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Premarital Cohabitation and Marital Dissolution in Postreform China

The author uses cohabitation data from the 2010 Chinese Family Panel Studies to analyze the association of premarital cohabitation with subsequent divorce of first marriage. After balancing selection factors that influence premarital cohabitation through propensity score matching, the author uses Cox proportional hazards models to examine the selection, causation, and diffusion perspectives on the relationship between premarital cohabitation and marital dissolution. The results show that premarital cohabitation is positively associated with divorce for those married in the early-reform period (1980–1994) when cohabitation was uncommon. However, this relationship disappears for those married in the late-reform period (1995–2010) when cohabitation became more prevalent. The findings suggest variation in the link between premarital cohabitation and divorce across different marriage cohorts and provide strong evidence for the diffusion perspective in postreform China. Supplemental sensitivity analyses support the robustness of the conclusion.

Cohabitation has been prevalent in Western societies since the 1980s (Smock, 2000). For instance, in the United States, the number of cohabiting couples had reached 7.7 million by 2010 (U.S. Census Bureau, 2010), and the percentage of marriages preceded by cohabitation

is greater than 60% for those married after 1996 (Manning & Cohen, 2012). In Europe, cohabitation has experienced a similar rise (Kasearu & Kutsar, 2011), as more than 80% of men cohabit before marriage in Northern Europe (Kalmijn, 2011; Kiernan, 2004). Although cohabitation can be used to evaluate partners and strengthen the marital bond by serving as a trial marriage (Heuveline & Timberlake, 2004; Kulu & Boyle, 2010), scholars have found that premarital cohabitation is positively associated with marital dissolution (Axinn & Thornton, 1992; Bumpass, Sweet, & Cherlin, 1991; Cohan & Kleinbaum, 2002).

Scholars have offered several theoretical perspectives to explain the link between cohabitation and marital dissolution in Western societies (Manning & Cohen, 2012). The *selection perspective* argues that cohabitators are a select group of individuals with divorce-prone characteristics that make them more open to the idea of divorce (Axinn & Thornton, 1992). Thus, controlling for selection effects can significantly eliminate the association between cohabitation and marital instability (Woods & Emery, 2002). Meanwhile, the *causation perspective* posits that the relationship is causal, and the experience of cohabitation per se can increase the likelihood of marital dissolution by changing cohabitators' commitment to marriage (Kamp Dush, Cohan, & Amato, 2003; Stanley, Whitton, & Markman, 2004).

In contrast to these perspectives, the *diffusion perspective* does not attempt to explain why cohabitation is associated with greater marital instability. Rather, it focuses on variation in the association of cohabitation with divorce among different national or cultural contexts (Hewitt

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& De Vaus, 2009; Kiernan, 2002; Liefbroer & Dourleijn, 2006). Particularly, it suggests that whether the association between cohabitation and divorce can be explained by the selection perspective or the causation perspective depends on the meaning and popularity of cohabitation within specific structural, cultural, and historical contexts. Previous research has found that both selection and causation perspectives can partially explain the positive relationship between cohabitation and divorce when cohabitation is uncommon (Lu, Qian, Cunningham, & Li, 2012). However, they may not be able to explain the relationship when cohabitation becomes popular because cohabitation may not be related to marital instability (Manning & Cohen, 2012), or it may even reduce the risk of marital dissolution in some contexts (Hewitt & De Vaus, 2009).

The literature examining the relationship between cohabitation and divorce has several limitations. First, most prior research focusing on Western societies began after the 1980s, when cohabitation was already relatively common (Smock, 2000). Thus, current scholarship cannot easily disentangle causation from selection in understanding why cohabitation is associated with divorce (Yu & Xie, 2015b). Second, the diffusion perspective has received little attention although it is likely that the relationship between cohabitation and marital instability varies across countries as a result of distinct cultural and institutional contexts (Liefbroer & Dourleijn, 2006). Few scholars have examined the relationship in developing countries and East Asian societies (Raymo, Park, Xie, & Yeung, 2015).

China affords us a unique setting to advance our understanding of the relationship between cohabitation and marital dissolution in different social contexts. When compared with other East Asian countries, China has undergone dramatic societal changes that stem primarily from the market-oriented economic reform that began in 1978 (Xie, 2011; Yu & Xie, 2015a). The recent emergence and growing acceptance of cohabitation after the 1980s in China allows an examination of whether and how the association between cohabitation and divorce has changed in traditional Confucian society (Yu & Xie, 2015b). In the remainder of this article, I first introduce the background of the emergence of cohabitation, and then I systematically examine the three aforementioned perspectives on the relationship

between premarital cohabitation and divorce in postreform China.

BACKGROUND: COHABITATION IN CHINA

Cohabitation has been increasingly common in recent marriage cohorts in China (Yu & Xie, 2015b). The emergence of cohabitation in China is a result of ideational change, economic development, and institutional change since the early 1980s (Parish, Laumann, & Mojola, 2007; Yu & Xie, 2015b). In traditional Chinese society, cohabitation was prohibited as a result of the ideas of Confucianism, which advocated for patriarchy, filial piety, and chastity. This tendency against cohabitation was strengthened by the socialist government's regulations on marriage and divorce during the Maoist era (1949–1976; Parish et al., 2007). During the Cultural Revolution (1966–1976), the subject of sexuality disappeared from public discourse, and nonmarital sex was sanctioned as immoral behavior (Parish et al., 2007). Given that cohabitation was nearly nonexistent during the pre-reform period (before 1980), I solely focus on cohabitation and marital dissolution during the postreform period (after 1980).

