



The effect of divorce laws on divorce rates in Europe

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ABSTRACT

We analyze the effect on divorce rates of the legal reforms leading to “easier divorce” that took place in Europe during the last four decades. We construct a 54-year-long panel and exploit the different timing and nature of the reforms in divorce laws across countries. The reforms range from countries that legalized divorce to the introduction of no-fault grounds and unilateral divorce. We estimate that the introduction of no-fault, unilateral divorce increased the divorce rate by about 0.6, a sizeable effect given the average rate of 2 divorces per 1000 people in 2002.

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1. Introduction

The recent rise in divorce rates in industrialized countries has generated a great deal of attention from researchers and policy makers. Many worry about the negative economic consequences of divorce for women and children, and there is some evidence that more liberal divorce laws have negative effects on long-term outcomes for children (Gruber, 2004). On the other hand, recent research suggests that divorce may increase physical and psychological well-being for both partners (Gardner and Oswald, 2006; Stevenson and Wolfers, 2006). Thus it seems clear that divorce legislation has potential effects on large segments of the population and on several important dimensions related to both economic and psychological well-being.

The rise in divorce rates has been very pronounced in Europe since the 1960s. Virtually all European countries experienced less than 1.5 divorces per 1000 people in 1960, and many had divorce rates below 0.5. By 2002, most European countries had divorce rates around 2 per 1000 people or higher.

Many European countries reformed their divorce legislation during the last four decades of the 20th century, allowing divorce under mutual consent and other “no-fault” grounds or even unilaterally. Some countries even legalized divorce when it was previously banned. However, little is known regarding the extent to which these reforms that tended to “make divorce easier” were responsible for the widespread increase in divorce rates.

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This question has relevant policy implications, since several countries have recently been considering additional reforms in their divorce laws.² They are also pertinent given the current initiatives studying the possible harmonization of family law within the European Union (Boele-Woelki, 2005; European Commission, 2005).

We construct a long panel for 18 European countries spanning from 1950 to 2003 to analyze the effect of changes in divorce laws on divorce rates. We identify this causal relationship by exploiting the variation across countries in the timing and nature of the reforms, while controlling for fixed and trending unobserved factors at the country level that may be related to both divorce laws and divorce rates. We also analyze the extent to which the effects of the reforms are transitory or permanent.

Our analysis builds on a previous body of literature, both theoretical and empirical, that analyzed the effect of no-fault and unilateral divorce on divorce rates in the United States. The early empirical estimates of the effect of divorce law on divorce rates produced mixed results.³ More recent papers suggest that unilateral divorce increased divorce rates significantly, at least for several years following the reforms, although the effect was probably small relative to the overall increase in divorce rates.⁴ This appears to be the current consensus (Stevenson and Wolfers, 2007).

We contribute to this literature by examining the impact of different divorce law reforms on the divorce rate using a long panel of European data. There are several advantages to using European data versus US state-level data. First, there is a greater range of divorce law regimes, and changes in those regimes, across Europe than across the US. Some countries actually legalized divorce fairly recently, which provides a useful benchmark against which to compare other reforms. Second, since there is less mobility across Europe, there is also presumably much less divorce-driven migration (or “divorce law shopping”) in Europe than in the US, and thus this factor is less likely to affect the estimates of the effects of law changes. And third, we are able to construct a longer panel than most of the previous studies using US data.

After careful examination of the legislation in the 18 countries under study, we group the reforms into three categories. The first applies to countries that previously banned divorce and introduced no-fault legislation during the period. The second type of reform took place in countries that allowed divorce under fault grounds before 1950 and subsequently introduced no-fault, de facto unilateral legislation. A third group of countries already allowed no-fault grounds before 1950 and introduced unilateral divorce by 2003.

We find that the reforms that “made divorce easier” (by introducing no-fault and/or unilateral grounds for divorce) were followed by significant increases in divorce rates. Moreover, the effect seemed permanent (allowing for the time scale of the panel) with strong, significant long-term effects. According to our estimates, the combined effect of introducing no-fault, unilateral divorce amounts to an increase in the divorce rate of about 0.6 annual divorces per 1000 people. This effect is sizeable given that the aggregate divorce rate was 2 per 1000 people in 2002. It is also comparable in magnitude to the estimated long-term effect of legalizing divorce. The remaining unexplained increase in divorce rates would be attributable to other factors, such as changes in economic conditions and social norms across Europe.

The remainder of the paper is organized as follows. Section 2 summarizes the previous literature on the effect of divorce laws on divorce rates. The subsequent section describes divorce laws in Europe and the main reforms that took place since 1950. Section 4 discusses the data and the econometric specification, while Section 5 presents the main results and some additional regressions and robustness checks. The final section summarizes the results and concludes.

2. Theoretical background and related literature

Conventional wisdom suggests that making divorce easier should lead to higher divorce rates. This is in fact the argument used in recent years by certain groups in the US claiming that no-fault and unilateral divorce laws are contributing to the destruction of the traditional family and should therefore be reversed.⁵

This argument is certainly valid in the case of reforms that legalize divorce, since before the reform the cost of separation is infinite and even “efficient” divorces cannot take place.⁶ Thus we expect that a reform that legalizes divorce, even under strict “fault” grounds, would be followed by increases in the divorce rate.

Under a strict “fault” regime, the right to file for a divorce is available unilaterally to an innocent party only if his/her spouse is guilty of a serious matrimonial offense, such as adultery or physical abuse. In such a case, it is necessary to present proof of fault in court before a judge. In this scenario, efficient divorces would take place, provided that the surplus was high enough to compensate the partner who wants to stay married and cover the costs associated with the legal proceedings (and provided that certain assumptions hold, such as utility being transferable between partners).

² Reforms liberalizing divorce took place in France and Spain in 2005, while there are current initiatives in the US in favor of making divorce easier in some states (such as New York) and more restrictive in others (such as Ohio).

³ See Peters (1986, 1992), Allen (1992).

⁴ See Friedberg (1998), Wolfers (2006).

⁵ For instance, Americans for Divorce Reform (www.divorcereform.org) claim that “‘No fault’ doubled an already high divorce rate shortly after it was introduced. The radical swing from 100% fault-based divorce to 100% unilateral non-binding marriage is a failed experiment. It pushed us into a whole new form of family life that is not sustainable.”

⁶ We define a divorce as “efficient” when it maximizes the joint welfare of the spouses. This is only feasible when combined utility from divorce is higher than from marriage (see Fella et al., 2004).

