilable reasons such as domestic violence is not within the scope of the use of divorce cooling-off period.

Further analysis shows that only the first reason can reflect the original intention of the divorce cooling-off period, which is to give the divorce parties more time to think and expect the conflict to be reconciled. The divorce cooling-off period plays a passive role in the second and third reasons, that is, the divorce rate decreases not because of the moderating effect of the divorce cooling-off

period, but because the divorce cooling-off period makes the divorce procedure more complicated. This corresponds to the theoretical increase in divorce rates due to the simplicity of the divorce process before the introduction of the system. The fourth reason reflects the extent to which divorce cooling-off period cannot be covered. The fifth reason is the main deficiency of divorce cooling-off period system, which is also the basic reason for its relatively low impact on divorce rate. In other words, the divorce cooling-off period is simply to prolong the time and passively expect both parties to resolve their conflicts by themselves. However, as a matter of fact, the existing conflicts between the parties are persistent and regenerative, and it is difficult to remove them under the existing conditions. The setting of divorce cooling-off period instead becomes a burden for both parties.

It can be seen that the divorce cooling-off period has certain rationality and advantages in the system: it can avoid some impulsive divorce, avoid the abuse of divorce freedom caused by too simple divorce procedure, and still ensure the citizens' right to divorce freedom. This study also shows that the divorce cooling-off period restrains the high divorce rate to some extent, so it is feasible. However, we should also pay attention to the deficiency of divorce cooling-off period, that is, the limited scope of use and the lack of active intervention. This point can refer to the relevant system in Korea, South Korea South Korea part of the court in divorce to calm the mid-term joined the consulting service options, divorce to give help to adjust the contradiction between the parties, rather than passively waiting for the parties to adjust themselves. Internalization to China's national conditions, It may be a feasible attempt to establish a special regulating organization within the civil administration organization, or to link the civil administration organization with the community, and make use of the power of community service groups to regulate.

4. Conclusion

Based on the policy of divorce cooling-off period in China, OLS multiple linear regression empirical analysis shows that the cooling-off period can significantly reduce the divorce rate, and the establishment of divorce cooling-off period can reduce the divorce rate by 0.059%. This research fills the blank of empirical research on the impact of divorce cooling-off period on the divorce rate in the Chinese context. It has certain practical reference value for local or national legislation and civil affairs institutions, and provides realistic conclusions with statistical significance for scholars of marriage-related research, which can help them better study the internal mechanism of divorce cooling-off period and related policies.

At the same time, this study also has many shortcomings. First, due to the short period of implementation of the policy, it is difficult to observe the long-term stability of the follow-up divorce cooling-off period, and the development of subsequent forms of divorce may not be completely stable. Meanwhile, the divorce cooling-off period is still in its infancy in China and may undergo a series of adjustments in the future. Therefore, this paper can only explain the divorce cooling-off period in a short term. Whether the research results can still be consistent with this study in the long-term stability remains to be seen how the future reality develops. For the next step, first, conducting a longer time span study on this study after more abundant and comprehensive data are available. Second, to the problem of reality should also focus on the part of the divorce because of a cooling-off period to cancel the marriage of subsequent development of the parties to a divorce tracking survey, and from the perspective of the specific analysis of the individual, whether divorce a cooling-off period helps people's actual happiness growth, rather than just looking at the number of divorces.

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