Since the early 1980s, China has experienced an unprecedented social transformation, shifting from a planned to a market-oriented economy. This significant economic reform was first introduced into rural areas in 1978, and it later expanded to urban areas after 1992 (Yu & Xie, 2015a). During the same period, family behaviors regarding marriage and divorce also underwent substantial changes. Different from Western societies, the traditional Chinese family was featured as patriarchal, patrimonial, patrilineal, and patrilocal (Thornton & Lin, 1994). The patrilineal kinship system allowed authoritarian parents to arrange marriages for their children; however, the founding of the People's Republic of China weakened this system (Xu & Whyte, 1990). During the early-reform period, the passage of a new marriage law in 1980 that advocates "freedom of marriage choices" continued to challenge the dominance of parental control over children's marriages (Engel, 1984). Meanwhile, the implementation of the open-door policy opened China's market to the rest of the world, ending China's near-total isolation from Western countries. Western culture, including norms regarding cohabitation and divorce, began to influence Chinese people

via mass media (Parish et al., 2007). As a result, an increasing number of urban youth with high socioeconomic family backgrounds began to choose their own partners and accept cohabitation as a novel behavior (Yu & Xie, 2015b).

During the late-reform period (after the mid-1990s), with rapid economic growth, urbanization, and the expansion of higher education, a growing number of rural elites, migrant workers, and college students moved to the cities. Meanwhile, the relaxation of the household registration system (*hukou*), which restricts peasants in rural areas, and the decline of the work-unit system, which controls urban workers, enabled large-scale social mobility from rural to urban areas and from inland China to coastal China (Wu & Treiman, 2007). These societal changes led to an increase in young people's autonomy and a decline in parental control over children, especially in rural areas. During this period, men's economic prospects became more important in marriage entry, and the husband was usually expected to provide the necessary housing unit for marriage (Yu & Xie, 2015a). In prereform China, urban families' housing units were provided by the working unit system, and this housing allocation system favored people with higher socioeconomic and political status (Logan, Bian, & Bian, 1999). After the early 1990s, the market-driven reform spurred the emergence of the commercial housing market, but the sharp increase of housing prices in urban areas has led more people to delay marriage (Yu & Xie, 2015a). Therefore, many couples may postpone marriage and cohabit first as a result of insufficient financial resources. Taken together, the association of cohabitation with marital dissolution in postreform China might be contingent on foregoing institutional and cultural factors.

EXPLAINING THE RELATIONSHIP BETWEEN PREMARITAL COHABITATION AND DIVORCE IN CHINA

Recent scholarship has investigated the selection, causation, and diffusion perspectives on the link between cohabitation and marital dissolution in Western countries (Hewitt & De Vaus, 2009; Lu et al., 2012). Hewitt and De Vaus (2009) found that the increased risk of divorce for cohabitators relative to noncohabitators decreases each year for marriages before 1988 in Australia, and premarital cohabitation even

reduces the risk of divorce for more recent marriages. Lu and his colleagues (2012) found that the association of cohabitation with divorce in the United States can be partially explained by selection and causation perspectives when cohabitation is uncommon, but the positive relationship disappears when cohabitation becomes prevalent. These findings indicate that the association of cohabitation with marital instability varies across different marriage cohorts, and thus the diffusion perspective can explain the relationship in Western societies. Whether these three different perspectives can be meaningfully applied to postreform China remains unknown.

The Selection Perspective

The selection perspective argues that cohabitators are a select group of individuals who differ from noncohabitators on a number of important characteristics that are also positively associated with the risk of marital instability. Scholars have attributed the appearance of cohabitation in Western societies to a series of factors such as individualism, secularism, industrialization, and modernization (Heuveline & Timberlake, 2004; Lesthaeghe, 2010; Rindfuss & VandenHeuvel, 1990; Thornton, Axinn, & Teachman, 1995). Thus, cohabitation in Western societies is more common among people who are less religious and more supportive of liberal and egalitarian values (Smock, 2000; Van de Kaa, 2002). Past studies have also found higher cohabitation rates among disadvantaged groups in the United States characterized by less education, fewer financial resources, a racial minority, limited migration experience, and low socioeconomic or divorced family backgrounds (Manning & Cohen, 2012). Researchers have also linked cohabitation to unemployment, a dearth of work experience, low income levels, and temporary employment in European countries (Kalmijn, 2011). These precohabiting characteristics are related to a lower commitment to marriage and greater approval of divorce (Booth & Johnson, 1988; Lillard, Brien, & Waite, 1995; Thomson & Colella, 1992; Woods & Emery, 2002) and, therefore, a higher risk of marital instability (Manning & Cohen, 2012). Thus, the association of cohabitation with a higher risk of instability may be partially or wholly spurious.

