When the State Retreats: Work Units, Marital Regulation, and Rising Divorce Rates in China [*]

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Abstract

The high and rising divorce rate in China is not easily reconciled with traditional theories that emphasize the role of modernization in changing family life. By reformulating the state social engineering theory, this paper argues that the retreat of the state from private life has contributed to China's rising divorce rates in the past four decades. A divorce reform that simplified divorce procedures and the declining significance of the work unit are two mechanisms through which the retreating state may influence divorce rates. Results from province-level panel data set suggest that smaller share of employment in state and collective work units is associated with higher divorce rates. The diminishing function of institutional control accounts for the effect of the work unit on rising divorce rates.

Key words: Divorce; work units; state regulation; divorce law; Chinese families

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Introduction

Traditionally a society with universal marriage and low divorce rates (Yang 1959), China has witnessed substantial increase in divorce rates in the past four decades. Figure 1 shows that the crude divorce rate in China has risen rapidly and spiked upward after 2003. A further comparison of the crude divorce rate in China with that of other societies suggest that in recent years, China's divorce rate is not only the highest among East Asian societies, but also higher than many European countries such as the UK and Germany and is close to the divorce rate in the US, where divorce rates have stabilized or declined after a period of sharp increase since the 1960s (Cherlin 2017). Societal-level explanations for rising divorce rates have focused on economic modernization and ideational shifts associated with modernization processes (Goode 1993; Thornton 2005; Trent and South 1989; Wang and Schofer 2018; Wang and Zhou 2010).

In this article, I develop the argument that the retreat of the state from private life has contributed to rising divorce rates in China. Until a divorce reform in 2003, people needed permission from their employer to divorce. For many people, their employer was their work unit, or *danwei*, a socialist workplace characterized by lifetime employment and comprehensive social and political functions (Lu 1989). The work unit has declined significantly since the 1980s. To understand the role of the state in rising divorce rates, I extend Whyte's state social engineering theory of family change beyond its emphasis on state intervention into private life to incorporate the role of a retreating state and its interaction with the mechanisms through which the state deregulates family life. As an institutional apparatus of state regulation, the declining significance of the work unit has changed the institutional environment that the family is embedded in. When the state further

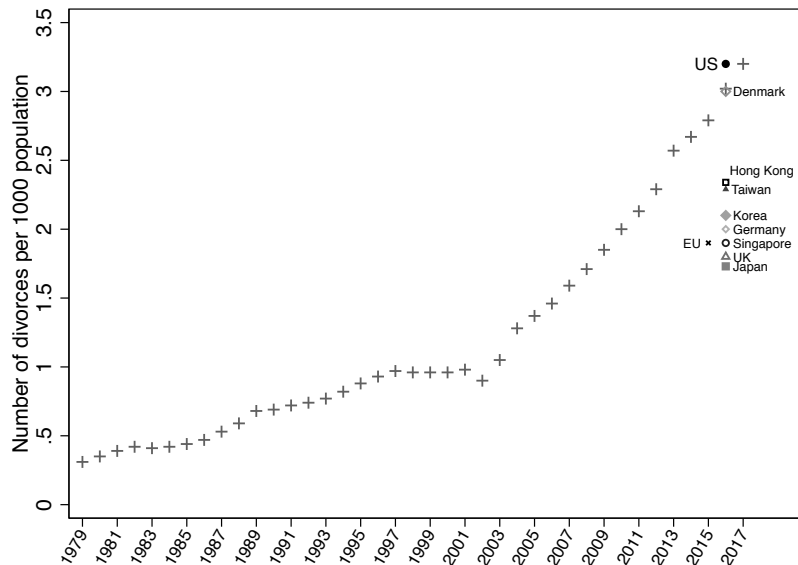simplified divorce procedures in the 2003 reform, the divorce rate spiked.

Figure 1. Crude Divorce Rates in China from 1979 to 2017

Source: China, China Civil Affairs' Statistical Yearbook; South Korea, Statistics Korea; Japan, Ministry of Health, Labor and Welfare; Taiwan, Department of Household Registration; Hong Kong, Census and Statistics Department; The US, CDC National Vital Statistics System; Singapore, Department of Statistics, Ministry of Trade & Industry; EU, Denmark, Germany, and UK, Eurostat.

I test this argument by disentangling the effect of the decline of work unit, in combination with an important divorce reform in 2003, on China's divorce rates using a unique province-level panel data set from 1980 to 2016. Drawing on estimates adjusting for economic modernization, developmental idealism, and internal migration, I quantify the contribution of declining work unit and the 2003 divorce reform to rising divorce rates in China. Furthermore, by connecting the welfare and control functions of the work unit with two types of divorce, mutual consent divorce though civil affairs authority and contested divorce through courts, I also provide evidence to understand the mechanism through which the work unit may affect the divorce rate.

This study contributes to several strands of the literature. First, through extend-

ing Whyte's theory of state social engineering, this paper brings the role of the state into the analysis of changing family life, which is neglected in modernization theory and developmental idealism theory (Goode 1993; Thornton 2005). Second, this study is related to a large empirical literature on explaining the rise of divorce rates across the world (Breault and Kposowa 1987; Hirschman and Teerawichitchainan 2003; Wagner, Schmid, and Weiß 2015). It provides empirical evidence for explaining rising divorce rates in China, which is not addressed by recent studies on divorce in China that examine individual-level predictors of divorce (Ma, Turunen, and Rizzi 2018; Zhang 2017). Finally, this study contributes to the literature on the work unit and social transformation. While the existing empirical literature on the work unit has focused on its implications for social stratification and status attainment (Bian and Logan 1996; Lin and Bian 1991; Zhou 2004), this study is the first to document the impact of work unit on divorce rates in China.

Modernization and Rising Divorce Rates

Goode (1963) argued that modernization is the ultimate driving force of family changes. As industrialization and urbanization spread, Goode believed that family patterns in developing countries would follow the Western model. He predicted that in less developed societies where divorce was rare, the divorce rate would rise along with the modernization process, while in societies with high divorce rates, they would decline. Although Goode failed to anticipate the continuing rise of divorce rates in the 1960s and 1970s in the West (Cherlin 2012), his prediction that divorce rates would increase with higher levels of economic development seems to be correct for China. Indeed, after four decades of economic growth, China's crude divorce rate has risen from 0.35 in 1980 to 3.2 in 2017, a higher level than many

Western countries.[1]

However, the impacts of modernization on divorce rates should be interpreted with caution. When examining divorce rates within China, higher levels of socioeconomic development are not necessarily associated with higher divorce rates. Figure 2 maps crude divorce rates across China in 1985, 1995, 2005, and 2016. A notable pattern found in the divorce maps is that there is no direct relationship between the level of economic development and the divorce rate: while provinces along the east coast are more economically developed, their divorce rates are not the highest. On average, Xinjiang has the highest divorce rate in China, which has to do with its large proportion of Muslim population.[2] These patterns are consistent with previous studies on China's regional differences in divorce rates (Xu and Ye 2002; Zeng and Wu 2000). This apparent discrepancy between levels of economic development and divorce rates in China calls for attention to alternative explanations for family changes.

While Goode's modernization theory underlines the role of economic development, the developmental idealism (DI) theory emphasizes that the dissemination of ideas and beliefs about developmental hierarchy is the cause of family change (Thornton 2001, 2005). Thornton argues that developmental idealism spreads the positive view of the Western model of modernization and its family patterns associated with higher levels of development. Latecomers to family change can be influenced by Western norms of modern and postmodern family life such as late marriages, low fertility, and divorce. Prior research has suggested that DI has been

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[1]The crude divorce rate can be affected by the population age structure. A better measure to adjust for the age structure is the refined divorce rate, which is measured by the number of divorces per 1000 married women. In 2015, the refined divorce rates in China, US, UK, Japan, South Korea, and Singapore are 9.2, 11.9, 8.5, 7.2, 8.8, and 6.6, respectively.