The introduction of “no-fault” divorce (i.e. allowing for divorce on grounds other than fault, such as mutual consent) would reduce the cost of divorce, since it removes the requirement of presenting proof of fault in court. For instance, in the case of a mutual consent divorce, a no-fault regime would substantially reduce transaction costs (less evidence required, less time in court, etc.). Thus we expect “no-fault” divorce to increase the divorce rate relative to a “fault” regime by increasing the number of efficient divorces that actually take place, mainly due to the reduction in transaction costs.

Finally, economic theory suggests that, under certain assumptions, reforms that allow for unilateral divorce (i.e. dropping the requirement of mutual consent) should not have any effect on divorce rates. Just like under “no-fault”, only efficient divorces would take place, except that the direction of the side payments would be reversed.

Note that this argument is a direct application of the Coase theorem to marital bargaining, which suggests that the introduction of unilateral divorce should have no effect on the incidence of divorce (Becker et al., 1977; Becker, 1981; Peters, 1986). Under mutual consent, for a divorce to take place the spouse who wishes to leave would have to compensate the one who wants to stay married. Under unilateral divorce, the separation will take place unless the spouse who wishes to stay compensates the one who wishes to leave. Thus the unilateral reform would only reassign existing property rights between spouses, assuming full transferability, perfect information and no transaction costs.

However, many have pointed that the assumptions behind the Coase theorem may fail to hold in the context of marital bargaining (Parkman, 1992; Clark, 1999; Fella et al., 2004; Mechoulam, 2005; Stevenson and Wolfers, 2006). If this is the case, then unilateral divorce may have an effect on the incidence of divorce. This can be true even in the absence of transaction costs and informational asymmetries. Theoretical work by Clark (1999) suggests that unilateral reform may also affect the incidence of divorce through marital bargaining due to the interaction with property laws (such as alimony and child custody laws).

In addition, many of the countries that allow unilateral divorce do so only after a predetermined separation requirement has been fulfilled. The length of the required separation period thus imposes additional transaction costs that can also affect the incidence of divorce.

There have been several attempts to test the theoretical predictions with US data. Peters (1986, 1992) and Allen (1992) used cross-sectional data to test whether people living in states with unilateral divorce were more likely to divorce than others. They used different sets of controls and arrived at different conclusions. Peters (1986, 1992) estimated an effect of unilateral laws close to zero; while Allen found that unilateral divorce increased the probability of divorce by 1.4%.

Later work has strengthened the identification strategy by using panel data, which allows for the inclusion of state fixed-effects and state-specific trends. Using a panel from 1968 to 1988, Friedberg (1998) found that unilateral divorce reforms had significant and permanent effects on divorce rates, accounting for about one-sixth of the increase in divorce rates during the period. In a recent paper, Wolfers (2006) revised Friedberg’s results with a longer panel and a slightly modified methodology, and found that unilateral divorce has only transitory effects on the divorce rate.

This paper contributes to this literature by estimating for the first time the extent to which the divorce law reforms in Europe have contributed to the increase in divorce rates, using a long panel of 18 European countries from 1950 to 2003. We extend on the previous analyses by offering insights on the impact of several different types of reforms (rather than just the move to a unilateral divorce as examined in the previous US literature). The long panel and the different timing and nature of the reforms that took place during the period across European countries offer an appealing identification strategy for the estimation of the effect of divorce laws on divorce rates.

3. Divorce legislation in Europe, 1950–2003

Most European countries had laws regulating divorce dating back to the first half of the 20th century or earlier. The exceptions were Italy, Spain and Ireland, where divorce was banned until 1970, 1981 and 1996, respectively.⁷ During the 1950s and the 1960s, many countries allowed divorce only on the basis of “fault”, the fault grounds typically including adultery and physical violence. Under a “fault” regime, a divorce can only be granted to the innocent party if he/she presents proof of fault in court. Some countries (mostly in Scandinavia) also allowed divorce after a certain separation period.

The so-called “no-fault revolution” accelerated in the 1970s, when many countries introduced grounds for divorce in addition to (or in replacement of) fault, typically the “irretrievable breakdown” of the marriage, of which mutual consent was usually considered proof. Many countries went further and at some point introduced “unilateral divorce”, which allowed divorce on request by only one of the spouses, thus dropping the pre-requisite of mutual agreement.

The characterization of the different reforms across Europe (over 20 of them between 1970 and 2000) is complicated by the large variation regarding specific details such as the breadth of no-fault grounds or differing separation requirements. Friedberg (1998) notes the difficulty in categorizing situations where separation during a certain period of time is the only ground for unilateral divorce. Mechoulam (2005) also stresses the importance of correctly classifying the different reforms. Thus we explore the sensitivity of the results to different definitions of unilateral divorce.

⁷ Divorce was also banned for Catholic marriages in Portugal until 1975 (implemented in 1976). Note that about 99% of the marriages were Catholic around that time (see Coelho and Garoupa (2007) for more details on the Portuguese legislation).

Table 1
Divorce Laws by Country, 1950–2003

Country	1 Year when divorce allowed	2 No-fault	3 Unilateral ^a
Austria	pre-1950	pre-1950	1978 (6)
Belgium	pre-1950	pre-1950	1975 (10), 1983 (5), 2000 (2)
Denmark	pre-1950	pre-1950	1970 (3), 1989 (2)
Finland	pre-1950	pre-1950	pre-1950 (2), 1988 (0)
France	pre-1950	1976	1976 (6)
Germany inc. GDR after 1991	pre-1950	pre-1950	1977 (3)
Greece	pre-1950	1979	1983 (4)
Iceland	pre-1950	pre-1950	1993 (2)
Ireland	1997	1997	No
Italy	1971	1975	No
Luxembourg	pre-1950	pre-1950	1979 (3)
Netherlands	pre-1950	1971	1971 (2)
Norway	pre-1950	pre-1950	pre-1950 (7), 1993 (2)
Portugal	1976	1976	1976 (3)
Spain	1981	1981	1981 (5)
Sweden	pre-1950	pre-1950	pre-1950 (3), 1974 (0)
Switzerland	pre-1950	pre-1950	2000 (4)
UK ^b	pre-1950	1971	1971 (5)

Sources: Boele-Woelki et al. (2003, 2004), Dutoit et al. (2000), Smith (2002), and national legislation. Notes: Column 1 shows the year when divorce was first allowed. Column 2 shows the year when no-fault grounds for divorce were first introduced. No-fault grounds for a divorce include irretrievable breakdown, irreconcilable differences and/or incompatibility. Column 3 shows the year when de facto unilateral, no-fault divorce was first allowed. Unilateral divorce does not require mutual consent and can be granted at the request of either spouse.