However, the determinants of cohabitation in postreform China differ from those in Western societies. Instead of belonging to disadvantaged

groups, cohabitators in China are more likely to be individuals with greater exposure to Western culture and fewer institutional constraints (Yu & Xie, 2015b). Specifically, Yu and Xie (2015b) found that individuals with better education, high socioeconomic family background, migration experience from rural to urban areas, and previous experience living in developed areas are more likely to cohabit before first marriage. Because of the dramatic societal changes that undermine the influence of the patrilineal kinship system, these precohabiting characteristics allow cohabitators to choose their partners in a love-match way, which may result in an increase of marital stability. Thus, I expect that the selection perspective may not explain the relationship between cohabitation and marital dissolution in postreform China.

The Causation Perspective

The causation perspective assumes that the cohabitation experience itself significantly increases the risk of marital dissolution rather than selective divorce-prone features that bring them into cohabitation (Bennett, Blanc, & Bloom, 1988; Kamp Dush et al., 2003). Scholars of this perspective argue that the cohabitation experience may increase the constraints of terminating the relationship (e.g., financial obligations and fewer possible alternatives), and therefore some cohabitators may slide into marriage as a result of relationship inertia, even though they may find themselves not ideally compatible (Stanley, Rhoades, & Markman, 2006). Given that cohabitators may not be satisfied with their spouses, cohabitation may not increase or even reduce levels of dedication and commitment to marriage. For instance, using data from the 1987–1988 and 1992–1994 National Survey of Families and Households, Stafford, Kline, and Rankin (2014) found that cohabitators' companionship, sexual interaction, relational satisfaction, and commitment decrease across time, but the frequency of conflict and the risk of separation increase. Past research has also found some evidence that, after controlling for sociodemographic factors, premarital cohabitation is still associated with lower marital satisfaction (Brown & Booth, 1996; Teachman, 2003), higher rates of marital infidelity (Forste & Tanfer, 1996), and lower commitment to the marital bond (Stanley et al., 2004). As a result, premarital cohabitation

may lead to a greater acceptance of divorce (Cunningham & Thornton, 2005; Stafford et al., 2004; Stanley et al., 2004).

As in Western countries, cohabitation in postreform China also increases the relationship inertia because of social pressure and institutional constraints. Although the weakening of arranged marriages under the patrilineal kinship system provided young generations more freedom to choose their partners, cohabitators were still expected to marry after cohabiting in postreform China, especially during the early reform period (Parish et al., 2007). It is likely that cohabitators may not be satisfied with their spouses, but slide into marriage rather than intentionally commit to it because of social pressure and institutional constraints (Stanley et al., 2006). In this sense, cohabitation may lead to a higher risk of divorce. Thus, I expect cohabitators to show lower marital stability when compared with noncohabitators, and the causation perspective may explain the relationship between cohabitation and divorce.

The Diffusion Perspective

The diffusion perspective suggests heterogeneity in the association of cohabitation with marital dissolution. It argues that the relationship between cohabitation and marital dissolution varies across different marriage cohorts depending on the popularity and meaning of cohabitation within the population among different countries and cultures (De Vaus, Qu, & Weston, 2003; Hewitt & De Vaus, 2009; Manning & Cohen, 2012). Theories based on the second demographic transition assume that the diffusion of cohabitation passes through multiple stages: It is first seen as a deviant behavior, then as a prelude or trial to marriage, and finally as an alternative to marriage (Kieran, 2002; Liefbroer & Dourleijn, 2006). Thus, the influence of cohabitation on marital stability varies across distinct stages. When cohabitation is uncommon, it increases marital instability; however, this effect decreases or disappears when cohabitation becomes widespread. Previous research has shown that in Western and Northern Europe, where cohabitation rates are high, cohabitation as an alternative to marriage is more prevalent, whereas in Central and Eastern European countries, where cohabitation is less widespread, many cohabitators intend to marry despite holding unfavorable attitudes toward

marriage (Hiekel, Liefbroer, & Poortman, 2014). Correspondingly, Liefbroer and Dourleijn (2006) found that the effect of cohabitation on marital instability in European countries varies across the Nordic countries (high), Western Europe (medium), Central and Eastern Europe (medium), and Southern Europe (low).

The diffusion pattern of cohabitation in postreform China shows that, as a deviant behavior, cohabitation was rare during the Maoist era (1949–1978), but it has increased rapidly since the early 1980s and became relatively common after the mid-1990s. Given the popularity of cohabitation at different reform stages, I anticipate that the diffusion perspective may explain the association of cohabitation with divorce in postreform China. Specifically, since the early 1980s, institutional and cultural changes began to weaken the patrilineal kinship system (e.g., arranged marriages). Therefore, those who had more exposure to Western culture and fewer institutional constraints and who lived in urban areas began to choose their partners and accept cohabitation as a novel behavior; but during this early-reform period, cohabitation was treated as a precursor to marriage (Yu & Xie, 2015b) and cohabitators were still expected to marry after living together. Thus, it is likely that cohabitators with less marital commitment would marry because of institutional and cultural constraints and end up divorced (Stanley et al., 2006). However, during the late-reform period, Chinese society became more tolerant of cohabitation, and cohabitators experienced less pressure to get married after cohabiting. Under these circumstances, cohabitation might begin to serve as a trial marriage. Notably unlike Western societies, following extremely low divorce rate in the prereform period, although the crude divorce rate increased from 0.33 in 1979 to 1.59 in 2007 (Wang & Zhou, 2010), divorce in postreform China was still not highly accepted. In this sense, it is possible that the association of cohabitation with marital instability might disappear during the late-reform period.