[2]For ethnographic studies on marriage and family of Hui Muslim and Uyghur Muslim in China, see Gladney (1996), Bellér-Hann (2008), and Dautcher (2009).

widespread globally and has impacts on various aspects of family life including divorce (Allendorf and Thornton 2015; Lai and Thornton 2015; Thornton and Xie 2016; Thornton et al. 2012; Wang and Schofer 2018).
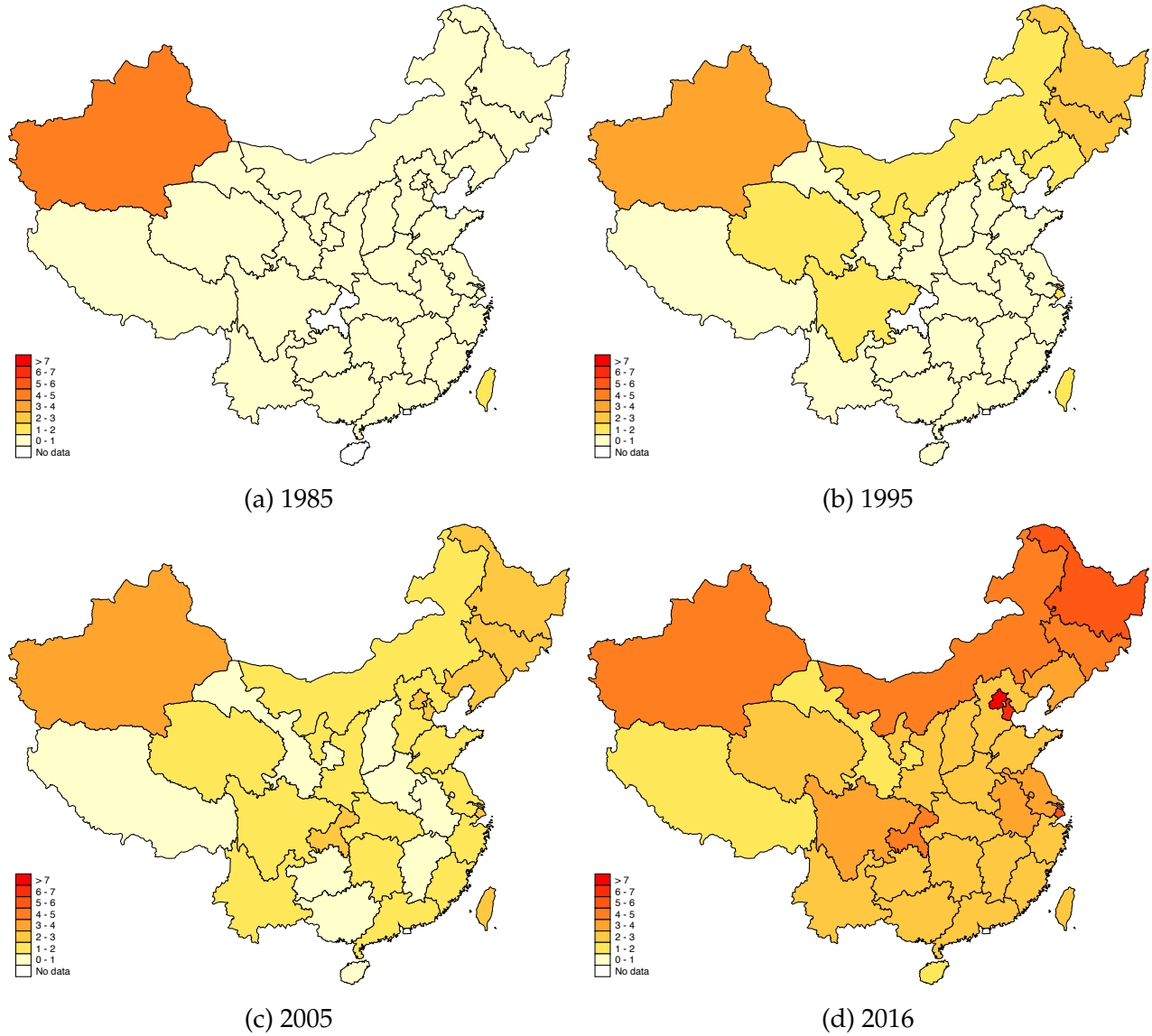

(a) 1985

(b) 1995

(c) 2005

(d) 2016

Figure 2. Crude divorce rates across China, 1985 to 2016

Note: Data on crude divorce rates come from author's calculations based on China Civil Affair's Statistical Yearbook. Province shapefiles come from WorldMap developed by the Center for Geographic Analysis at Harvard University (http://worldmap.harvard.edu/).

State Social Engineering of Family Life

While the state has been assigned a secondary role in family change in both modernization theory and developmental idealism theory, Whyte (2005) proposes a theoretical framework incorporating the role of the state in the transformation of family life, which he calls state social engineering. Whyte argues that social engineering by the state can be achieved through two mechanisms. First, the state can promote family changes directly through family laws and administrative regulations. Second, when the state initiates changes in social institutions other than the family for unrelated purposes, these state actions may change the institutional environment that the family is embedded in, thus producing unintended consequences for family life indirectly.

The state social engineering theory helps explain why radical family changes occurred along with the strengthening of traditional family values in Mao-era China. On the one hand, as a direct effort of the state to foster family change, the Marriage Law of 1950 granted people the freedom to marry and divorce and undermined traditional patriarchal authorities (Stacey 1983). More than 1.1 million divorces were granted in 1953, a figure unequaled in Chinese history until 1996.[3] Also, by requiring that all divorces be formally registered with civil affairs authority or local courts and all petitions for divorce should be mediated by party and government agencies, the 1950 Marriage Law empowered the socialist state to engage in private life (Friedman 2006). On the other hand, strong intergenerational ties were maintained resulting in part from the household registration system that restricted migration and the work unit that assigned jobs and housing (Davis 1993;

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[3]See the People's Daily of April 13, 1957 and estimation by Meijer (1971). Divorce registration through civil affairs authority in 1953 can be found at the Civil Affairs' Statistical History Materials Compilation (1949-1992).

Whyte and Parish 1984).

Since the market reforms introduced in 1978, the state has retreated from close supervision of private life, especially marriage (Davis 2014b; Yan 2003). This retreat is reflected in the state's shifting focus to economic development (Walder 1995). Also, it should be noted that the state has retained its role in regulating marital fertility through birth planning policies (Davis 2014a; Palmer 1995, 2007).

I extend Whyte's state social engineering framework to explain how the retreat of the state from private life has contributed to rising divorce rates in post-Mao China. The retreat of the state is characterized in a combination of direct and indirect change mechanisms, which refer to the 2003 divorce reform that greatly simplified divorce procedures and to the declining work unit, respectively. I further argue that the two aspects of state efforts do not operate independently from each other. Rather, the declining work unit interacts with the divorce reform, contributing to increasing divorce rates.

The Removal of Barriers to Divorce: the 2003 Reform

There are two ways to file for divorce in China: divorce by agreement through civil affairs authority and divorce by litigation through courts. Divorce by agreement, or mutual consent divorce, was less popular than juridical divorce before 2003, due to its stringent requirements. Prior to fall 2003, divorce applicants needed a certificate with written permission from their work units to obtain a divorce through civil authority. Moreover, a divorce would be granted by civil authority only after an extensive mediation process was proven unsuccessful. Different from mediation in the Western contexts, civil mediation in China was intended to resolve family disputes and to save the marriage (Palmer 2007). By contrast, although courts will

also conduct mediation for divorce applicants, the certificate from work units is not necessary for contested divorce.
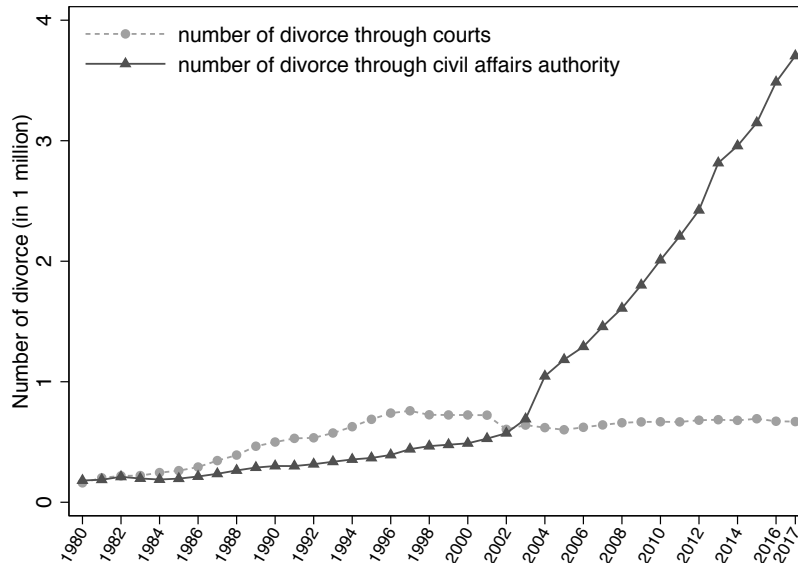

Figure 3. Number of divorce through civil authority and courts, 1980 to 2017
Source: China Civil Affairs' Statistical Yearbook.

