

# The Birth of Surrogate Motherhood Law: An Economic Analysis of Institutional Reform\*

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## Abstract

Why is surrogacy enforceable in some of the US jurisdictions and not in others? In what way does the enforcement of surrogate motherhood contracts effect the number of exchanges between intended parents and surrogate mothers? Throughout the last two decades of the twentieth century, public approval of surrogate motherhood, as expressed in opinion surveys, increased. Using data from surveys carried out through the period 1983-1992 I examine the relationship between approval of surrogate motherhood and time to legal institutional change. By means of duration analysis I show that, through political processes, changing beliefs effect institutional change. Other factors, including accidents, imitation, and historical conditions, are also shown to have an effect on the probability of legal institutional change. By means of a comparative institutional analysis I show that between the years 2003 and 2010 states with judge-made-surrogacy law registered systematically higher number of surrogate motherhood contracts than other states.

*JEL classification:* D02, C41, K12, K36, K42

*Keywords:* Institutional change, legal enforcement, surrogate motherhood, duration analysis, comparative institutional analysis.

## Introduction

In 1960, Gary Becker noted that “children cannot be purchased on the open market but must be produced at home. Most families are no longer self-sufficient in any major commodity other than children” (p. 216). One may feel uncomfortable about putting children, production, commodities

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\*I am grateful for the help and suggestions of Niclas Berggren, Boudewijn Bouckaert, Pavel Chalupníček, Enrico Colombatto, David Dolejší, Theodore Eisenberg, Dan Klein, Marc Law, David Lipka and Marta Podemska-Mikluch; I thank to participants of the 2012 New Orleans Southern Economic Association Conference, the 2012 Prague Conference on Political Economy and to participants of the University of Gent, George Mason University and Xiamen University workshops. The usual caveat applies.

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and markets in the same sentence.<sup>1</sup> Without question, however, in the 1960s an infertile couple had no alternative means to conceive a genetically-related offspring. By the late 1970s the situation had changed.

The greater availability of contraception and abortion, together with the changing economic and social circumstances of single mothers and strong regulation of adoption procedures in the United States resulted in a shortage of suitable adoptive children.<sup>2</sup> A solution to the difficulties caused by infertility was found through innovative applications of assisted reproductive technology. In 1978, the first test tube baby was born, and the new method of in vitro fertilization, along with the novel application of artificial insemination, would give hope to couples for whom adoption was not a viable option. In the same year a Michigan judge approved the first adoption of a child conceived by way of a surrogate motherhood agreement. In the Becker parlance, the process of procreation could now be outsourced. Technological advances introduced the possibility of conceiving genetically-related children outside the traditional heterosexual marriage. In the following years, the practice of surrogate motherhood generated heated discussion, praise and outrage. By 1995, about twenty states had introduced legislation specifically addressing the new phenomenon of surrogacy.

Why is surrogacy enforceable in some of the US jurisdictions and not in others and how does the enforcement of surrogate motherhood contracts effect the number of exchanges between intended parents and surrogate mothers? Identifying which factors matter for the adaptation of institutional rules and understanding their effects on the decisions and purposes of people interested in surrogacy provides insights into the processes of market emergence and design. Without understanding the complexity of these processes, setting up market-supporting institutions may seem like an engineering exercise in minimizing transaction cost. I show, however, that the emergence of new institutional arrangements results from the development of new knowledge and from changes in shared beliefs. To investigate the causes and consequences of institutional adaptation, I employ duration analysis and comparative institutional analysis.<sup>3</sup>

Analyzing survey data I show that, by means of political processes, changing beliefs determined the boundaries of institutional adaptation.<sup>4</sup> States in which the median voter approved of surrogate

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<sup>1</sup>Becker (1960) recognizes that “it may seem strained, artificial, and perhaps even immoral to classify children with cars, houses, and machinery. This classification does not imply, however, that the satisfactions or costs associated with children are morally the same as those associated with other durables” (pp. 210-211). I believe that, for analytical purposes, this abstraction should be embraced. This is because “abstracting from the kind of satisfaction provided by children makes it possible to relate the ‘demand’ for children to a well-developed body of economic theory” (p. 211).