METHOD

Data and Sample

I drew on cohabitation data from the Chinese Family Panel Studies (CFPS, see <http://www.issf.edu.cn/cfps/EN/>) carried out by the Institute of Social Science Survey of Peking

University in 2010. The CFPS 2010 data is a nationally representative sample of 33,600 adult respondents in 14,798 households, including 29,213 respondents with first marriage experience and 2,331 respondents with cohabitation experience prior to first marriage. It also includes the detailed cohabitation and divorce history of one's first marriage.

Given the more than 20% missingness of respondents' fathers' education and party membership, I did not drop cases with missing values on these two variables. Instead, I first retrieved partial information from CFPS 2012 data on fathers' education and party membership and then used a new "unknown" category to indicate the missing values on these two variables (Yu & Xie, 2015b). After this procedure, the percentage of missing cases in the final analytical sample is less than 10% and thus appropriate for conducting complete case analyses. I also used the multiple imputation method with chained equations to impute variables with missing values and obtained similar results with complete case analyses (shown in supplemental materials).

The main purpose of this article is to examine the relationship between premarital cohabitation and marital dissolution in postreform China. Thus, I dropped 4,387 respondents without first-marriage experience. Past research and preliminary data analysis have indicated that cohabitation was nearly nonexistent during the Maoist era (Yu & Xie, 2015b), and the cohabitation rate in CFPS 2010 was 1.34% for those married before 1980. I therefore excluded 7,822 respondents married before 1980. The final analytic sample consists of 17,877 respondents married between 1980 and 2010. During the period of 1990–1995, China had completed the second demographic transition, characterized by low fertility rate, delayed marriage, and growing divorce rate (Xie, 2011). To test the diffusion perspective, I divided respondents into the early-reform marriage cohort (1980–1994) and the late-reform marriage cohort (1995–2010) based on the economic reform stage, the prevalence of cohabitation, and the completion of the second demographic transition. I also present additional analyses in supplemental materials using the marriage cohorts 1978–1992 and 1993–2008 to represent the early- and late-reform stages because the economic reform was expanded to the urban economy after 1992 (Yu & Xie, 2015a). Both results are consistent.

Variables and Measures

The core dependent variable, the timing for the divorce of first marriage, was constructed from the duration (years) of first marriage and whether it ended in divorce at the time of the survey. If the respondent was reported not divorced at the time of the survey, the duration was computed based on the time from first marriage to the time of the survey. The independent variable of cohabitation was a dummy variable indicating whether the respondent cohabited with the future spouse prior to first marriage.

With respect to selection variables that influence cohabitation, I followed Yu and Xie's (2015b) findings about the determinants of cohabitation in China. They found that cohabitators in China were more likely to be those with high socioeconomic family backgrounds. Family background was operationalized as father's education (1 = "primary school degree or less"; 2 = "middle school degree"; 3 = "high school degree"; 4 = "college degree or above"; 99 = "unknown"), father's Chinese Communist Party (CCP) membership (1 = "CCP member"; 0 = "non-CCP member"; 99 = "unknown"), and respondent's education (1 = "primary school degree or less"; 2 = "middle school degree"; 3 = "high school degree"; 4 = "college degree or above"). They also found that individuals with fewer institutional constraints, such as those with rural-urban migration experience (1 = "always rural"; 2 = "always urban"; 3 = "from rural to urban") and non-CCP members (1 = "CCP member"; 0 = "non-CCP member"), are more likely to cohabit before first marriage. I included one more institutional variable that relates to mate selection pattern (1 = "free selection"; 0 = "arranged marriage or others"). Free mate selection appears to have a significant impact on marital satisfaction in urban China (Xu & Whyte, 1990). In addition, based on previous studies in Western societies, I controlled for other relevant sociodemographic characteristics that affect cohabitation, including ethnicity (1 = "minorities"; 0 = "Han ethnicity"), religiosity (1 = "religion affiliated"; 0 = "not affiliated"), age, annual income (log), gender (1 = "female"; 0 = "male"), and number of siblings (1 = "zero siblings"; 0 = "more than 1 sibling"); for more details, please see Lu et al., (2012). As suggested by Yu and Xie (2015b), cohabitation varies across different regions, and individuals living in more developed areas are more likely to cohabit in China. Regional

variance was measured by the marketization index and regional indicators. Marketization was a measurement of the level of provincial economic development ranging from 0 to 10 (Fan, Wang, & Ma, 2011), and the region indicator was based on respondents' sampling provinces, coded as 1 = "small provinces," 2 = "Shanghai," 3 = "Liaoning," 4 = "Henan," 5 = "Gansu," and 6 = "Guangdong."

Propensity Score Matching

Propensity score matching (PSM) has been widely used in observational studies to balance selection biases from observed covariates (Morgan & Winship, 2007; Rosenbaum & Rubin, 1983). In a binary treatment effect design, Y^T ($T=1$ if treated; 0 otherwise) denotes the potential outcomes for a subject under binary treatment conditions and vector \mathbf{X} denotes a set of observed covariates. Thus, a valid causal inference relies on the following strongly ignorable treatment assignment assumption:

$$T \perp Y^T \mid e(\mathbf{X}),$$

where $e(\mathbf{X})$ is the balancing score defined as $P(T=1|\mathbf{X})$. This assumption assures that individual i can be randomly assigned into a treatment group, which leads to a random-like situation (Rosenbaum & Rubin, 1983).