^a The length of the separation requirement in years is specified in parenthesis.

^b The divorce law for Scotland post-dates that of England and Wales by 5 years. The analysis does not take this into account.

Table 1 summarizes our categorization of the main changes in divorce laws that took place in 18 European countries between 1950 and 2003.⁸ Ten countries had already introduced no-fault grounds for divorce before 1950, while the remaining eight moved to a no-fault regime between 1971 and 1997.⁹

All but two of the countries had incorporated some form of unilateral divorce by 2003. Many of them did not explicitly recognize unilateral demand as a ground for divorce, but implicitly allowed it by considering a (typically long) separation period as proof of the irretrievable breakdown of the marriage. Our definition of unilateral divorce includes all regimes that, in practice, allowed for unilateral divorce, even if a divorce could only be granted unilaterally after a long separation requirement (the length of the separation requirement in years is specified in Table 1).

By 2003, almost all countries implicitly or explicitly allowed for a spouse to divorce unilaterally after a required separation period, which was considered proof of the irretrievable breakdown of the marriage. The only two countries that are not categorized as unilateral regimes even in 2003 are Ireland and Italy. In these two countries, even after the separation requirement is fulfilled, a divorce is not granted automatically if one of the spouses is opposed.

The different countries also vary in terms of the separation period required in the case of unilateral demand, with only Finland and Sweden allowing for unilateral divorce with no separation requirement. Also, several countries reduced the separation requirements during the period, as shown in Table 1. This large variation in the timing of the reforms will be exploited in the econometric analysis in order to identify the effect of the law changes on divorce rates.¹⁰

4. Data and methodology

The longitudinal data on divorce rates cover 18 European countries from 1950 to 2003 inclusive. We collected administrative data on the annual number of divorces, total population and married population (as well as the control variables) from publicly available sources, primarily Eurostat, supplemented with data from the United Nations and national statistical offices.¹¹

⁸ The dates correspond to the year when a certain reform was implemented, which is often the year after the legislation was passed.

⁹ Germany, Austria and Switzerland had what has been called a “weak fault” regime already before 1950 (Smith, 2002). We include “weak fault” as “no-fault” since these regimes specified “a rather open-ended, non-specific fault ground that can flexibly accommodate a wide range of provable matrimonial offenses, possibly even of a relatively minor character” (Smith, 2002, p. 215). These regimes also allowed divorce on the basis of a three-year separation.

¹⁰ The information on divorce legislation across countries was gathered mainly from Boele-Woelki et al. (2003, 2004), Dutoit et al. (2000) and Smith (2002), as well as the actual national legislation.

¹¹ The detailed sources are available upon request.

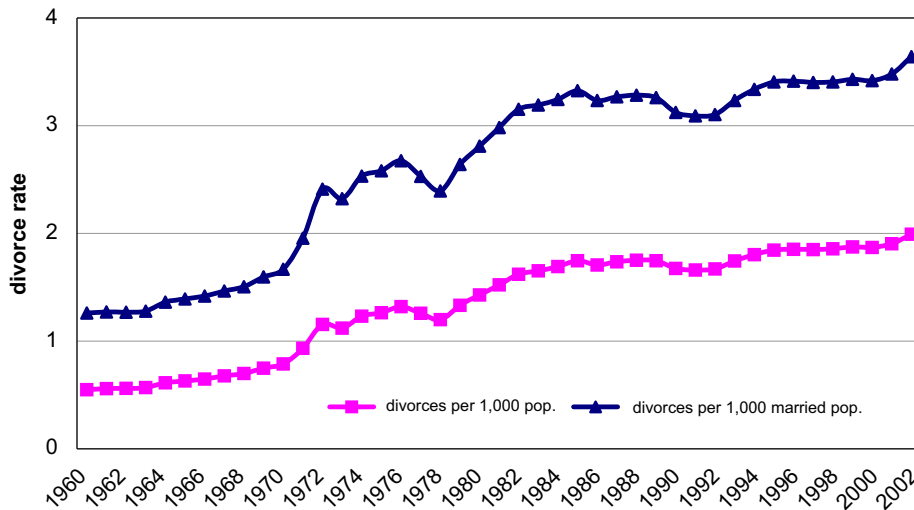


Fig. 1. Aggregate divorce rate in 18 European countries, 1960–2002.

The main dependent variable in the analysis is the divorce rate, defined as annual divorces per 1000 people, in order to facilitate the comparison with previous studies.¹² The analysis is also performed using divorces per 1000 married people.¹³

We believe it is pertinent to also report the results using annual divorces per married people because marriage rates vary across countries and have changed significantly during the second half of the 20th century, thus affecting the population “at risk” of divorce. We may also worry that the divorce law changes may impact the quality and quantity of the marriage-market matches. On one hand, the marriage rate may increase due to “reduced exit costs”, which in turn may lead to lower-quality matches and more divorces. On the other hand, easier divorce may reduce the benefits of marriage and hence decrease the proportion of the ever-married population. However, even large effects on the number of new marriages would affect the stock of marriages very slowly.¹⁴

The aggregate number of divorces per 1000 people in the 18 countries in the sample was 0.5 in 1960, while it had reached 2 by 2002 (see Fig. 1). The equivalent figures for divorces per 1000 married population were 1.3 and 3.6.

The analysis relies on a number of quasi-experiments to assess the impact of different divorce law reforms on divorce rates. First of all, four countries that used to ban divorce, introduced no-fault divorce legislation between 1971 and 1997 (Ireland, Italy, Portugal and Spain). Another four countries that allowed divorce only on the basis of fault adopted *no fault* legislation during the 1970s (see Table 1).

All countries but Ireland and Italy had introduced some form of *unilateral* divorce by 2003, most of them with separation requirements. Thirteen countries underwent reforms that introduced some form of unilateral divorce between 1960 and 2003, while Finland, Norway and Sweden had already introduced unilateral divorce before 1950. Typically, countries with “de facto” unilateral legislation considered a certain separation period to be proof of the “irretrievable breakdown” of the marriage, which was in turn a ground for divorce.

Examining the impact of the *no-fault* and *unilateral* reforms on the divorce rates is clearly quasi-experimental, relying on identification from the variation in the timing of the reforms across reform countries. However, a direct comparison of reform and control countries would imply assuming that the variation in the legislative reforms across countries is exogenous. This seems a questionable assumption since countries that had higher divorce rates in 1950 were also more likely to introduce reforms that liberalized divorce in subsequent years (see Fig. 2). It is likely that countries differ in both observable and unobservable dimensions, such as social norms, that are related to both divorce rates and legislative activity.