<sup>2</sup>The fall in the number of babies available for adoption in the 1970s has been mentioned, among others, in Bachrach (1986), Berkov (1976), Landes (1978) and Posner (1987; 1989).

<sup>3</sup>The present work contributes to the body of literature that investigates the causes and consequences of diverse institutional arrangements such as Collins (2003), Fishback and Kantor (1998) or Law and Long (2012).

<sup>4</sup>For the purpose of my analysis I define institutions as coercively enforced rules. See, for example, Greif and Tadelis (2010, p. 229).

motherhood were more likely to make changes to their legal institutions than states in which the median voter was opposed or indifferent. Besides the judgment on the innovative practice, other things, such as accidents, imitation, and historical conditions, are shown to have a complementary effect on the probability of institutional change.

To provide empirical analysis of the effects different institutional settings have on the rates of surrogate motherhood I look into the surrogate motherhood law in the United States. We can reasonably expect that people consider their expected costs even in the case of surrogacy and that formal contractual enforcement does reduce these costs. If contractual enforcement indeed reduces transaction costs, we should observe more interactions between intended parents and gestational carriers in the states that legally enforce surrogate motherhood contracts compared to those states that do not enforce these contracts or relative to states that ban them. The comparative institutional analysis provides evidence that different institutions have different consequences with regard to the outcomes of surrogacy arrangements.

## **1 The birth of assisted reproductive technology**

The way we speak about procreation, and about surrogacy in particular, results from a specific application of assisted reproductive technology that has taken place since the late 1970s when the first agencies started matching childless couples with women willing to conceive and bear children for them. Surrogacy is an innovation built around assisted reproductive technology (ART), which is a set of methods used to help deal with human infertility. For surrogate motherhood, artificial insemination (AI) and in vitro fertilization (IVF) have been essential.

While artificial insemination has been successfully applied to treat human infertility since the 19th century, until the 1970s no effort had been made to apply this technique in a way which would challenge the belief that a woman who gives birth to a child is also the legal mother. The first successful birth resulting from IVF took place in 1978, and it was during the late 1970s and early 1980s that the changing circumstances in the adoption market invited entrepreneurs to combine the available methods in new ways and introduce surrogate motherhood as a solution to the problem of infertility.

Although surrogate motherhood was an unprecedented phenomenon and no legal institutions designed with surrogacy in mind were available at the time of its introduction, IVF and surrogacy did not appear in a legal void. There were statutes that would – in unintended ways – influence the way in which IVF and surrogacy were put into practice.

The growing interest in the new means of procreation resulted in a large number of bills proposing various ways of dealing with surrogacy.<sup>5</sup> Over time, some of the proposed bills turned into state

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<sup>5</sup>For an overview of the bills proposed, see Andrews (1987).

Table 1: Introducing legislation specifically addressing the new phenomenon of surrogacy

Year	State
1984	Kansas
1985	Arkansas
1986	Wisconsin
1987	Nevada, Louisiana
1988	Florida, Indiana, Kentucky, Michigan, Nebraska
1989	Arizona, Iowa, North Dakota, Utah, Washington
1990	Alabama
1991	New Hampshire, Virginia
1993	District of Columbia, New York
1994	West Virginia
1995	Tennessee
1999	Illinois
2004	Texas

legislation. By 1989 about ten had states introduced legislation specifically addressing the new phenomenon.<sup>6</sup> Arkansas, Florida and Nevada started enforcing surrogacy contracts. While the approach Florida adopted was very restrictive – affirming surrogacy but bureaucratizing the procedure – both Arkansas and Nevada took a less stringent attitude, by broadly allowing “contractual intent to decide the right to the parent-child relationship” and by validating “the acquisition by contract of procreative resources” (Wagner 1990, pp. 109–110). Kentucky, Louisiana, Michigan and Nebraska, on the other hand, declared surrogacy contracts to be void and unenforceable, and emphasized “the criminal nature of formal, compensated maternity for hire agreements” (Wagner 1990, p. 116).