In this article, whether a person chooses to cohabit before first marriage can be seen as a nonrandom experiment because the differences in preexisting cohabiting characteristics, such as family backgrounds and institutional factors, would affect the treatment effect on marital dissolution (Lu et al., 2012). Hence, it is important to remove observed biases that influence the probability of cohabitation to estimate the effect of premarital cohabitation on marital dissolution. If the selection effect exists, the influence of cohabitation on marital instability should decrease or disappear after balancing the selection biases. I employed binary logistic models to estimate the probability of accepting treatment (cohabiting with the spouse prior to first marriage) and used the logistic transformation of predicted probability as the propensity score because of its proximity to normal distribution (Rosenbaum, 2002). I also used the complex survey design element, the strata indicator (sampling regions), as a predictor in the propensity score models.

After obtaining the propensity score, I used this scalar score to balance distributions of covariates by matching cohabitators and noncohabitators. I took the optimal full matching as the main matching strategy because it could minimize the total distance of propensity scores and take full advantage of every case in my data (Hansen & Klopfer, 2006). In an optimal full matching, each treated participant matches to one or more controls, and similarly each control participant matches to one or more treated participants (Guo & Fraser, 2014, p. 151).

Survival Analysis

After obtaining the matched data and the matching structures, I applied stratified Cox proportional hazards models to estimate the divorce hazard of first marriage. The model is specified as follows (Cleves, 2008):

$$h_i(t) = h_{0i}(t) \exp \left(\beta_1 \text{Cohabitation} + \sum_{j=2}^p \beta_j \text{Control}_j \right)$$

β_1 denotes the log hazard ratio of cohabitation, and β_j denotes the log hazard ratio of the j th control variable. $h_i(t)$ refers to the hazard function of the i th group. Stratified Cox models assume that the i th group has its specific baseline hazard function $h_{0i}(t)$, but the coefficients of explanatory variables are the same across groups. This feature allows us to use obtained PSM structures as strata to adjust the influence of selective factors and to test the different perspectives of the relationship between cohabitation and divorce (Lu et al., 2012). All observed covariates used in the PSM models were added into Cox models as control variables. Considering the potential influence of unobserved variables, I also conducted a sensitivity analysis to examine the unobserved confounding effects as shown in the supplemental materials.

RESULTS

Descriptive Analysis of Premarital Cohabitation in China

Cohabitation has gradually become relatively popular in postreform China. Table 1 shows the cohabitation rate among different marriage cohorts. The percentage of cohabitators

Table 1. Cohabitation Rate Before First Marriage by Marriage Cohort and Education

	Marriage cohort	
	Early reform (1980–1994)	Late reform (1995–2010)
Total sample, %	5.05	24.54
Education level, %		
Primary school	4.82	18.80
Middle school	4.78	24.38
High school	5.68	35.34
College	6.86	26.86
Observations	10,438	7,439

Note. All descriptive results were weighted to be nationally representative.

before first marriage increased from 5.05% for those married in the early-reform period to 24.54% for those married in the late-reform period. Table 1 also reports higher cohabitation rates among people with higher education for both marriage cohorts. In addition, CFPS data revealed that the average duration of cohabitation (not shown) in China was around 13 months for the early-reform marriage cohort and 10 months for the late-reform marriage cohort. The median duration of cohabitation was 6 months for both marriage cohorts.

Illustration of Propensity Score Matching Analysis

Table 2 presents available covariates used to predict odds ratios (ORs) of premarital cohabitation. As shown in Models 1 and 2, for both marriage cohorts, those who were more likely to cohabit included people living in economically developed areas, those who migrated from rural to urban areas, and those who chose their future spouses themselves. The findings are consistent with Yu and Xie’s (2015b) conclusion. Table 2 also reports that when cohabitation was uncommon, respondents who entered marriage in the early-reform period from high-status families were more likely to cohabit with their spouses, but this was not statistically significant for the late-reform marriage cohort. In short, PSM models show that cohabitators in China were more likely to be individuals with greater exposure to Western culture and fewer institutional constraints.

Table 2. Logit Models Predicting Odds Ratio of Cohabitation Among Two Marriage Cohorts