We account for pre-existing differences across countries through the inclusion of country fixed-effects in the regressions. Moreover, it is still conceivable that such unobservable factors as social norms or demographic trends are evolving over time at different paces in different countries. For instance, countries where the stigma associated with divorce was diminishing faster would experience higher increases in divorce rates and could also be more likely to pass

¹² Both Friedberg (1998) and Wolfers (2006) used divorces per thousand people as the main dependent variable in their analyses.

¹³ There were many gaps in the series for married population. Thus we impute married population by country using the available data points, plus a linear and a quadratic trend. Specifications with only linear trends and with linear, quadratic and cubic trends were also estimated and did not affect the results.

¹⁴ See Rasul (2006) for an explicit analysis of the effect of divorce legislation on marriage rates, Rainer (2007) for a theoretical analysis of the interplay between divorce laws and couples’ incentives to undertake marital investments, and Stevenson (2007) for an empirical study of the effect of unilateral divorce on marriage-specific investments.

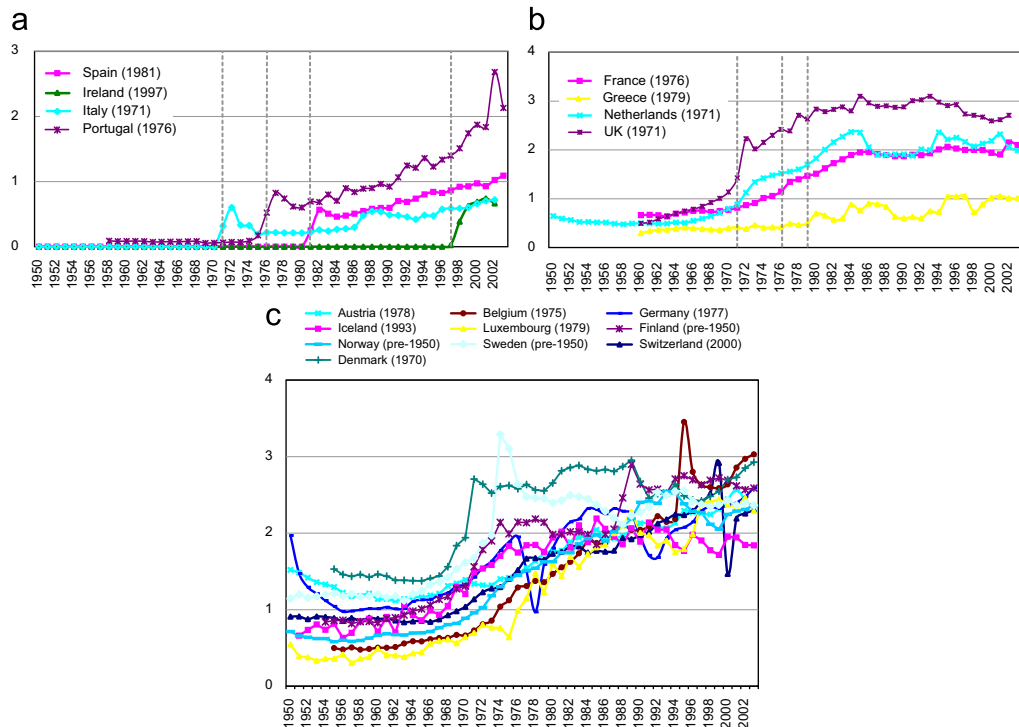


Fig. 2. Divorce rates in 18 European countries, 1950–2003. (a) Countries that legalized divorce during the period. (b) Countries that introduced no-fault during the period (excluding those in (a)). *Note:* The dotted lines indicate the years when the reforms took place. (c) Countries that introduced no-fault pre-1950, unilateral during the period.

laws making divorce easier. We account for this possibility in two ways. First, we include controls that directly measure (or proxy for) the changes in economic conditions, social norms and demographic trends, such as female labor force participation rates. Second, we include country-specific linear and quadratic trends in our different regression specifications. Hence we can be reasonably confident that we are removing both fixed and time-varying (observed and unobserved) factors at the country level that could otherwise bias our results. If anything, we may worry that part of the effect of the reforms might be captured by the country-specific trends.

Our initial estimation strategy follows Friedberg's methodology (Friedberg, 1998). We estimate the following equation:

$$\begin{aligned} \text{divorce rate}_{i,t} = & \beta \text{law}_{i,t} + \sum_t \text{country fixed effects}_i \\ & + \sum_t \text{time fixed effects}_t + \sum_i \text{country}_i \times \text{time}_t + X'_{i,t} \gamma + \varepsilon_{i,t} \end{aligned} \quad (1)$$

The variable *law* is a dichotomous variable set to equal one when a reform is effective in country *i* and year *t*. Hence, the coefficient β is interpreted as the average rise in the divorce rate due to the legal change. In our setup, we introduce different dummies for each of the legislative changes (*legal*, *no fault* and *unilateral*) and interpret each of the coefficients equivalently. Country and year fixed-effects in Eq. (1) control for pre-existing differences in country-specific divorce probabilities, as well as for evolving unobserved factors that affect divorce in all countries in the sample. A less restrictive specification allows for country-specific time trends, which control for, for example, social and demographic trends within a country. Finally, *X* includes some country-year control variables.

We estimate Eq. (1) separately for the sub-sample of countries that introduced each type of reform (*legal*, *no fault* and *unilateral*), thus exploiting only the different timing of the law changes. Then we also estimate a full specification that includes all countries where divorce was legal during the whole period, and in this specification we include the dummies for both no-fault and unilateral divorce reforms. Provided that all countries are comparable, this full specification will provide more precise estimates. Legalizing countries are not included in the full specification due to comparability concerns.

The regressions are estimated by population-weighted least squares on an unbalanced panel.¹⁵ We also estimate specifications that add quadratic trends for each country, as well as with and without the control variables. The standard

¹⁵ The data on the annual number of divorces is missing for the fifties and/or 2003 for some countries.