In 2003, a reform on divorce registration regulations removed all these requirements, including work unit permission and civil mediation. Under the more liberal divorce procedures after the reform, a divorce can be granted quickly through civil authority when mutual agreement is achieved between a couple. The impact of the divorce reform seems to be substantial. As can be seen from Figure 1, the dramatic increase in the crude divorce rate paralleled the timing of the administrative reform on divorce registration in 2003. Figure 3 graphs the number of divorces granted by civil authority and courts. The figure shows that mutual consent divorce through civil authority is the major driving force of rising divorce rates.[4] In other words, among all the divorce cases, more and more couples choose to get divorced in a

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[4]The number of divorce through courts has also increased since the 2000s, but the magnitude of the increase is relatively small compared to the number of divorce through civil authority.

non-adversarial manner under mutual consent, where there are no disputes over child custody and property division, and both parties agree to divorce.

The Declining Significance of the Work Unit

The transformation of the work unit began with the economic reforms in 1978. Remarkable change can be observed in the proportion of the workforce employed by state and collective sectors. While almost all urban workers were employed by state-owned and collectively owned work units in 1980, the number declined to about 16 percent in 2016.[5] The rapid decline of the state and collective sectors has been accompanied by the growth of private sector and informal employment.[6] The purpose of the transformation of the work unit was unrelated to family life; yet the declining of the work unit has great implications for family life as it has transformed the institutional environment that the family was embedded in.

How might the decline of the work unit affect divorce rates? The literature suggests two pathways. The first pathway relates to the work unit's position as a state apparatus of institutional control. Workers were dependent economically on the work unit, politically on the party and work unit management, and personally on work unit leaders (Walder 1986). While young people gained more freedom of spouse selection from their parents after the Communist victory in 1949, the freedom, to some extent, was offset by a required permission from their work units to marry and divorce (Li 1993; Whyte 1993; Xu and Whyte 1990). Yet the work unit was motivated to keep households intact because of its role in allocating housing during a time of severe housing shortage (Davis 2010). Moreover, the work unit

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[5]Calculated by the author based on statistics provided by the China Labor Statistical Yearbook.

[6]See Park and Cai (2011) for a detailed discussion on the size of private sectors and informal employment in China.

maintained a personal dossier (*dang'an*) for every member of the work unit. These dossiers include information such as education, family background, achievements, mistakes, and political attitudes (Yang 2011). The control over the dossier gave the work unit arbitrary power to discipline its members (Shaw 1996). We might therefore expect that the work unit was able to prevent husbands and wives who mutually wished to divorce from doing so. As the work unit declined and its institutional control over private life diminished, we would therefore expect a rise in mutual consent divorces, which would be registered through civil affairs authority. Figure 3 shows that mutual consent divorces through civil affairs authorities accounted for the majority of the increase in divorces since 2003.

The second pathway relates to the work unit's function of welfare provision. The work unit provided its members with permanent employment and social welfare including child care, housing, health care, and pension (Lü and Perry 1997). In 1978, only 37,000 out of 63 million workers in state-owned units quit or were fired. By contrast, around half a million state workers left the state-own sector through retiring in 1978 (Naughton 1997). As to how divorce rates might change with the decline of the work unit and its welfare provision function, there are competing views. The loss of job security and social welfare benefits could lead to less stable economic conditions that increase marital conflict and therefore divorces through courts. Yet employment instability and economic hardship could also lead to more mutual consent divorces, where couples have no disputes over child custody and property division, and both parties agree to divorce.

Data and Variables

I combine various sources to construct a panel dataset on divorce registration, percentage of employment in state and collective work units, and other provincial characteristics for China's 31 provinces between 1980 and 2016. Table 1 summarizes data sources of main variables used in this study. These data cover the period of almost four decades, when China underwent dramatic economic and social transformation. Among these provinces, Hainan became a separate province in 1988 and Chongqing was separated from Sichuan in 1997. Accordingly, Hainan has observations from 1988 and Chongqing and Sichuan have observations from 1998. The results are robust when Chongqing and Sichuan are combined as one case.

Table 1. Data Sources for the Main Variables Used in the Study

Variable	Definition	Data sources[a]
Crude divorce rate	Number of divorce registration per thousand *hukou* population	1, 2, 3, 4
Regulation intensity	Disapproval rate for divorce application through civil authority in 1998	2
Work unit	Percent employed by state/collective work units	3, 5, 6
Layoff	Percentage of laid-off workers in state-owned enterprises	6
Industrialization	Percentage of employment in secondary and tertiary sectors	5, 6
Urbanization	Percent living in urban areas	1, 3, 7, 8
International marriage	International marriage per thousand marriage registration	2
International tourism	Percentage of foreign exchange earnings from tourism in GDP	1, 5, 9
Migration	Percentage of in/out migrants	1, 3, 4
Child dependency ratio	Number of children per hundred people of working age	1, 3, 4

[a] Data sources:
1. China Statistical Yearbook.
2. China Civil Affair's Statistical Yearbook.
3. China Population and Employment Statistics Yearbook.
4. Almanac of China's Population.
5. China Compendium of Statistics: 1949-2008.
6. China Labor Statistical Yearbook.
7. Zhou et al (2005).
8. Lin (2010).
9. The Yearbook of China Tourism Statistics.
The data are supplemented with local gazetteers and provincial statistical yearbooks. Major data sources can be found at National Bureau of Statistics of China (http://www.stats.gov.cn/) and China Statistical Yearbooks Database (http://www.cnki.net/).

The main dependent variable is a modified version of the crude divorce rate,

which is measured by number of divorces per thousand population with local household registration status (*hukou*).[7] More specifically, the numerator, or number of divorces, consists of divorces registered through the civil affairs authority and divorces obtained through court in the province. The denominator here is the *hukou* population in the province, which is different from the resident population. The resident population refers to the number of people living in a province regardless of the places of *hukou* registration, and is estimated through population surveys. By contrast, *hukou* population is based on *hukou* registration and is reported by the Ministry of Public Security. I choose *hukou* population over resident population to calculate the crude divorce rate for two reasons. First, divorce registration in China is *hukou*-based, which means that people must divorce in the jurisdiction where they have proper *hukou* registration, which is not necessarily where they are living. Indeed, divorce petitions will not be accepted in county A if the applicant's *hukou* is registered in county B, even if the two counties are in the same prefecture of the same province.[8] Therefore, the population at risk of divorce in a province is not the total resident population but rather the population with the appropriate *hukou* status. As shown in Figure 4, if the total resident population is used as the denominator, crude divorce rates would be underestimated for provinces with a large proportion of migrants who cannot register divorce there, such as Jiangsu and Guangdong. Likewise, provinces with people migrating out (e.g., Anhui and Guizhou) would have falsely higher rates of divorce because the migrants with *hukou* for these provinces would not be included in the denominator. Second, the rate of provincial intermarriage is low. According to the China population census of 2000, 94 percent of marriages take place between men and women from the same

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[7]See Cheng and Selden (1994) for a thorough discussion of China's *hukou* system.

[8]In the cases that the husband and the wife's *hukou* are not in the same county or district, divorce can be registered in either place of *hukou* registration.

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province.[9] Therefore it is expected that a large majority of people still find their spouse within the same province. Consequently, using the *hukou* population as the denominator should provide a more accurate measure of divorce rates across provinces.

The crude divorce rate, however, can be affected by the age structure of the population. An improved measure is the refined divorce rate, in which the denominator is number of married women aged 15 and above. However, the size of the married population is not available on the provincial level by *hukou* status. I use the refined divorce rate with the resident population in the denominator in a supplementary analysis reported in the Appendix. The main results are robust when the refined divorce rate is used as the dependent variable.

The main independent variable is the percentage of workers employed by state and collective work units. State work units include party and government agencies, public institutions (e.g., universities, hospitals), and state-owned enterprises (Wu 2013). Collective work units mainly refer to collectively owned enterprises. In a robustness test reported in the Appendix, I redefine the measurement of the work unit by excluding collective work units.