	Model 1, early reform		Model 2, late reform	
	(1980–1994)		(1995–2010)	
	OR	SE	OR	SE
Family background				
Education (ref. primary school)				
Middle school	0.87	0.11	1.13	0.09
High school	0.74	0.13	1.46***	0.17
College	0.49*	0.14	1.03	0.14
Father's education (ref. primary school)				
Middle school	1.11	0.19	1.05	0.08
High school	1.26	0.28	0.91	0.10
College	1.95*	0.61	0.88	0.17
Unknown	1.10	0.18	1.11	0.15
Father's party membership (ref. non-CCP)				
CCP member	0.80	0.12	1.01	0.10
Unknown	1.12	0.18	1.19	0.11
Institutional constraints				
CCP member (ref. non-CCP)	0.84	0.18	0.80	0.12
Migration experience (ref. always rural)				
Always urban	1.26	0.24	1.14	0.13
From rural to urban	1.91***	0.31	1.51***	0.16
Free mate selection (ref: arranged)	2.26***	0.30	3.13***	0.24
Sociodemographic features				
Age	0.92***	0.01	0.92***	0.01
Logged annual income	1.06**	0.02	1.04***	0.01
Minorities (ref. Han ethnicity)	0.81	0.20	0.84	0.11
Female (ref. male)	0.81**	0.07	0.87**	0.04
Religion affiliated (ref. no)	1.46	0.65	1.20	0.36
No sibling (ref. > 1)	0.47*	0.15	0.74**	0.08
Regional variance				
Provincial marketization index	1.34***	0.08	1.35***	0.06
Sampling region (ref. small provinces)				
Shanghai	0.79	0.19	0.95	0.18
Liaoning	0.84	0.17	1.17	0.16
Henan	0.50**	0.13	0.56***	0.07
Gansu	0.35**	0.14	0.40***	0.09
Guangdong	0.89	0.18	0.87	0.13
Constant	0.29*	0.18	0.29***	0.10
<i>n</i>	10,438		7,439	
Log likelihood	-1797		-3357	

Note. Given the more than 20% missingness of respondents' fathers' education and party membership, I included a category "unknown" indicating the missing values on these two variables. ref. = reference; CCP = Chinese Communist Party.

* $p < .05$, ** $p < .01$, *** $p < .001$.

After checking the overlapping of propensity scores, I ran optimal full matching in *R* to balance selection biases of covariates between cohabitators and noncohabitators to obtain the matched data. The imbalance checking through absolute standardized differences before and after matching showed that optimal

full matching balanced those distributions of covariates very well. Then I used matched data to run Cox proportional hazards models with all covariates used in PSM models to examine the aforementioned three perspectives on the relationship between premarital cohabitation and divorce in postreform China.

Comparative Analysis of Cox Proportional Hazards Models

Table 3 reports divorce hazard ratios (HRs) of first marriage before matching. The result from before-matching revealed that the relationship

between cohabitation and divorce changed across different marriage cohorts. Model 3 showed that, for the early-reform marriage cohort, prior cohabitation experience was significantly associated with subsequent

Table 3. Cox Models Predicting the Hazard Ratio of Marital Dissolution Before Matching

	Model 3, early reform		Model 4, late reform		Model 5, postreform	
	(1980–1994)		(1995–2010)		(1980–2010)	
	HR	SE	HR	SE	HR	SE
Cohabitation	2.37***	0.45	1.05	0.20	2.39***	0.43
Family background:						
Education (ref. primary school)						
Middle school	1.14	0.17	0.96	0.17	1.08	0.12
High school	1.46*	0.26	1.03	0.25	1.30	0.18
College	2.00**	0.47	0.67	0.21	1.21	0.23
Father's education (ref. primary school)						
Middle school	1.43*	0.23	1.26	0.22	1.31*	0.16
High school	1.53*	0.32	1.00	0.26	1.23	0.20
College	0.95	0.33	1.49	0.51	1.12	0.27
Unknown	1.11	0.22	1.51	0.37	1.23	0.18
Father's party membership (ref. non-CCP)						
CCP member	1.09	0.16	0.67	0.14	0.93	0.11
Unknown	1.23	0.22	0.95	0.18	1.11	0.14
Institutional constraints						
CCP member (ref. non-CCP)	0.36***	0.09	0.89	0.25	0.53***	0.10
Migration experience (ref. always rural)						
Always urban	3.24***	0.51	2.26***	0.47	2.84***	0.36
From rural to urban	2.06***	0.35	1.31	0.31	1.71***	0.24
Free mate selection (ref. arranged)	1.03	0.14	1.06	0.16	1.04	0.11
Sociodemographic features						
Age	0.97**	0.01	1.00	0.01	0.97**	0.01
Logged annual income	1.00	0.02	1.00	0.02	1.01	0.01
Minorities (ref. Han ethnicity)	1.80**	0.34	0.94	0.23	1.39*	0.21
Female (ref. male)	0.70**	0.08	0.78	0.12	0.72***	0.06
Religion affiliated (ref. no)	1.21	0.46	1.96	1.01	1.42	0.44
No sibling (ref. > 1)	0.96	0.23	0.79	0.19	0.78	0.14
Regional variance						
Provincial marketization index	0.95	0.07	1.03	0.10	0.98	0.06
Sampling region (ref. small provinces)						
Shanghai	1.52	0.46	0.83	0.33	1.29	0.32
Liaoning	1.81***	0.32	1.99**	0.44	1.87***	0.27
Henan	0.89	0.21	0.67	0.18	0.79	0.14
Gansu	1.21	0.31	1.03	0.33	1.14	0.23
Guangdong	0.42*	0.16	0.60	0.21	0.52*	0.14
Marriage cohort (ref. early reform)						
Late reform					1.56**	0.23
Interaction term test						
Cohabitor × Late Reform					0.42***	0.10
<i>n</i>	10,438		7,439		17,877	
Log likelihood	-3116		-1844		-5292	

Note. HR = hazard ratio; ref. = reference; CCP = Chinese Communist Party.