Table 2

Static and dynamic effects of legalizing divorce; dependent variable: annual divorces per 1000 people

	Static 1	Dynamic 1	Static 2	Dynamic 2	Static 3	Dynamic 3
Legal	0.343*** (0.039)		0.354*** (0.027)		0.323*** (0.130)	
Legal yrs 1–2		0.419*** (0.050)		0.420*** (0.031)		0.388*** (0.039)
Legal yrs 3–4		0.394*** (0.043)		0.392*** (0.022)		0.361*** (0.054)
Legal yrs 5–6		0.331** (0.098)		0.378*** (0.022)		0.339*** (0.045)
Legal yrs 7–8		0.274* (0.093)		0.356*** (0.042)		0.312*** (0.044)
Legal yrs 9–10		0.350** (0.094)		0.424*** (0.069)		0.378*** (0.059)
Legal yrs 11–12		0.423** (0.113)		0.482*** (0.037)		0.426*** (0.065)
Legal yrs 13–14		0.362* (0.140)		0.447*** (0.014)		0.388*** (0.087)
Legal yrs 15+		0.453* (0.182)		0.537*** (0.049)		0.468*** (0.086)
Country trends	No	No	Yes ($F = 2819$)	Yes ($F = 1038$)	Yes ($F = 2200$)	Yes ($F = 86$)
Quadratic trends	No	No	No	No	Yes ($F = 40285$)	Yes ($F = 663$)
Adjusted R^2	0.927	0.931	0.963	0.965	0.973	0.975

Sample: 1950–2003, $n = 206$ (unbalanced panel). Estimated using country population weights. All specifications include dummies for year and country as well as country-specific controls for total fertility rate, unemployment rate and female labor force participation rate and dummies if they are missing for any year. Standard errors are clustered by country and shown in parentheses.

*** Statistical significance at 1%.

** Statistical significance at 5%.

* Statistical significance at 10% level.

errors are clustered at the country level in order to account for possible serial correlation in the error terms.¹⁶ The total number of observations is 916.

A potential problem with this methodology is that it might confound pre-existing trends in divorce rates with the dynamic response to a policy shock, as suggested by Wolfers (2006). In other words, β in Eq. (1) only captures a discrete series break. Wolfers (2006) adopted an alternative approach that traced out the full adjustment path, and his results indicated that Friedberg's approach might have led to misleading conclusions on the impact of divorce legislation on the divorce rate. Hence, to account for the dynamic response to the legislative change we estimate the following equation:

$$\begin{aligned}
 \text{divorce rate}_{i,t} = & \sum_{k \geq 1} \beta_k \text{law in effect for } k \text{ periods}_{i,t} \\
 & + \sum_i \text{country fixed effects}_i + \sum_t \text{time fixed effects}_t \\
 & + \sum_i \text{country}_i \times \text{time}_t + X'_{i,t} \gamma + \varepsilon_{i,t}
 \end{aligned} \quad (2)$$

Whereas in Eq. (1) the *law* dummy captures the full adjustment process, Eq. (2) traces out the adjustment path with the inclusion of dummies for the law having been effective for 1–2 years, 3–4 years and so on. These variables capture the dynamic response of divorce, while the country-specific time trends identify pre-existing trends. It is of considerable interest to examine the full adjustment process as there may be “a temporary boost to divorce rates as a backlog of long dead marriages are given an opportunity for legal burial under new legislation” (Smith, 2002, p. 220). Thus these additional specifications allow us to detect to what extent the effects of the reforms are temporary or permanent.

5. Results

5.1. Main specifications

Table 2 reports the results of regressions that estimate the effect of the reforms that legalized divorce. These reforms are analyzed separately since they are qualitatively different from the rest in that divorce rates were (by definition) zero before the reform. Moreover, the theoretical discussion in the literature focuses on no-fault and unilateral reforms. However, we believe that analyzing the effect of legalizing divorce provides a useful benchmark. The regressions reported in Table 2 thus include observations only for Ireland, Italy, Portugal and Spain (see the divorce rates series in Fig. 2a).

The dependent variable is the annual number of divorces per 1000 people. The table shows specifications that always include year dummies and, as controls, total fertility rates, unemployment rates and female labor force participation rates (coefficients on the control variables are reported in Table 5). Standard errors are clustered at the country level, and the regressions are estimated by population-weighted least squares, weighting each observation by total population in a given country and year.¹⁷

¹⁶ This concern, and possible solutions, is addressed in Bertrand et al., 2004.

¹⁷ Unweighted results are available from the authors upon request.

Table 3

Static and dynamic effects of divorce law change (no fault); dependent variable: annual divorces per 1000 people

	Static 1	Dynamic 1	Static 2	Dynamic 2	Static 3	Dynamic 3
No fault	0.175 (0.163)		0.549*** (0.115)		0.262*** (0.055)	
No fault yrs 1–2		0.417*** (0.138)		0.629*** (0.099)		0.407*** (0.088)
No fault yrs 3–4		0.586*** (0.113)		0.860*** (0.087)		0.543*** (0.066)
No fault yrs 5–6		0.905*** (0.148)		1.063*** (0.123)		0.675*** (0.103)
No fault yrs 7–8		1.129*** (0.237)		1.397*** (0.158)		0.851*** (0.121)
No fault yrs 9–10		1.447*** (0.252)		1.613*** (0.132)		0.982*** (0.123)
No fault yrs 11–12		1.729*** (0.339)		1.646*** (0.093)		0.980*** (0.042)
No fault yrs 13–14		1.909*** (0.373)		1.670*** (0.083)		0.960*** (0.066)
No fault yrs 15+		2.218*** (0.324)		1.818*** (0.060)		1.01*** (0.086)
Country trends	No	No	Yes ($F = 203$)	Yes ($F = 78$)	Yes ($F = 221$)	Yes ($F = 158$)
Quadratic trends	No	No	No	No	Yes ($F = 93$)	Yes ($F = 133$)
Adjusted R^2	0.922	0.948	0.962	0.980	0.982	0.986

Sample: 1950–2003, $n = 185$ (unbalanced panel). Estimated using country population weights. All specifications include dummies for year and country as well as country-specific controls for total fertility rate, unemployment rate and female labor force participation rate and dummies if they are missing for any year. Standard errors are clustered by country and shown in parentheses.