Modernization is measured by industrialization and urbanization rate. Industrialization rate refers to the percentage of employment in secondary and tertiary sectors. Measures of China's urbanization rate from annual statistical reports are incomparable, as the National Bureau of Statistics has changed the statistical criteria for different censuses (Zhou and Ma 2003). To remedy the problem of data incomparability, I adopt the adjustments of urbanization rates made in the relevant geography literature (Lin 2010; Zhou, Yu, and Tian 2005).
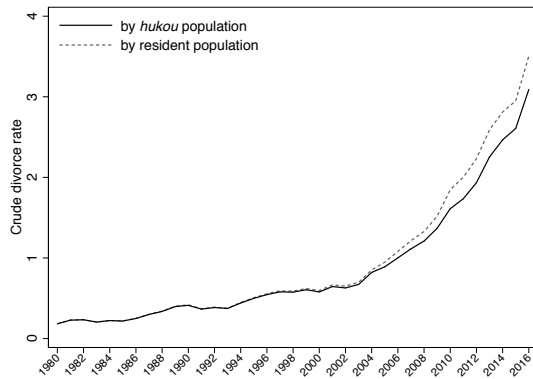
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[9]Calculated by the author based on 1 percent sample of the 2000 China population census.
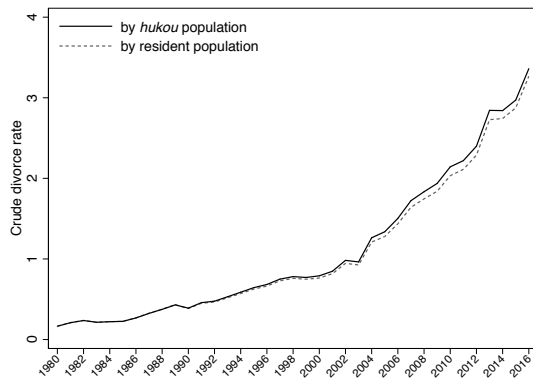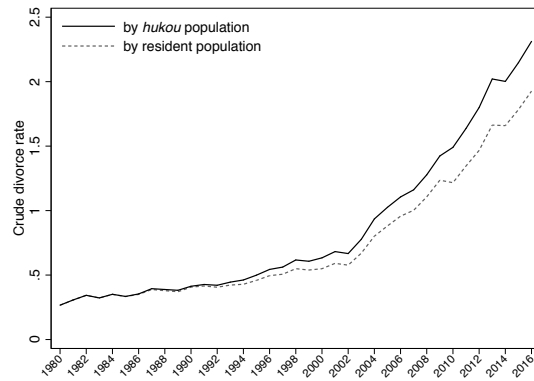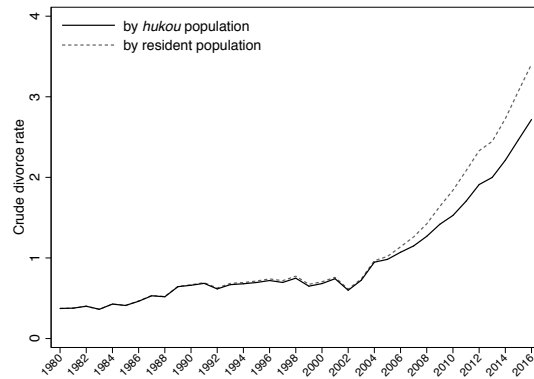
Figure 4. Crude Divorce Rates Calculated by Resident Population and *Hukou* Population

Source: Author's calculations based on China Statistical Yearbook and China Civil Affair's Statistical Yearbook.

Most of the literature on developmental idealism has used individual ratings of development, or individual perceptions of the relationship between development and family attributes as measures of DI (Thornton et al. 2016). These measures are not available for this study design. Instead, I searched for mechanisms through which the message of DI may have been spread.[10] International tourism and in-

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[10]Existing literature also suggests that modern mass media including newspapers, radio, television programs, and the Internet may facilitate the dissemination of developmental idealism (Allendorf 2013; Jensen and Oster 2009). The measure of Internet coverage is also available. However, I argue that Internet is not a good measure of DI in the Chinese context for three reasons. First, Internet was

ternational marriage are used as proxies for such mechanisms. With respect to international marriage as a measure of developmental idealism, social attitudes toward transnational marriage signal diffuse social acceptability of non-traditional family norms (Hu 2017). Moreover, the incidence of international marriage itself reflects the opportunity structure of global exposure in different regions (Farrer 2008; Hu 2016). Since the official statistics provides no information about the countries of origin of foreign marrying partners, international marriages that involve brides from less developed countries such as Vietnam can threaten the validity of using international marriage as a measure of DI. However, I argue that this possibility will not undermine the international marriage variable for three reasons. First, marriages between citizens of mainland China and citizens of Hong Kong, Macao, and Taiwan are the most common type of international marriages registered in China. Guangdong and Fujian province, which are geographically close to Hong Kong, Macao, and Taiwan, have the largest number of registered international marriages. Second, the majority of Chinese citizens in international marriages are women, which suggests that marriages between foreign brides and male Chinese citizens are not the primary type of international marriages registered in China. Third, using administrative marriage registration data in Beijing and Shanghai, researchers have shown that more than 80 percent of the foreign nationals in international marriages were from developed countries (Ding et al. 2004; Gao, Zhang, and Zhu 2013).

Inter-province migration is measured in two steps. First, I create a dummy variable to denote in-migration and out-migration provinces. Next, I calculate the

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introduced to China in the late 1990s, thus using Internet coverage cannot capture the influence of DI in the 1980s and early 1990s. Second, Internet may not be a good proxy for developmental idealism because of the Internet censorship in China. Third, apart from being the medium of DI, Internet can also be viewed as a tool of communication, which may strengthen the ties among family members and decrease the divorce risks. But I did include the Internet coverage in the analysis and found small but negative effect of Internet coverage on divorce rates. Removing the Internet coverage variable does not affect the main results of this study.

magnitude of net inter-province migration in each province. For those out-migration provinces, the net out-migration rate is calculated as $\frac{hukou\ population - resident\ population}{hukou\ population}$, which can be interpreted as proportion of the population with *hukou* for an out-migration province who are absent. Likewise, for in-migration regions, the net in-migration rate is calculated by $\frac{resident\ population - hukou\ population}{resident\ population}$, which can be interpreted as the proportion of the resident population that does not have appropriate *hukou* for a in-migration province. China has witnessed massive internal migration from villages to cities, from inland and western provinces to coastal provinces in the east (Fan 1999). Yet, the majority of migrant population migrate without changing their *hukou* status (Chan 2013), which has implications for marriage and divorce in both sending and receiving places. For out-migration places, existing literature suggests that lower levels of social integration associated with residential mobility have negative effects on marital stability (Breault and Kposowa 1987), which is consistent with individual-level evidence in China (Bhargava and Tan 2018). Moreover, to cope with the reality that education for their children is difficult to access due to *hukou* status, many migrant families have adopted a split-household strategy, in which husband migrates to city and wife stays in village for caring responsibility (Fan 2007). The physical separation of family may cause disruption to family relations and increase divorce risks (Li 2018). For in-migration provinces, while urban men with local *hukou* gain more advantages in the marriage market (Sharygin, Ebenstein, and Gupta 2013), inter-*hukou* marriages may be less stable due to the social hierarchy created by the *hukou* system (Lui 2016; Tan and Susan 2004). Another unintended consequence of internal migration under the *hukou* system is fake marriages and divorces in exchange for local *hukou* status (Fu and Wang 2018).

Table 2 presents descriptive statistics for the analytic sample, which consists of 1103 province-year cases. The mean crude divorce rates is around 1.4 per thousand

people. Compared to the pre-reform period, the average crude divorce rate is about 1.5 times higher after the divorce reform. Moreover, the fraction of people employed in state and collective work units is substantially smaller after 2003, a 60 percent decrease from the pre-reform period.

Table 2. Means and Standard Deviations of the Main Variables Used in the Analyses

	Total		Pre-reform		Post-reform	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Crude divorce rate	1.37	1.10	.88	.71	2.22	1.14
Refined divorce rate	4.69	3.44	3.37	2.83	6.99	3.18
Regulation intesity	32.92	10.25				
Work unit	65.90	28.48	84.39	15.54	33.79	13.20
Layoff	8.72	7.90	9.87	7.97	3.65	5.07
Industrialization	50.63	18.80	44.61	17.91	61.09	15.46
Urbanization	40.23	18.08	34.09	16.85	50.88	14.92
International marriage	5.00	8.91	4.93	9.94	5.11	6.76
International tourism	.78	1.31	.83	1.55	.69	.69
Percent in/out migrants						
in-migration provinces	4.79	7.82	2.80	3.66	8.71	11.52
out-migration provinces	3.70	4.29	1.38	1.89	6.66	4.65
Child dependency ratio	36.00	14.34	42.95	12.79	23.94	7.02

Note: 1103 province-year observations for the total sample. 700 observations for the pre-refom period; 403 observations for the post-reform period. 335 observations for the variable *Layoff*, from 1995 to 2005.

Analytic Strategies

To examine the impact of work unit on divorce rates, I first estimate the following specification:

$$DivorceRate_{p,t} = \beta Workunit_{p,t} + \alpha Post_t + \theta X'_{p,t} + \varepsilon_{p,t} \tag{1}$$

where $DivorceRate_{p,t}$ is the crude divorce rate in province p and year t. $Workunit_{p,t}$ denotes the share of employment in state and collective sectors. $Post_t$ is a dummy

for the post-divorce reform years from 2004 to 2016. $X'_{p,t}$ is a vector of time-varying provincial characteristics, including levels of industrialization and urbanization, international tourism, the prevalence of international marriage, and inter-province migration. Quadratic terms of industrialization and urbanization are included to allow for their nonlinear effects on the divorce rate. I also include child dependency ratio, defined as the number of children per hundred people of working age, to reduce the effect of age structure on the crude divorce rate. I estimate this model with ordinary least squares (OLS) regression.