During the next few years the growth of legislative activity reflected the growing public interest in surrogacy (see Table 1 for details). Since 1989 “nearly every state legislature has considered laws to allow, ban or otherwise regulate surrogate motherhood” (Andrews 1995, p. 2346).<sup>7</sup> By 1995 about twenty surrogacy laws had been adopted. By 2004 there were twenty-four states which had adopted statutes that are directly relevant to surrogacy contracts.

Economists agree that institutions tend to adapt to changing external conditions.<sup>8</sup> The examination of the adaptation of the law to surrogacy which followed the introduction of new artificial

<sup>6</sup>Ark. Stat. Ann. § 9-10-201 (Supp. 1989); Fla. Stat. § 63.212 (1989); Ky. Rev. Stat. Ann. § 199.590 (1989); La. Civ. Code § 9:2713(A) (1990); Mich. Comp. Laws § 710.69 (1979); Neb. Rev. Stat. § 25-21,200 (1988); Nev. Rev. Stat. § 127.287 (1989). For a discussion see Wagner (1990, pp. 109–122).

<sup>7</sup>In addition to the previous statutes, Ala. § 26-10A-33; Ariz.R.S. § 25-218; D.C. Code §16-401; Fla. Stat. § 742.15 (1995); Ind. Code Ann. § 31-8-1-1; Mich. Comp. Laws § 722.853 (1993); Nev. Rev. Stat. § 126.045 (1993); Iowa Code § 710.11; N. H. RSA 168-B:1; NY CLS Dom Rel § 123; N.D. Cent. Code, § 14-18-01; Utah Code Ann. § 76-7-204; Va. Code Ann. § 20-156; Rev. Code Wash. (ARCW) § 26.26.210; W. Va. Code § 48-4-16.

<sup>8</sup>Kingston and Caballero (2009) provide a good summary of the institutional change literature.