*** Statistical significance at 1%.

Table 4

Static and dynamic effects of divorce law change (unilateral); dependent variable: annual divorces per 1000 people

	Static 1	Dynamic 1	Static 2	Dynamic 2	Static 3	Dynamic 3
Unilateral	0.083 (0.142)		0.400*** (0.112)		0.243** (0.076)	
Unilateral yrs 1–2		0.052 (0.077)		0.254** (0.083)		0.118 (0.073)
Unilateral yrs 3–4		0.148 (0.102)		0.386*** (0.111)		0.181* (0.095)
Unilateral yrs 5–6		0.246 (0.166)		0.563*** (0.153)		0.286* (0.147)
Unilateral yrs 7–8		0.345* (0.173)		0.712*** (0.183)		0.351* (0.160)
Unilateral yrs 9–10		0.174 (0.204)		0.613** (0.215)		0.201 (0.201)
Unilateral yrs 11–12		0.066 (0.241)		0.582* (0.294)		0.113 (0.249)
Unilateral yrs 13–14		–0.150 (0.215)		0.414 (0.264)		–0.081 (0.246)
Unilateral yrs 15+		0.003 (0.206)		0.644* (0.301)		–0.114 (0.242)
Country trends	No	No	Yes	Yes	Yes	Yes
Quadratic trends	No	No	($F = 2.8e+06$)	($F = 2.9e+05$)	($F = 2.3e+07$)	($F = 4.9e+05$)
Adjusted R^2	No	No	No	No	Yes	Yes

Sample: 1950–2003, $n = 525$ (unbalanced panel). Estimated using country population weights. All specifications include dummies for year and country as well as country-specific controls for total fertility rate, unemployment rate and female labor force participation rate and dummies if they are missing for any year. Standard errors are clustered by country and shown in parentheses.

*** Statistical significance at 1%.

** Statistical significance at 5%.

* Statistical significance at 10%.

The analysis suggests that legalizing divorce results in an average divorce rate of 0.32–0.35 divorces per 1000 people a year (see static specifications). The dynamic specifications suggest a U-shaped effect over time. Divorce rates jump from 0 to about 0.4 in the first 2 years following the reform, then decreasing slightly during the following few years, down to about 0.3 at 8 years after the reform, before increasing again. Fifteen years after the legalization, the divorce rate has reached about 0.5 annual divorces per 1000 people.¹⁸ Legalizing divorce therefore has a permanent effect of the divorce rate.

While it is important to control for time-varying, country-specific variables that may affect divorce rates, it is also true that fertility, female participation and (to a lesser extent) unemployment rates may in turn be affected by divorce rates, thus including them could “eat up” part of the total effect of the law change. Thus we also estimate all specifications without the control variables. When we do so, the coefficients on legalizing divorce remain strongly significant, and they increase slightly in size. In the static specifications, the effect ranges from 0.38 to 0.43.

Tables 3 and 4 report the results of analogous specifications where we estimate the effects of the introduction of no-fault and unilateral divorce, respectively. The specifications in Table 3 are estimated for the sub-sample of countries with a

¹⁸ We have also estimated specifications where we account for the fact that two of the legalizing countries introduced de-facto unilateral divorce at the time of legalization, while the other two did not. The increase in divorce rates was higher in the countries that introduced unilateral divorce.

Table 5

Static and dynamic effects of auxiliary variables; dependent variable: annual divorces per 1000 people

	Legal		No fault		Unilateral	
	Static	Dynamic	Static	Dynamic	Static	Dynamic
Fertility rate	0.211** (0.102)	0.146* (0.083)	−0.164 (0.179)	0.291*** (0.106)	0.225 (0.155)	0.255 (0.151)
Unemployment rate	1.195*** (0.276)	1.540*** (0.575)	2.656 (2.229)	4.656* (2.511)	3.329*** (0.865)	2.207** (0.959)
Female labor force participation rate	−0.097 (0.302)	−0.077 (0.127)	0.308 (0.607)	0.695 (0.457)	−0.565 (0.448)	−0.166(0.517)
Country trends	Yes (F = 2200)	Yes (F = 87)	Yes (F = 221)	Yes (F = 158)	Yes (F = 2.3e+07)	Yes (F = 4.9e+05)
Quadratic trends	Yes (F = 40286)	Yes (F = 663)	Yes (F = 93)	Yes (F = 133)	Yes (F = 3.7e+05)	Yes (F = 4.5e+05)
Adjusted R ²	0.973	0.975	0.982	0.986	0.933	0.939

Sample: 1950–2003 (unbalanced panel). Estimated using country population weights. All specifications include law reform dummies (as reported in Tables 2–4) and dummies for year and country as well as country-specific trends. Standard errors are clustered by country and shown in parentheses.

*** Statistical significance at 1%.

** Statistical significance at 5%.

* Statistical significance at 10%.

fault regime in 1950 that introduced no-fault divorce since then (see divorce rate series in Fig. 2b). Note that these countries also introduced de facto unilateral divorce at the same time, although always with a separation requirement.

According to the first-column specification in Table 3, the static model without country or quadratic trends, the introduction of no-fault divorce has an average effect of 0.18 on annual divorce rates per 1000 people, but the estimated effect is not significant. However, introducing country-specific linear and quadratic trends in columns 3 and 5 renders the coefficient larger and more significant, with estimated effects between 0.26 and 0.55 per 1000 people. The estimated size of the effect barely changes in the specifications that exclude the control variables, although significance increases in specification 1.

The dynamic specifications show that the increase in divorce rates following the introduction of no-fault grounds grows over time, such that the effect remains large, positive and significant even 15 years after the reform.

To examine the impact of unilateral reforms on divorce rates, the specifications in Table 4 are restricted to the sub-sample of countries with a no-fault regime in 1950 that introduced unilateral divorce by 2003 (see divorce rates in Fig. 2c). Since unilateral demand was only effective after the required separation period, the unilateral dummy takes value 1 starting the year when enough time had elapsed since the law was implemented for a couple to be able to fulfill the separation requirement. For instance, the reform introducing de facto unilateral divorce was implemented in Austria in 1978, but since the separation requirement was 6 years, the unilateral indicator takes value 1 starting in 1984.

The results in Table 4 show that unilateral legislation increases divorce rates by 0.08 to 0.40 (see static specifications), and this increase is significant in the specifications with country-specific trends. The results are very similar in the specifications that exclude the control variables. The increase in divorce rates following the reforms appears to peak about 8 years after the reform (see dynamic specifications), and typically turns insignificant after the first decade of the legislation becoming effective. These results are very much in line with Wolfers' (2006) findings for the US.

The specifications for all three types of reforms analyzed include controls for fertility, unemployment rates and female labor force participation rates. Table 5 reports the coefficient estimates of these auxiliary variables from the regressions in Tables 2–4 including country-specific trends. Fertility rates appear to have an unexpected, positive effect on the divorce rate, however, this effect disappears in the unweighted specifications (not reported).¹⁹ Whereas higher female labor force participation rate is not, in most cases, found to significantly affect the divorce rate, the unemployment rate has a significant positive impact on the divorce rate in practically all specifications, supporting the predictions in Becker et al. (1977) as well as many other recent papers.