Furthermore, I add province fixed effects and year fixed effects to the model:

$$DivorceRate_{p,t} = \beta Workunit_{p,t} + \theta X'_{p,t} + \lambda_p + \gamma_t + \varepsilon_{p,t} \qquad (2)$$

Province fixed-effects (λ_p) can remove all time-invariant province-specific heterogeneity that are correlated with both work unit and divorce rates. For example, provinces shaped by a particular culture may have smaller share of employment in state/collective work units and may be more likely to have higher divorce rates. Year fixed effects γ_t can absorb unobserved shocks common to all provinces in year t (e.g., policy changes at national level and macroeconomic shocks). Naturally the $Post_t$ dummy is redundant when year fixed effects γ_t are included. I estimate this model with a two-way fixed effects approach. Province fixed effects explain about 40 percent of the variations in the divorce rates, leaving a large proportion of the variance to be explained within provinces. To capture the fact that there are two periods (i.e., before and after the divorce reform in 2003) and to address the concern of serial correlation in residuals within provinces (Bertrand, Duflo, and

Mullainathan 2004), I cluster the standard errors by *Province* × *Period*. Nevertheless, the results are robust to clustering standard errors at province level.

The divorce reform in 2003 eliminated requirements of written permission from work units and civil mediation, therefore removing barriers to divorce through civil affairs authority when mutual consent was achieved. To examine the impact of the divorce reform, a second dimension of variation is required since the reform was national and not staggered (in October 2003). Here I exploit variations in regulation intensity, measured by the disapproval rate for divorce application through civil authority in 1998.[11] Before the reform, divorce applications would be rejected by civil affairs authority if either the required documents (such as the certification from the work unit) were not complete or civil mediation was unproductive. Therefore, regulation intensity measures the difficulty of obtaining a divorce through civil affairs authority before the reform. This dimension of variation permits a difference-in-differences strategy (Angrist and Pischke 2009), which compares province-level crude divorce rates before and after the divorce reform between provinces with higher and lower pre-reform disapproval rate.

The main difference-in-differences specification is the following:

$$CivilDivorceRate_{p,t} = \delta Intensity_p^{1998} \times Post_t + \beta_1 Workunit_{p,t} + \beta_2 Workunit_{p,t} \times Post_t$$
$$+ \theta_1 X'_{p,t} + \theta_2 X'_{p,t} \times Post_t + \lambda_p + \gamma_t + \varepsilon_{p,t} \quad (3)$$

where $CivilDivorceRate_{p,t}$ is the crude divorce rate calculated by the number of divorces through civil affairs authority. I use $CivilDivorceRate_{p,t}$ as the dependent

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[11]Disapproval rates from 1999 to 2002 were not reported, therefore the year of 1998 is closest to the reform. As I will show in robustness checks, disapproval rates were relatively stable in the 1990s.

variable because the 2003 divorce reform should only affect those mutual consent divorce through civil authority, not judicial divorces. $Intensity_p^{1998} \times Post_t$ is the interaction between the reform intensity and a dummy variable for years after 2003. The coefficient δ on this interaction identifies the effect of the 2003 reform on the divorce rate. This specification also allows the effect of the work unit and other time-varying covariates to vary after the reform, which mitigates concerns that the reform also had impacts on other social dimensions.

In Equation 3, while the inclusion of year fixed effects γ_t absorbs unobserved shocks common to all provinces, it also robs some of the effect of the divorce reform because the time trend is part of the treatment effect. To ensure that the treatment effect is not diluted by the time trend, I use models with constrained coefficients for year effects. In these constrained models, year effects are estimated only using pre-reform data, thus eliminating the impact of post-reform time effects. In this scenario, the effect of the divorce reform is less likely to be weakened by the time shocks. I also present different ways to adjust for time shocks in the Appendix, and similar patterns are observed across these model specifications.

Main Results

Results presented in Table 3 suggest that the work unit is a strong predictor of rising divorce rates. The first bivariate model suggests that the work unit accounts for 41 percent of the variance of the crude divorce rate. Model 2 includes other time-varying covariates. When further including province fixed effects in Model 3, the coefficient on work unit is nearly unchanged. The effect of the work unit increases after adjusting for year fixed effects in Model 4. The point estimate suggests that ten percent decrease in employment in state and collective sectors predicts about

.15 more divorce per thousand people in an average province year. The mean and standard deviation of the crude divorce rate are 1.4 and 1.1, respectively. Therefore, the magnitude of the work unit effect is around 11 percent of the mean and 14 percent of the standard deviation. The average employment in state and collective work unit decreased from 94 percent in 1990 to 21 percent in 2016. This decline in work unit is associated with a rise in the crude divorce rate by 1.1, accounting for 45 percent of the actual increase in the crude divorce rate during this period. Figure 5 plots the heterogeneity of the work unit effect by four economic regions across China: northeast, western, central, and east coast.[12] The negative work unit effect is largest in the northeast region, which was the heartland of state socialism. That is, in the region where the socialist work unit was most dominant, the decline of the work unit is also associated with the largest increase in divorce rates. The significant association between declining work unit and rising divorce rates is also observed for the east coast and the central region, but not for the western region.

The results also provide some support to the modernization theory of family change. The coefficients on industrialization and urbanization show that modernization does have impacts on divorce rates in China, but in a way that is not linear. The modernization processes are associated with lower divorce rates in the early stage and predict higher divorce rates subsequently. Nevertheless, the effects of industrialization and urbanization on divorce rates are quantitatively small. The two measure of developmental idealism are positively associated divorce rates. While international marriage significantly predicts the divorce rate, the coefficient on international tourism is not statistically significant. After adjusting for year fixed effects, the association between inter-province migration and divorce rates are not

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[12]See the classification of economic regions by National Bureau of Statistics of China (http://www.stats.gov.cn/ztjc/zthd/sjtjr/dejtjkfr/tjkp/201106/t20110613_71947.htm).
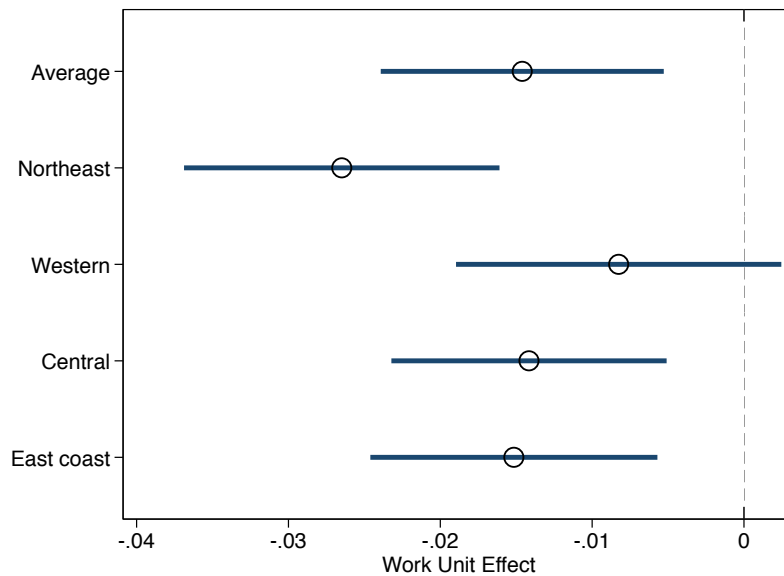
statistically significant.

Figure 5. Heterogeneity of the Work Unit Effect across Region

Note: Separate models are estimated for each economic region by interacting work unit and region dummies. Models adjust for time-varying covariates and province and year fixed effects. 95 percent confidence intervals are calculated based on robust standard errors clustered at the *Province × Period* level.

Another potential time-varying confounder is the sex ratio in the marriage market. This factor may be particularly relevant in Chinese contexts as the male-biased sex ratio has increased significantly because of the one-child policy (Li, Yi, and Zhang 2011; Zhu, Lu, and Hesketh 2009). It would be ideal if sex ratios for age cohorts at the risk of divorce in every province and in every year are known. Yet such data are not available except for the census years.[13] For those years that sex ratio data are not available, I infer the statistics from the closest census or mini-census year. Focusing on the age cohort 20 to 39, for example, I infer the sex ratio in

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[13]Sex ratio data for age cohorts are available in 1982, 1990, 1995, 2000, 2005, 2010, and 2015. Results are robust when only using observations in the years when the data on the sex ratio for age cohort 20 to 39 are available.