* $p < .05$, ** $p < .01$, *** $p < .001$.

dissolution of first marriage ($HR = 2.37, p < .001$). However, this positive relationship disappeared when cohabitation became more common for the late-reform marriage cohort as shown in Model 4 ($HR = 1.05, p > .05$). The interaction test in Model 5 showed that, when compared with cohabitators married in the early-reform period, the divorce hazard of first marriage decreased significantly ($HR = 0.42, p < .001$) for cohabitators married in the late-reform period. This provided evidence for the diffusion perspective on the link between cohabitation and marital dissolution. Nonetheless, it is still not reasonable to conclude that the causation perspective existed when cohabitation was uncommon because of selection biases that influenced premarital cohabitation.

The postmatching result in Model 6 from Table 4 showed that, after balancing selection factors that influence cohabitation, the association of cohabitation with divorce was still statistically significant for the early-reform marriage cohort ($HR = 2.29, p < .001$). For the late-reform marriage cohort, Model 7 still showed no significant association between premarital cohabitation and divorce ($HR = 1.52, p > .05$). Based on these postmatching results, we could conclude that after accounting for observed selection effects, cohabitation was positively associated with marital dissolution for those married in the early-reform period when cohabitation was uncommon. However, this positive relationship disappeared for the late-reform marriage cohort when cohabitation became more popular. This finding provided strong evidence for the diffusion perspective in postreform China.

DISCUSSION

This study advances existing literature by systematically examining the selection, causation, and diffusion perspectives on the relationship between premarital cohabitation and divorce in China. Previous research focusing mostly on Western societies has failed to account for the relationship in East Asian societies. This study reveals that, in postreform China, for those married in the early-reform period, when cohabitation was uncommon, cohabitation was positively associated with subsequent divorce. However, this relationship disappeared for those married in the late-reform period when cohabitation became

more common. The findings suggest variation in the association between cohabitation and divorce and provide the first strong empirical evidence in East Asian society for Liefbroer and Dourleijn's (2006) diffusion perspective. It should be noted that the cohabitation rate in contemporary China is lower compared to Western societies, and traditional Confucian culture, such as the patrilineal kinship system and the norm of filial piety, is still shaping the meaning and popularity of cohabitation.

This study also provides evidence for the causation perspective during the period in which cohabitation was uncommon, but this still needs further examination. Meanwhile, I found no strong evidence supporting the selection perspective, even though the divorce hazard for cohabitators decreased slightly after balancing selection factors during the early-reform period. In contrast to Western societies, my findings suggest that these observed selection factors that influence cohabitation, including migration experience and nonarranged marriages, were not necessarily linked to marital instability. This contradicts existing literature that suggests that cohabitators are a select group of individuals with divorce-prone characteristics in Western societies. I intend to address this puzzle in the future with a follow-up interview study. Nonetheless, this does not imply that the selection perspective could not explain the positive relationship between cohabitation and marital instability. It is likely that unobserved personality factors, such as delinquent behavior and unconventional attitudes, might affect the link between cohabitation and divorce to some extent. In addition, scholars have shown that economic conditions became more important in the determinants of marriage and cohabitation in postreform China (Yu & Xie, 2015a, 2015b). For instance, Yu and Xie (2015a) found evidence that the housing market plays a crucial role in delayed marriage entry. Although I cannot directly test the influence of the housing market on the relationship between cohabitation and divorce because of the lack of data, it is plausible that the sharp increase of housing prices may spur cohabitation when couples are not able to purchase housing units for marriage. These selection factors may further influence marital stability.

This study also reveals how macrostructural and cultural changes shape the link between cohabitation and marital dissolution. The

Table 4. Cox Models Predicting the Hazard Ratio of Marital Dissolution After Matching

	Model 6, early reform		Model 7, late reform	
	(1980–1994)		(1995–2010)	
	HR	SE	HR	SE
Cohabitation	2.29 ^{***}	0.47	1.52	0.32
Family background				
Education (ref. primary school)				
Middle school	1.22	0.23	0.60 [*]	0.13
High school	2.07 [*]	0.59	0.41 [*]	0.16
College	4.90 ^{**}	2.74	0.53	0.22
Father's education (ref. primary school)				
Middle school	1.27	0.22	1.07	0.22
High school	1.18	0.30	1.55	0.49
College	0.40	0.24	2.27	1.22
Unknown	1.04	0.21	1.36	0.39
Father's party membership (ref. non-CCP)				
CCP member	1.48	0.30	0.59 [*]	0.15
Unknown	0.98	0.20	0.55 [*]	0.14
Institutional constraints				
CCP member (ref. non-CCP)	0.45 ^{**}	0.13	1.67	0.60
Migration experience (ref. always rural)				
Always urban	2.57 ^{***}	0.60	1.75 [*]	0.47
From rural to urban	1.09	0.53	0.43 [*]	0.17
Free mate selection (ref. arranged)	0.41	0.25	0.06 ^{***}	0.05
Sociodemographic features				
Age	1.07	0.06	1.20 ^{***}	0.07
Logged annual income	0.94	0.04	0.91 ^{**}	0.03
Minorities (ref. Han ethnicity)	2.65 ^{***}	0.66	1.66	0.49
Female (ref. male)	0.89	0.17	1.04	0.20
Religion affiliated (ref. no)	0.75	0.36	1.12	0.53
No sibling (ref. > 1)	2.51	1.44	1.26	0.50
Regional variance				
Provincial marketization index	0.69	0.15	0.49 ^{**}	0.11
Sampling region (ref. small provinces)				
Shanghai	1.96	0.71	0.99	0.44
Liaoning	2.15 ^{***}	0.47	1.81 [*]	0.51
Henan	2.01	1.07	2.46	1.18
Gansu	3.70	2.99	7.33 [*]	5.81
Guangdong	0.47	0.19	0.82	0.36
<i>n</i>	10,438		7,439	
Log likelihood	-1106		-380	