So far we have separately analyzed the different sub-samples of countries that introduced each specific type of reform. A more compact specification would include all countries and analyze no-fault and unilateral reforms at once. The results of such specifications are reported in Table 6, where the sample includes all 14 countries where divorce was legal during the whole period.

The results for no-fault are similar to those reported in Table 3. The average effect of no-fault divorce amounts to a 0.34–0.47 increase in the annual divorce rate per 1000 people. The effect increases in size over the years following the reform in all dynamic specifications and remains positive and significant in the long term.

The estimates for unilateral divorce also confirm the results in Table 4. The static specifications suggest that the introduction of unilateral divorce increased divorce rates significantly, by about 0.23–0.40 annual divorces per 1000 people. However, the dynamic estimates show that the positive effect of unilateral divorce appears to fade between 5 and 8 years after the reform, and significance levels are low even in the initial post-reform years. For instance, according to

¹⁹ The results from the unweighted specifications are available from the authors upon request.

Table 6

Static and dynamic effects of no fault and unilateral; dependent variable: annual divorces per 1000 people

	Static 1	Dynamic1	Static 2	Dynamic 2	Static 3	Dynamic 3
No fault	0.353 (0.207)		0.469*** (0.138)		0.344*** (0.090)	
Unilateral	0.246** (0.101)		0.398*** (0.070)		0.233*** (0.061)	
No fault yrs 1–2		0.171 (0.193)		0.451** (0.151)		0.274*** (0.078)
No fault yrs 3–4		0.309* (0.168)		0.660*** (0.124)		0.434*** (0.105)
No fault yrs 5–6		0.297 (0.192)		0.698*** (0.181)		0.395*** (0.112)
No fault yrs 7–8		0.509 (0.334)		0.998*** (0.258)		0.636*** (0.148)
No fault yrs 9–10		0.507 (0.288)		1.045*** (0.248)		0.635*** (0.127)
No fault yrs 11–12		0.438* (0.231)		1.014*** (0.223)		0.559*** (0.134)
No fault yrs 13–14		0.414* (0.213)		1.021*** (0.199)		0.524*** (0.126)
No fault yrs 15+		0.451* (0.253)		1.240*** (0.208)		0.680*** (0.132)
Unilateral yrs 1–2		0.429 (0.387)		0.382 (0.387)		0.453 (0.392)
Unilateral yrs 3–4		0.179 (0.239)		0.132 (0.273)		0.219 (0.283)
Unilateral yrs 5–6		0.090 (0.258)		–0.026 (0.295)		0.089 (0.314)
Unilateral yrs 7–8		–0.007 (0.182)		–0.152 (0.211)		–0.008 (0.225)
Unilateral yrs 9–10		0.021 (0.155)		–0.143 (0.204)		0.038 (0.210)
Unilateral yrs 11–12		0.008 (0.186)		–0.171 (0.190)		0.046 (0.197)
Unilateral yrs 13–14		–0.070 (0.222)		–0.307 (0.212)		–0.049 (0.215)
Unilateral yrs 15+		–0.095 (0.157)		–0.617* (0.301)		–0.120 (0.293)
Country trends	No	No	Yes ($F = 8.1e+08$)	Yes ($F = 5.2e+05$)	Yes ($F = 3.1e+06$)	Yes ($F = 1.2e+05$)
Quadratic trends	No	No	No	No	Yes ($F = 1.4e+08$)	Yes ($F = 88718.4$)
Adjusted R^2	0.900	0.898	0.942	0.943	0.958	0.959

Sample: 1950–2003, $n = 710$ (unbalanced panel). Estimated using country population weights. All specifications include dummies for year and country as well as country-specific controls for total fertility rate, unemployment rate and female labor force participation rate and dummies if they are missing for any year. Standard errors are clustered by country and shown in parentheses.

*** Statistical significance at 1%.

** Statistical significance at 5%.

* Statistical significance at 10%.

specification 3, unilateral divorce raised divorce rates by 0.45 during the first 2 years, but the effect had fallen to 0.21 the following 2 years and was even lower (at 0.09) in years 5–6, becoming essentially zero or even negative after that.

Overall, our estimates suggest that the introduction of no-fault, unilateral legislation increased divorce rates by about 0.6 divorces per 1000 people a year (according to the third static specification). The dynamic specifications with country trends suggest that the effect of no-fault divorce was about 0.43–0.66 at 4 years after the reforms, while unilateral had increased divorce rates by about 0.13–0.22 in the same period (not significant). In the long term, the effect of no-fault reforms was about 0.7–1.2, while the one for unilateral was zero or even negative. The magnitudes of the estimated effects are sizeable considering the average divorce rate in the 14 countries in the sample was 2.3 divorces per 1000 people in 2002.

5.2. Additional specifications and robustness checks

One might worry that the reported results may be driven by the larger countries in the sample, given that all the regressions are weighted by total population. We thus also estimate unweighted regressions for all specifications.²⁰ The estimated effect of legalizing divorce is virtually unchanged in both size and significance in the unweighted specifications. The effects of no-fault legislation appear somewhat smaller and less significant in the regressions without the weights, suggesting that the UK and France are driving the stronger weighted results. Finally, the unweighted specifications show similar static effects of unilateral legislation, and dynamic effects that appear even more short-lived than in the weighted specifications.

Our main analysis reports the effects of the legal reforms on annual divorces per 1000 people, in order to obtain results that are directly comparable with the previous US literature. However, since the divorce legislation may also affect the marriage rate, we provide additional results using divorces per 1000 married people as a dependent variable.²¹ These results essentially confirm the conclusions obtained in the regressions using divorces per 1000 people, although the magnitudes of the effects are larger, given the smaller denominator of the dependent variable.

Regressions were also estimated, with minor changes in the definition of unilateral, for those countries where there was any doubt about the timing or the nature of the reforms.²²

²⁰ Full unweighted regression results are available upon request from the authors.

²¹ Full regression results are available upon request from the authors.

²² Essentially Belgium, Greece and Switzerland.

The use of a 54-year-long panel may raise doubts about the validity of the time trends, especially when including linear and quadratic trends. Thus we also estimated regressions with a shorter, balanced version of the panel spanning from 1960 to 2002, with very similar results.