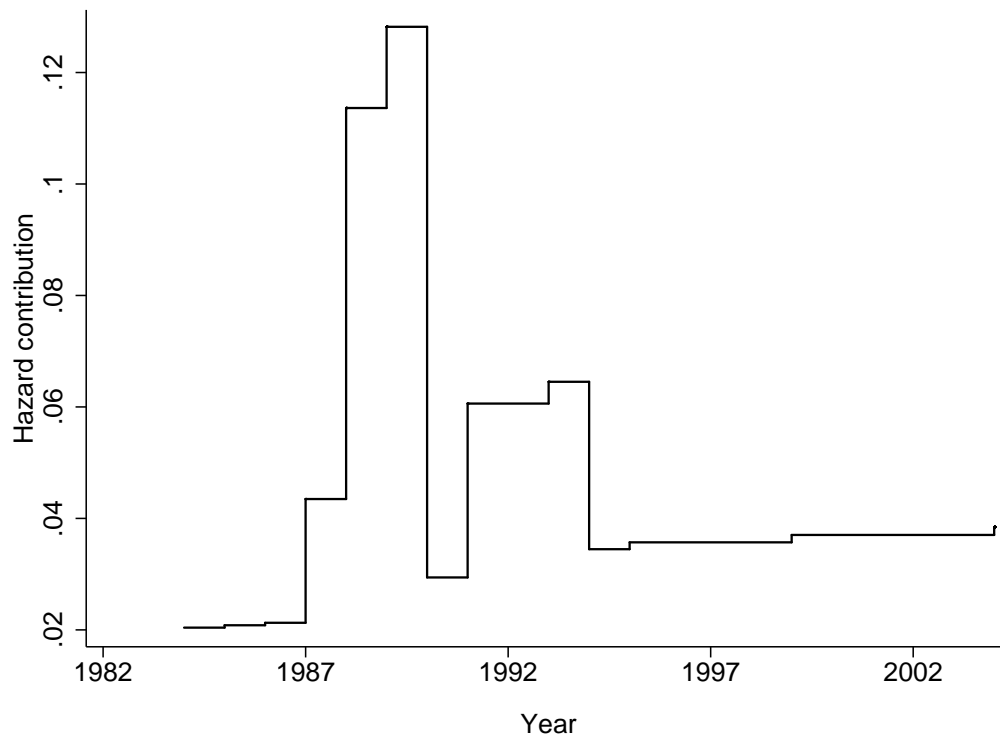


Figure 1: Hazard contribution

reproductive technology seems to confirm the prediction given by theories of institutional change. Technological change does breed institutional change. In what follows, we will look further into the factors that tend to influence the probability of institutional change.

### 1.1 Data and hypotheses

Which factors lead states to adopt new or to adjust old institutional arrangements with regards to surrogate motherhood? To answer this question I use duration analysis. The explained variable of interest is the probability of institutional change in a given state at a given time or, in other words, the hazard of adopting surrogacy law. This hazard is calculated using the time which had elapsed before a change happened. The time elapsed before the change is counted from the moment in vitro fertilization was first successfully used, that is, from the year 1978. Consequently, there are 991 times at risk (for each state in every year) in which the legal institutional change could have taken place. The change took place in 24 cases.

To see the explained variable, look at the hazard contribution throughout the studied period of

time shown in Figure 1. The hazard contribution is the change in the cumulative hazard function between two successive observed failure times. In the hazard contribution, we look at the slope of the cumulative hazard function.

We can see there are two time intervals where the hazard contribution peaks. Before and after these peaks the hazard contribution looks more or less constant. Apart from the two bumps, the trend of cumulative hazard seems to be slightly increasing: the longer the time, the greater the chance of institutional change.

I suggest that the essential predictor of the probability that a new surrogacy law will be adopted is the approval of surrogacy in the respective populations. To test this hypothesis I use data from social surveys that were carried out through the period 1983-1992.<sup>9</sup> The overview of the development of approval in the regions is shown in Figure 2.

The societal approval was measured by asking samples of the US population equivalents of the following question: “Do you approve of surrogate motherhood?” The responses were coded so that the answer “No” carries the value of “-1”, “Don’t know” is represented by “0” and “Yes” by the value of “1”. Interestingly, looking at the median voter, the approval goes from an indifferent attitude towards surrogacy in most of the states in 1983, to an approval by the median voter in some states in 1987, and to an approval by most of the median voters in 1992. I expect the probability of change will be stronger the higher the approval of surrogacy in a given state.

When looking into the effect of attitudes, additional hypotheses are examined and additional variables are controlled for. My explained variable is the probability of adopting a surrogacy law. The independent variables can be categorized as either intrastate or interstate characteristics (Earl et al. 2004). The interstate factor to be tested is the effect of imitation.<sup>10</sup> The probability of an institutional change in a given state at a given time is a function of the proximity to sources of diffusion of the change. The imitation hypothesis says that the probability of change is positively influenced by the proximity to a source of the change. A dummy variable indicating whether an institutional change happened in one of the neighboring states up to three years before the examined state adopted a new law should explain a part of the probability of institutional change.<sup>11</sup>