2001 from the age cohort 19 to 38 in the 2000 census.[14] Column 5 reports the results after adding the sex ratio variable. The main results are nearly unchanged. And sex ratio is not a significant predictor of divorce rates.

Table 3. The Impact of Declining Work Unit on Rising Divorce Rates

	(1)	(2)	(3)	(4)	(5)
Work unit	−.025***	−.010**	−.011**	−.015**	−.015**
	(.003)	(.004)	(.004)	(.005)	(.005)
Post 2003		.357	.196*		
		(.256)	(.096)		
Industrialization		.005	−.025	−.047**	−.048**
		(.022)	(.022)	(.015)	(.016)
Industrialization^2		.000	.000	.000*	.000**
		(.000)	(.000)	(.000)	(.000)
Urbanization		.036	−.052	−.035	−.035
		(.034)	(.026)	(.019)	(.019)
Urbanization^2		.000	.001*	.000	.000
		(.000)	(.000)	(.000)	(.000)
International tourism		−.054	.036	.007	.004
		(.051)	(.030)	(.018)	(.017)
International marriage		−.019*	−.004	.007**	.007*
		(.007)	(.004)	(.003)	(.003)
Out-migration		.000	.039***	.018	.017
		(.023)	(.009)	(.010)	(.010)
In-migration		.031	.011	.015	.016
		(.022)	(.013)	(.009)	(.010)
Child dependency ratio		.002	−.010	.005	.004
		(.014)	(.006)	(.005)	(.005)
Sex ratio					.027
					(.327)
Province FE	No	No	Yes	Yes	Yes
Year FE	No	No	No	Yes	Yes
Observations	1103	1103	1103	1103	1063
R^2	.41	.58	.89	.94	.94

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests). Robust standard errors, reported in parentheses, are clustered at the *Province × Period* level.

Two Pathways of the Work Unit Effect

Why does the decline of the work unit lead to rising divorce rates? The declining control function of the work unit may lead to more mutual consent divorces registered through civil affairs authority. Yet the effect of the declining welfare function of the work unit is indeterminate: it could lead to more mutual consent divorces; it could also lead to more contested divorces through courts. In this section I test for the two pathways of the work unit effect on divorce rates.

I begin with an assessment of the work unit effect on two types of divorce, mutual consent divorce through civil authority and contested divorce through courts. Results presented in Table 4 show that the work unit is significantly and negatively related to divorce through civil authority, but not contested divorce through courts. Indeed, the work unit effect on contested divorce is not significant and is quantitatively small. This suggests that the breakdown of the welfare provision function does not lead to more contested divorces. As to the work unit effect on divorce through civil authority, however, more evidence is needed to disentangle the effect of the declining welfare function from that of the control function.

Table 4. Decomposing Divorce Rates into Divorce through Civil Authority and Courts

	Civil Authority		Courts	
	(1)	(2)	(3)	(4)
Work unit	−.012***	−.015**	.001	.000
	(.003)	(.005)	(.001)	(.002)
Time-varying covariates	Yes	Yes	Yes	Yes
Province FE	No	Yes	No	Yes
Year FE	No	Yes	No	Yes
Observations	1102	1102	1098	1098
R^2	.62	.91	.34	.86

Note: Time-varying covariates include industrialization, urbanization, international tourism, international marriage, inter-province migration, and child dependency ratio. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests). Robust standard errors, reported in parentheses, are clustered at the *Province × Period* level.

To assess this issue, I focus on the period of massive layoff in state-owned enterprises (SOE) from 1995 to 2005. Layoff, or *xiagang*, refers to a peculiar category of unemployment in urban China (Lee 2000). Laid-off workers were not employed in production, received partial or no pay, and were not entitled to most welfare benefits in their work units; yet they were still formal members of their work units (Gold et al. 2009). More than 35 million workers in SOE were laid off from 1995 to 2002 (Giles, Park, and Zhang 2005). By focusing on the mass-layoff period and including the layoff variable measuring the percentage of laid-off workers in SOE, I attempt to disentangle the effect of the two functions of the work unit. If the work unit affected the divorce rate mainly through the welfare provision function, we may expect that the layoff variable should have significant and positive effect on civil divorce because laid-off workers were deprived of welfare benefits yet still retained by their work units. This is not supported by the results in Table 5. Specifically, in Model 2, there is no significant association between layoff and civil divorce. This suggests that in the period of massive layoff, the breakdown of the work unit's welfare provision function, proxied by the layoff variable, does not predict more divorces through civil authority. In addition, the work unit remains a significant negative predictor of more divorces through civil authority, regardless of including layoff or not. In Model 4, I examine the layoff effect for the northeast region that experienced biggest waves of layoff due to its large state industrial sectors. Layoff appears to be a significant but negative predictor of divorce rates for the northeast region. This suggests that for the northeast region during the mass-layoff period, higher layoff rate in SOE is associated with lower divorce rate. Taken together, the results suggest that work unit affects the divorce rate mainly through the diminishing function of institutional control, not the function of welfare provision.

Table 5. Welfare Provision, Political Control, and Mutual Consent Divorces in the Mass-Layoff Period, 1995 to 2005

| | Divorce through Civil Authority | | | |
	(1)	(2)	(3)	(4)
Work unit	−.004*		−.004*	−.004*
	(.002)		(.002)	(.002)
Layoff		−.001	−.001	.001
		(.002)	(.002)	(.002)
Layoff × Northeast				−.011*
				(.005)
Layoff + Layoff × Northeast				−.010*
				(.005)
Time-varying covariates	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	335	335	335	335
R^2	.95	.95	.95	.95

Note: Time-varying covariates include industrialization, urbanization, international tourism, international marriage, inter-province migration, and child dependency ratio. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests). Robust standard errors, reported in parentheses, are clustered at the *Province × Period* level.

The Effect of the 2003 Divorce Reform

Table 6 presents models estimating the effect of the divorce reform.[15] Model 1 and 2 include year fixed effects. Model 3 and 4 adjust for constrained time effects, in which the time effects only reflect the impact of pre-reform data and the post-reform time effects have no impact. Compared to models including post-treatment year fixed effects, the size of the reform effect is larger in constrained models, suggesting that post-reform time effects absorb some of the reform effect. However, the majority of the reform effect is still captured by the DID estimator. The constrained models show that in an average province with 33 percent disapproval rate in 1998, the divorce reform would lead to 0.6 more divorce through civil authority per thousand people. This accounts for approximately a third of the average increase in the civil

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[15]The sample size is reduced to 1102 because the number of civil divorce in 1988 for Hainan province is not available.

divorce rate in the post-reform period.

Table 6 also reports the effect of the work unit. The average effect of the work unit is comparable to the coefficients reported in Table 3. Comparing the work unit effect before and after the reform, Table 6 suggests that the work unit has statistically significant effects in both periods, yet the effect is relatively smaller before 2003. Prior to the reform, the complex divorce procedures made it difficult for everyone to divorce through civil authority, regardless of the types of employers, therefore the role of the work unit was less salient. Yet the work unit still had significant effects prior to 2003 because of its function of institutional control.

Table 6. The Effect of the 2003 Reform and Work Unit on Divorce through Civil Authority

	With Year FE		Constrained Trend	
	(1)	(2)	(3)	(4)
Regulation intensity × Post 2003	.014*	.013*	.018**	.018***
	(.007)	(.005)	(.006)	(.005)
Post 2003			1.006***	3.259***
			(.275)	(.957)
Work unit	−.014**	−.008*	−.014***	−.006**
	(.004)	(.004)	(.004)	(.002)
Work unit × Post		−.004		−.027***
		(.007)		(.006)
Work unit + Work unit × Post		−.013*		−.033***
		(.006)		(.006)
Time-varying covariates	Yes	Yes	Yes	Yes
Time-varying covariates × Post	No	Yes	No	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Constrained	Constrained
Observations	1102	1102	1102	1102
R^2	.91	.93	.84	.90

Note: Time-varying covariates include industrialization, urbanization, international tourism, international marriage, inter-province migration, and child dependency ratio. Robust standard errors, reported in parentheses, are clustered at the *Province × Period* level. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests).

The key identification assumption of the difference-in-differences strategy above is that without the 2003 divorce reform, a common trend existed in divorce rates through civil authority across provinces with different levels of regulation intensity.