We may also worry that only a few countries may be driving most of the results, so we estimated the regressions dropping one individual country at a time. The results did not seem overly sensitive to the exclusion of any specific country.

Finally, the countries in the sample vary a great deal in terms of the separation period required to obtain a unilateral divorce. Longer separation requirements imply a higher cost and thus one may expect they would be associated with smaller effects of allowing unilateral divorce. In order to test for this possibility, we define a dummy indicating “long separation period”, taking value 1 for countries with separation period 5 years or longer (or 6 years or longer). We then estimate the regressions adding the dummy for long separation period on top of the unilateral indicator. The results suggest that longer separation periods, as expected, lead to smaller effects of unilateral divorce, but the coefficient is always small and statistically insignificant. For instance, take specification 2 in Table 4. Adding the dummy for long separation period increases the unilateral coefficient from 0.400 to 0.406, while the coefficient on the dummy for separation period 5 years or longer is -0.046 (with standard deviation 0.199).

All of the robustness checks supported the main conclusions that the reforms that liberalized divorce in Europe tended to increase divorce rates significantly, and that the effects were permanent.²³

6. Conclusions

This paper analyzes a panel of 18 European countries spanning from 1950 to 2003 to examine the extent to which the legal reforms leading to “easier divorce” that took place during the second half of the 20th century have contributed to the increase in divorce rates across Europe.

No-fault divorce is expected to increase divorce rates by reducing the cost of obtaining a divorce (since dropping the requirement to prove fault in court would reduce transaction costs). According to the Coase theorem, unilateral divorce should not affect divorce rates since it simply reassigns existing property rights between spouses. However, some previous studies for the US found significant increases in divorce rates following reforms that introduced unilateral divorce.

We find that countries allowing unilateral divorce experienced increases in divorce rates for several years following the reform, with an average increase of about 0.3–0.4 annual divorces per 1000 people, a finding that is strikingly similar to that of Wolfers (2006). Moreover, the effects of introducing no-fault divorce legislation (unilateral or not) seem stronger both in size and significance, leading to long-term increases in the divorce rate. These effects are substantial given that the four countries that legalized divorce experienced long-term increases in their divorce rates of about 0.5 as a result of the reforms.

These results support and extend the findings of previous studies that used US data to address the effect of unilateral divorce legislation on divorce rates. Like Friedberg (1998) and Wolfers (2006), we find that unilateral divorce appears to increase divorce rates. But we also show that it was the generalization of no-fault, de facto unilateral divorce that really contributed to rising divorce rates in Europe.

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References

- Allen, D.W., 1992. Marriage and divorce: Comment. *American Economic Review* 82 (3), 679–685.
- Becker, G., 1981. *A Treatise on the Family*. Harvard University Press, Cambridge.
- Becker, G., Landes, E., Michael, R., 1977. An economic analysis of marital instability. *Journal of Political Economy* 85 (6), 1141–1188.
- Bertrand, M., Duflo, E., Mullainathan, S., 2004. How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics* 119 (1), 249–275.
- Boele-Woelki, K., 2005. The principles of European family law: Its aims and prospects. *Utrecht Law Review* 1 (2), 160–168.
- Boele-Woelki, K. et al. (Eds.), 2003. *European Family Law in Action*. Vol. 1: Grounds for Divorce. Intersentia, Antwerp-Oxford-New York.
- Boele-Woelki, K., Ferrand, F., González Beilfuss, C., Jänterä-Jareborg, M., Lowe, N., Martiny, D., Pintens, W., 2004. *Principles of European Family Law Regarding Divorce and Maintenance Between Former Spouses*. Intersentia, Antwerp-Oxford.
- Clark, S.J., 1999. Law, property and marital dissolution. *Economic Journal* 109, C41–C54.
- Coelho, C., Garoupa, N., 2007. Do divorce law reforms matter for divorce rates? Evidence from Portugal. *Journal of Empirical Legal Studies* 3 (3), 525–542.
- Dutoit, B., Arn, R., Sföndylia, B., Taminelli, C., 2000. *Le divorce en droit comparé*. Vol. 1: Europe. Librairie Droz, Genève.
- European Commission, 2005. *Green Paper on Applicable Law and Jurisdiction in Divorce Matters*. COM(2005) 82 Final. Brussels: European Commission.

²³ The full regression results mentioned in this section are available upon request.

- Fella, G., Manzini, P., Mariotti, M., 2004. Does divorce law matter? *Journal of the European Economic Association* 2 (4), 607–633.
- Friedberg, L., 1998. Did unilateral divorce raise divorce rates? Evidence from panel data. *American Economic Review* 83 (3).
- Gardner, J., Oswald, A.J., 2006. Do divorcing couples become happier by breaking up? *Journal of the Royal Statistical Society Series A* 169 (2), 319–336.
- Gruber, J., 2004. Is making divorce easier bad for children? The long-run implications of unilateral divorce. *Journal of Labor Economics* 22 (4), 799–833.
- Mechoulan, S., 2005. Economic theory's stance on no-fault divorce. *Review of the Economics of the Household* 3, 337–359.
- Parkman, A.M., 1992. Unilateral divorce and the labor-force participation rate of married women, revisited. *American Economic Review* 82 (3), 671–678.
- Peters, H.E., 1986. Marriage and divorce: Informational constraints and private contracting. *American Economic Review* 76 (3), 437–454.
- Peters, H.E., 1992. Marriage and divorce: Reply. *American Economic Review* 82 (3), 686–693.
- Rainer, H., 2007. Should we write prenuptial contracts? *European Economic Review* 51 (2), 337–363.
- Rasul, I., 2006. The Impact of Divorce Laws on Marriage. Unpublished.
- Smith, I., 2002. European divorce laws, divorce rates, and their consequences. In: Dnes, A.W., Rowthorn, R. (Eds.), *The Law and Economics of Marriage & Divorce*. Cambridge University Press, Cambridge.
- Stevenson, B., 2007. The impact of divorce laws on marriage-specific capital. *Journal of Labor Economics* 25 (1), 75–94.
- Stevenson, B., Wolfers, J., 2006. Bargaining in the shadow of the law: Divorce laws and family distress. *Quarterly Journal of Economics* 121 (1), 267–288.
- Stevenson, B., Wolfers, J., 2007. Marriage and divorce: Changes and their driving forces. *Journal of Economic Perspectives* 21 (2), 27–52.
- Wolfers, J., 2006. Did universal divorce laws raise divorce rates? A reconciliation and new results. *American Economic Review* 96 (5), 1802–1820.