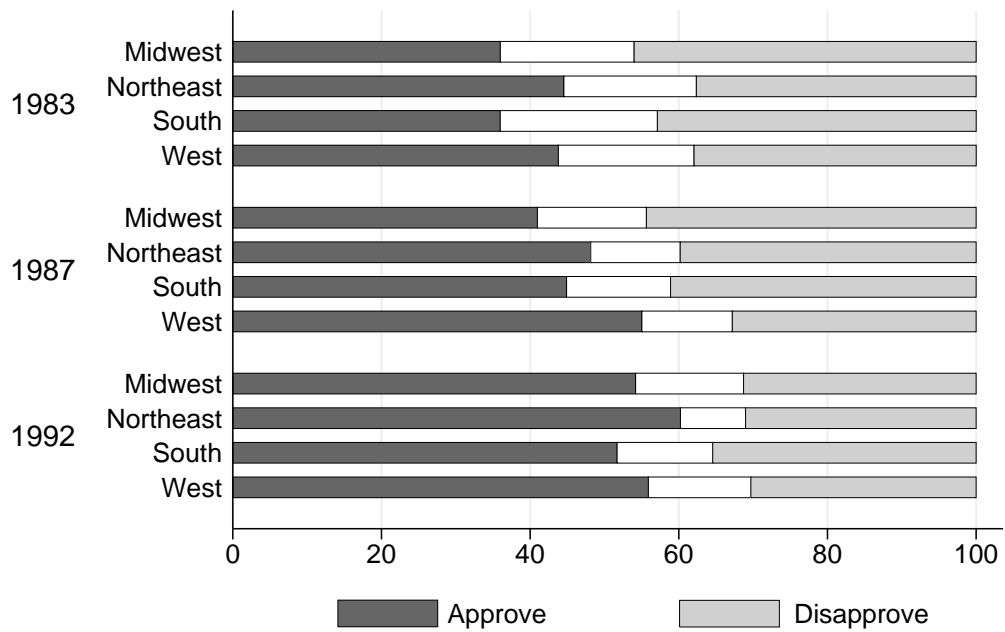
Other hypotheses require controlling for intrastate characteristics. According to the literature,

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<sup>9</sup>Gallup Poll released on June 27, 1983; Time/Yankelovich Poll, release date January 21, 1987; Time/Yankelovich Poll/CNN Poll, release date May 14, 1992.

<sup>10</sup>DiMaggio and Powell (1983) call this effect “institutional isomorphism”.

<sup>11</sup>From a theoretical perspective, the interstate effects may go both ways. It is conceivable that an institutional legal change in one state may slow the rate of change in the nearby states as parties in need of contract enforcement now have readily available solutions. A neighboring state institutional change is equivalent to price decrease for a close substitute, leading to a decrease in demand for at-home contract enforcement. Whether the institutional change reflected the isomorphism or the substitution effect is eventually an empirical question. For this particular point I am grateful to Marta Podemska-Mikluch.



Approval by Years and Regions (percent)

Figure 2: Do you approve of surrogate motherhood?

institutions follow a pattern described as punctuated equilibrium (Elderedge and Gould 1977; Young 1996). In essence, this means that the way institutions evolve is, to some extent, accidental. Hypothetically, institutions embedding the practice of surrogacy should appear and evolve in disparate periods of experimentation followed by periods of competitive weeding out; the theory predicts that there will be long periods of inertia followed by short periods of arbitrary crises, followed by political action.

It might be the case that an example of this institutional crisis starts with the *In re Baby M* case in New Jersey in 1987. If the theory of punctuated equilibrium holds, the institutional development after the prolonged litigation which raised public awareness about surrogacy might have opened the doors for major legal intervention. In other words, the probability of change should be higher after the crisis occurs. This seems plausible if we look at the two peaks in the hazard contribution function. Coincidentally, these peaks follow two landmark cases of surrogate motherhood, those of *In re Baby M* (1987) and *Johnson v. Calvert* (1990). These cases might indeed be instances of institutional crises that were followed by political action.