This parallel trends assumption is not testable. Yet, I can examine whether there were already different trends in the pre-reform period. To check the existence of pre-trends, I replace the reform variable ($Intensity_p^{1998} \times Post_t$) in Equation 3 with a set of year dummies interacting with the regulation intensity variable. The year of 2003 is left as a comparison. As visualized in Figure 6, there are no significant differences in the pre-trends for provinces with different levels of regulation intensity, but the effect of the reform is immediately notable after 2003, when barriers to divorce through civil authority were removed.
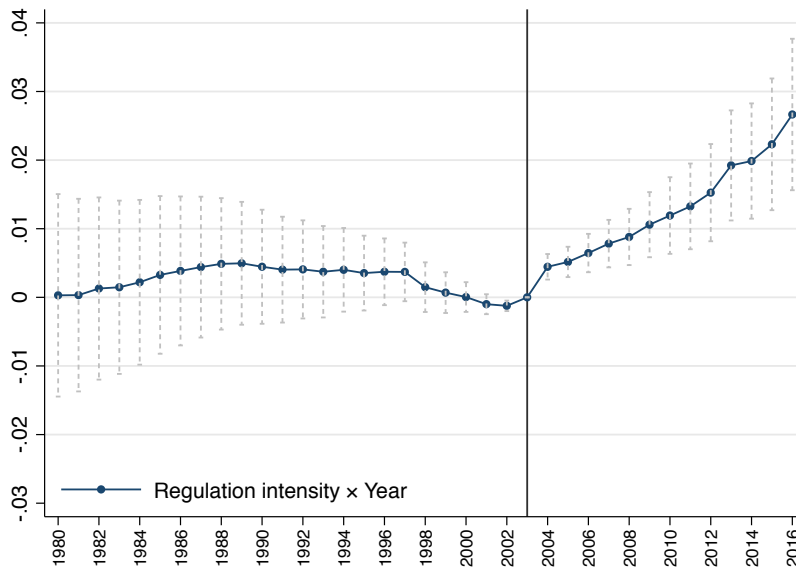

Figure 6. Year-by-Year Dynamic Effects of the 2003 Reform

Note: Each dot is an estimated coefficient of *Regulation Intensity × Year*, using the year of 2003 as the reference. The specification adjusts for time-varying covariates. The dash line indicates the 95 percent confidence interval, with robust standard errors clustered at the *Province × Period* level. The vertical solid line divides the estimated effects to pre-reform period and post-reform period.

In Figure 7, I plot the heterogeneous effects of the work unit over time and for two groups of province. Specifically, I categorize provinces into a high regulation intensity group if the disapproval rate of divorce through civil authority is above the median level and a low regulation intensity group if the disapproval rate is below

the median. Figure 7 shows that before the divorce reform, the two groups are comparable in a key dimension that affects the divorce rate, which is the work unit effect. The effects of the work unit for the two groups diverge only after the divorce reform. Moreover, the work unit effect was larger in high-regulation provinces than in low-regulation provinces, especially after the 2003 reform.
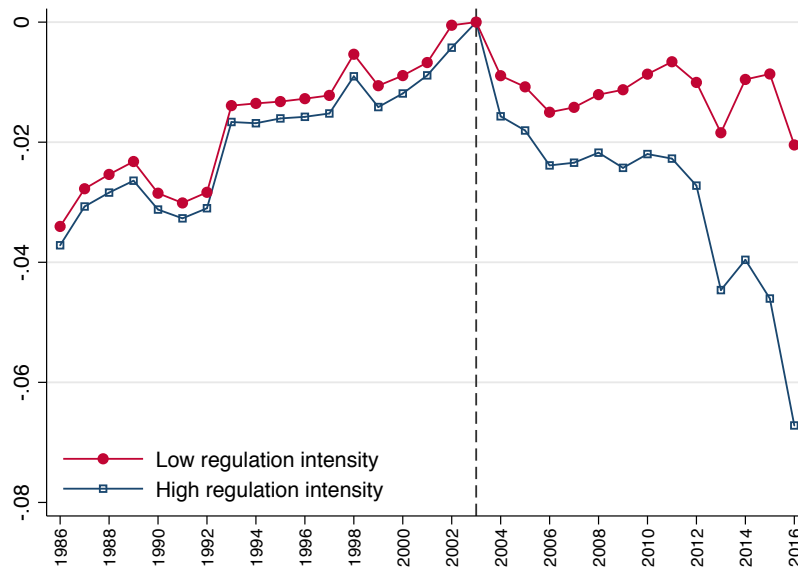

Figure 7. The Effect of Work Unit over Time and by Regulation Intensity

Note: Each dot is an estimated coefficient of *Workunit × Year* for high and low regulation intensity groups. The year of 2003 is set as the reference. Robust standard errors clustered at the *Province × Period* level. The vertical dash line indicates the 2003 divorce reform.

Discussion

Previous literature on societal-level explanations for rising divorce rates has drawn on two main theoretical trends—modernization theory and developmental idealism (Goode 1963; Thornton 2005). Both theories assume a secondary role of the state in changing family life. Using a province-level panel data set from 1980 to 2016,

analyses in this paper demonstrate that the retreat of the state is associated with China's rising divorce rates in the past four decades.

This study provides evidence of two mechanisms through which the retreating state may influence divorce rates. One mechanism is a divorce reform that removed requirements of work unit permission and civil mediation for divorce through civil affairs authority. The other mechanism is the decline of the work unit. The models demonstrate that the declining work unit, together with the 2003 divorce reform, has contributed to China's rising divorce rates. The results are robust to alternative measures and model specifications.

This study also presents evidence that suggests the breakdown of the work unit's political control function rather than welfare provision function is associated with higher divorce rates. When decomposing the divorce rate into mutual consent divorce through civil affairs authority and contested divorce through courts, I find that the work unit only affects the former but not the latter. By using layoff as a proxy for the welfare function, the results show that the breakdown of the welfare provision function in the mass-layoff period does not predict more divorces through civil authority; hence, the work unit effect is primarily driven by its declining control function.

This paper reformulates the state social engineering theory and applies it to the investigation of how a diminished role of the state can change family life. This reformulation of the state social engineering theory brings the role of the state into existing theoretical schools of family change that have assumed a secondary role of the state in changing family life. In contrast to Goode's view that state regulation of family life is a consequence of industrialization and urbanization processes (Goode 1993), my analysis reveals that just as was the case for the transformative role of the socialist state for private life in the Mao era, a retreating state has again fostered

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dramatic family change in post-Mao China. As noted by Davis and Harrell (1993), "state power and policies have been the creators, not the creation, of a transformed society" (p.5).

A diminishing role of the state in family life is not unique to China. An example that has received much attention in the literature is the introduction of unilateral and no-fault divorce law in the US and Europe (Kneip, Bauer, and Reinhold 2014; Kneip, Bauer, and Teachman 2009; Stevenson and Wolfers 2006). While evidence of marital fault was required before granting a divorce in most states of the US, the rise of no-fault divorce statutes in many states since the late 1960s has placed divorce under private control (Stevenson and Wolfers 2007). With reduced legal barriers to divorce, parallels can be drawn on the diminished role of the state in family life and privatization of the marriage institution in different societies (Cohen 2009; Davis and Friedman 2014). With much of the literature on the state regulation of family life focusing on family laws, here China is an important case because of its distinctive work unit institution, which provides an opportunity to examine the institutional contexts in which the family operates.

Finally, the findings of this paper have implications for four lines of sociological research. First, a recent study by Ma et al. (2018) has used individual-level data to examine socioeconomic correlates of divorce and divorce patterns in China. They argue that after an elevated increase in the 1990s, divorce risks in China have risen to a plateau in the 2000s. The authors also report a plunge of the divorce risk after 2008. The findings I have reported in this article suggest these conclusions are incorrect. A caveat is that although people have to register divorce with state institutions, they may not report divorce in social surveys, which served as the data for Ma et al. (2018). Their results may also be due to small cell sizes when examining divorce cases within each year using individual-level data. Second, in

this study, while a panel data set from all provinces in mainland China is used and time-invariant characteristics to each province are adjusted for in the models, it should be noted that there is much heterogeneity within each province. Future research can address this question with available data. Third, while the 2003 divorce reform has affected all of China, the findings on the work unit apply mainly to urban China. Although previous research suggests much higher divorce rates in urban areas than in rural areas (Zeng et al. 2004), divorce in rural China remains to be investigated. Last, although there is a large literature on work unit and social stratification (Bian and Logan 1996; Lin and Bian 1991; Zhou 2004), studies on the impacts of the work unit on family life are limited and should be further explored (Davis and Harrell 1993; Whyte 2003).