Note. HR = hazard ratio; ref. = reference; CCP = Chinese Communist Party.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Chinese case suggests that the association between cohabitation and divorce is changing across different reform periods and the extent to which selection versus causation explains the relationship depends on specific structural, cultural, and historical contexts. During the

early-reform period, institutional and cultural changes, largely a result of economic reform, weakened the patrilineal kinship system (e.g., arranged marriages), allowing people with greater Western-culture exposure and fewer institutional constraints to choose their own

partners and cohabit before marriage. Nonetheless, cohabitation was still relatively rare and mostly seen as a precursor to marriage during this period. Although cohabitators might find their partners not ideally comparable, they were still forced into marriage because of social pressure. Therefore, I speculate that sliding into marriage rather than consciously deciding to marry could potentially lead to a higher risk of divorce as a result of an unfavorable attitude toward marriage. In this sense, cohabitators were a selective group of “norm conformists” with less commitment to marriage when compared with those married who did not cohabit (Hiekel et al., 2014). It is possible that these conformists might be less likely to enter into marriage under a different cultural milieu in Western societies. This further indicates that cohabitation itself might not increase the risk of divorce, and it is the cultural environment that created a “selection” effect, pushing cohabitators into marriage and producing a situation that causes cohabitators to be less committed to subsequent marriage relative to noncohabitators.

During the late-reform period, particularly after China joined the World Trade Organization in 2001, Chinese society became more westernized, and family behaviors began to converge with those in Western societies (Yu & Xie, 2015b). Cohabitators were not required to marry to conform to social norms. Given that cohabitation became relatively popular, it is reasonable to assume that cohabitation might begin to serve as a trial marriage, which strengthens the marital bond (Hiekel et al., 2014). Critics may argue that this is not a sufficient explanation because the positive link between cohabitation and marital instability still exists in Western countries even though cohabitation is regarded as a trial marriage. Unlike Western countries, despite the growing acceptance of divorce in China, divorce was still not a normative and widely accepted behavior because of the cultural norms of Confucianism. In this sense, the link between cohabitation and marital dissolution might disappear when cohabitation became more popular but divorce was still not widely accepted.

Readers should be cautious when interpreting these results because the findings can only be generalized to East Asian societies and other developing countries with similar Confucian cultural norms. In addition, readers should be aware that this research has several limitations. First, this article focuses solely on cohabitators

before first marriages, and thus these results cannot extend to remarriages. Second, CFPS 2010 did not collect respondents' complete cohabitation histories, so the effect of serial cohabitation and turbulent partnership on the risk of subsequent marital instability remains unknown. However, it is reasonable to assume that serial cohabitation was rare during the early-reform period (Yu & Xie, 2015b), and it might influence subsequent divorce during the late-reform period. Third, further evidence on the nature of cohabitation is needed to better understand the relationship between cohabitation and divorce in postreform China, given that cohabitation plays a different role in marital instability when it is a precursor to marriage, a trial marriage, or an alternative to marriage. Last, previous studies have shown that the relationship between cohabitation and divorce varies across different gender groups, but this goes beyond the scope of this research (Yu & Xie, 2015b). I leave these limitations to future research.

Despite these limitations, the findings in this article provide a starting point for examining the association of cohabitation with divorce and contribute to our understanding of recent family changes in postreform China.

NOTE

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Figure S1. Propensity Score Overlapping Check for Two Marriage Cohorts between Cohabitators and Non-cohabitators.

Figure S2. Predicted Divorce Hazards for Two Marriage Cohort by Cohabitation.

Figure S3. Predicted Divorce Hazards for Two Marriage Cohort by Cohabitation and Gender.

Figure S4. Sensitivity Analysis: Contour Plot for the Qualitative Change of the Cohabitation Effect in China.

Table S1. Imbalance Checking of Covariates before and after Optimal Full Matching for Early-Reform Marriage Cohort (1980-1994).

Table S2. Imbalance Checking of Covariates before and after Optimal Full Matching for Late-Reform Marriage Cohort (1995-2010).

Table S3. Logit Models Predicting Odds Ratio of Cohabitation Using Multiple Imputed Data.

Table S4. Cox Models Predicting Hazard Ratio of Marital Disruption Using Imputed Data.

Table S5. Cohabitation Rate before First Marriage by Marriage Cohort and Education.

Table S6. Logit Models Predicting Odds Ratio of Cohabitation among Two Marriage Cohorts.

Table S7. Cox Models Predicting Hazard Ratio of Marital Disruption before Matching.

Table S8. Cox Models Predicting Hazard Ratio of Marital Disruption after Matching.

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