Appendix

Part A. Alternative Measures and Analytic Samples

To test the sensitivity of the findings, I use different analytic samples and consider alternative measures for divorce rates and the work unit. Results presented in Table A1 show that the results are robust to changes in the specifications. In Model 1, I restrict the sample to five years before and after the divorce reform. The coefficients on reform and work unit are smaller compared to those in Table 6 but remain statistically significant. In Model 2, I restrict the analytic sample to the Han Chinese population by excluding the five ethnic autonomous regions, i.e., Inner Mongolia, Xinjiang, Guangxi, Ningxia, and Tibet. The main results are not affected by the sample restriction. To address the concern that the crude divorce rate is affected by the age structure of the population and is sensitive to the proportion of married population, in Model 3, I use the refined divorce rate as the dependent variable, in which the denominator is number of married women aged 15 and above.[16] The coefficients on reform and work unit increase in magnitude but are still statistically significant. In Model 4, I redefine the measurement of the work unit by excluding collective work units. The results suggest that the redefinition of the work unit does not challenge the credibility of the findings.

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[16]Here the calculation of the refined divorce rate is based on resident population rather than *hukou* population, because the measure of age structure in *hukou* population is unavailable. The refined divorce rate provides a more accurate measure of divorce in the population by only including those who are at risk of getting divorced. However, compared to using *hukou* population as the denominator, the refined divorce rate cannot accurately measure the population who are able to register divorce in a province. Moreover, as the number of resident population is estimated from annual population change survey, the sampling fraction of each province is needed to calculate the size of married population. But a national sampling fraction is used due to data availability. Therefore sampling error may lower the accuracy of calculations based on resident population.

Table A1. Robustness Checks on the Effects of the Reform and Work Unit using Alternative Measures and Analytic Samples

	Five years before and after reform (1)	Excluding five ethnic autonomous regions (2)	Using refined divorce rate (3)	Only state work unit (4)
Regulation intensity × Post 2003	.011***	.016*	.058***	.019***
	(.002)	(.007)	(.014)	(.005)
Post 2003	−.253	1.068	4.213	1.280
	(.400)	(1.249)	(2.578)	(1.028)
Work unit	−.005**	−.004*	.015*	−.006*
	(.002)	(.002)	(.007)	(.003)
Work unit × Post	−.001	−.027***	−.106***	−.028***
	(.002)	(.007)	(.014)	(.007)
Work unit + Work unit × Post	−.006**	−.031***	−.091***	−.034***
	(.002)	(.007)	(.014)	(.007)
Time-varying covariates	Yes	Yes	Yes	Yes
Time-varying covariates × Post	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	341	917	1103	1102
R^2	.96	.91	.92	.90

Note: Time-varying covariates include industrialization, urbanization, international tourism, international marriage, inter-province migration, and child dependency ratio. Robust standard errors, reported in parentheses, are clustered at the *Province × Period* level. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests).

Part B. Additional Robustness Checks on the DID Specifications

The primary measure of pre-reform regulation intensity used in this paper is the disapproval rate of divorce application through civil authority in 1998. To examine the validity of this measure, Figure A1 plots the relationship between the 1998 disapproval rate and three disapproval rates in 1993, 1995, and 1997. The fitted lines show that disapproval rates before 1998 strongly predict the 1998 disapproval rate. Moreover, the relationship itself does not change significantly over time. This suggests that disapproval rates of mutual consent divorce through civil authority before the 2003 reform were relatively stable features of the provinces. Furthermore, in Model 1 of Table A2, I use disapproval rate in 1997 as an alternative measure of pre-reform regulation intensity. The results remain comparable to previous

models. Therefore, the 1998 disapproval rate should be qualified as the measure of pre-reform regulation intensity.
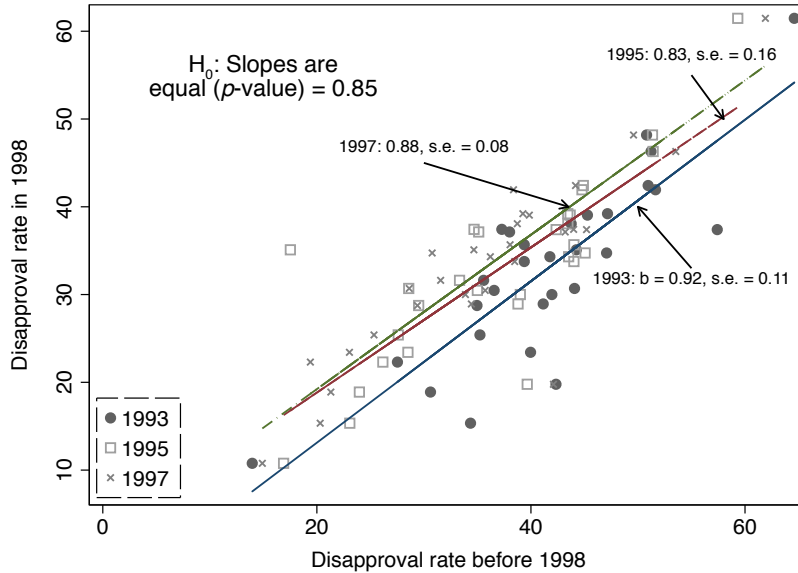

Figure A1. Stability in Cross-Province Variation in Divorce Disapproval Rate

Note: The straight lines shows fitted values of the relationship between the 1998 disapproval rate and three disapproval rates before 1998. All three disapproval rates strongly predict the 1998 disapproval rate, as indicated by the coefficients and standard errors. The *p*-value (0.85) from a test that the slopes are equal shows that the relationship itself does not change over time significantly. This figure provides evidence that suggests cross-province variation in pre-reform regulation intensity was stable over time.

Another concern is that provinces with high regulation intensity in 1998 would have experienced a different trend-shift in divorce rates than other provinces after 2003, even without the 2003 divorce reform. To study this possibility, I first predict the regulation intensity based on time-varying covariates in the models and then create an interaction term between the predicted variable and the reform dummy. In Model 2 of Table A2, I include this extended control, which has little impact the estimated effects. This supports the finding that the divorce reform in 2003 was effective in reducing the barriers to register divorce through civil affairs authority and contributed to the rise of divorce rates. Furthermore, suppose that the divorce

reform occurred in 2002 rather than in 2003, then a placebo reform in 2002 should have similar effect on the divorce rate as the 2003 divorce reform did. In Model 3 of Table A2, I add the placebo reform in 2002 to the model. The placebo effect is not statistically significant and is quantitatively small.

Table A2. Robustness Checks on Difference-in-Differences Specifications

	Using 1997 disapproval rate (1)	Including extended control (2)	Placebo reform in 2002 (3)
Regulation intensity × Post 2003	.014*	.017***	.019***
	(.006)	(.005)	(.005)
Post 2003	1.868	2.340	1.355
	(1.009)	(1.411)	(1.059)
Work unit	−.006***	−.006**	−.006**
	(.002)	(.002)	(.002)
Work unit × Post	−.028***	−.029***	−.027***
	(.006)	(.006)	(.006)
Work unit + Work unit × Post	−.034***	−.034***	−.033***
	(.006)	(.007)	(.006)
Reform 2002			.001
			(.003)
Extended control	No	Yes	No
Time-varying covariates	Yes	Yes	Yes
Time-varying covariates × Post	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1102	1102	1102
R^2	.90	.90	.90

Note: Time-varying covariates include industrialization, urbanization, international tourism, international marriage, inter-province migration, and child dependency ratio. Robust standard errors, reported in parentheses, are clustered at the *Province × Period* level. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests).

Part C. Alternative Ways of Adjusting for Time Shocks

To test the sensitivity of the reform effect to alternative ways of adjusting for time effects, I estimate models with linear time trend and with no time effects. The latter model assumes that there is no underlying time trajectory that is not captured

by province fixed effects or time-varying covariates. Results reported in Table A3 show similar patterns in both point estimates and statstical significance, which are also comparable to the fixed effects models and constrained time effects models in Table 6.

Table A3. Alternative Ways of Adjusting for Time Shocks

	Without Year FE		Linear Year Trend	
	(1)	(2)	(3)	(4)
Regulation intensity $\times$ Post 2003	.018**	.018***	.017**	.015**
	(.006)	(.005)	(.006)	(.005)
Post 2003	$-$.815*	1.421	$-$.719	1.853
	(.406)	(1.035)	(.403)	(1.005)
Work unit	$-$.014***	$-$.006**	$-$.002	.003
	(.004)	(.002)	(.004)	(.003)
Work unit $\times$ Post		$-$.027***		$-$.030***
		(.006)		(.006)
Work unit + Work unit $\times$ Post		$-$.033***		$-$.027***
		(.006)		(.005)
Time-varying covariates	Yes	Yes	Yes	Yes
Time-varying covariates $\times$ Post	No	Yes	No	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	No	No	Linear	Linear
Observations	1102	1102	1102	1102
R^2	.84	.90	.86	.91

Note: Time-varying covariates include industrialization, urbanization, international tourism, international marriage, inter-province migration, and child dependency ratio. Robust standard errors, reported in parentheses, are clustered at the *Province $\times$ Period* level. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests).

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