What is the effect of the original legal institutions? By the end of the 1970s, states differed in terms of their legal institutional frameworks regarding fetal research. Did these differences systematically influence the probability of adopting a new surrogacy law? So as to test the path dependence hypothesis, I include a dummy variable coded “1” if the particular state had a law restricting fetal research and “0” otherwise. Original legal institutions might have unintentionally rendered surrogacy arrangements illegal. The basic intuition here is that, other things being equal, states with original legal institutions which in unintended ways interfered with surrogate motherhood faced a stronger need to adjust their legal institutions and adopt a new surrogacy law.

It might be argued that the more conservative states that had employed restrictive legislation regarding fetal research would be more likely to resist institutional change and merely to extend their existing legal institutional rules in order to render surrogacy illegal. For this reason the empirical analysis controls for the effects of the ideology of any given state in any particular year using a revised citizen ideology index constructed by Berry et al. (1998).<sup>12</sup>

Presumably, media attention positively affects the probability of adopting a surrogacy law in a given state. I created a media-attention variable by means of an extensive keyword search which generated a set of newspaper articles about surrogate motherhood in the studied time period.<sup>13</sup> The articles in this set were coded and assigned to a particular state in a particular year. The development of media attention is graphically represented in Figure 3. What is interesting about the media attention

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<sup>12</sup>The ideology index ranges from 0 to 100, where lower values represent a more conservative position and higher values represent a more liberal position.

<sup>13</sup>For the keyword search I looked into the Lexis-Nexis database and complemented it with a search through Google News archives.



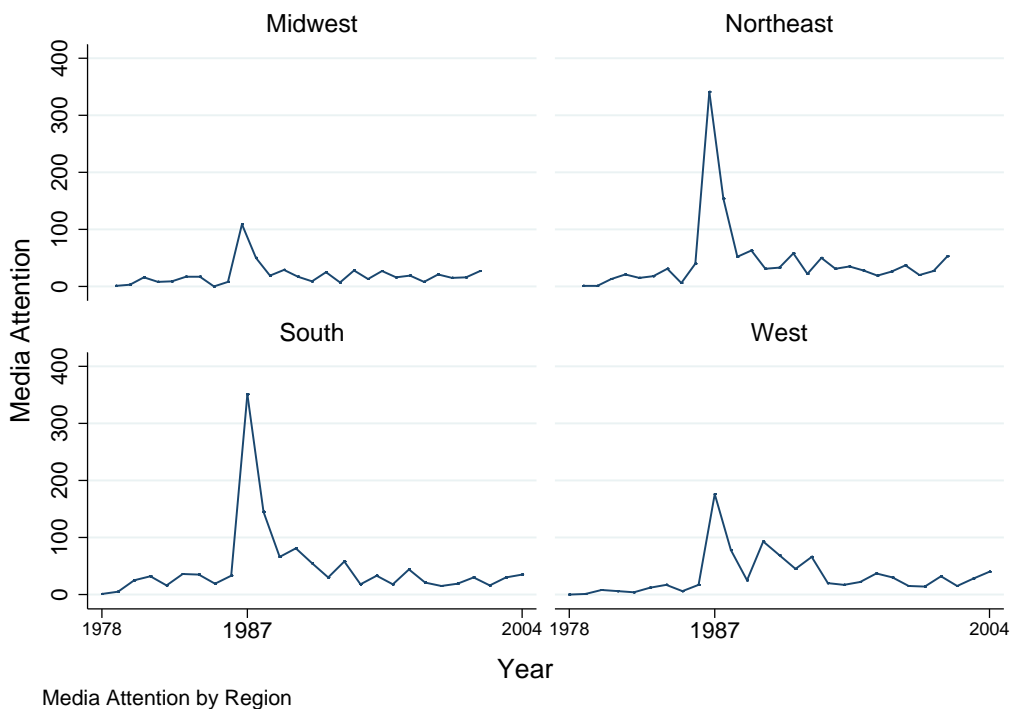


Figure 3: News article counts

is its regional heterogeneity. The effect of the 1987 Baby M case can be seen throughout all the regions. The New Jersey trial, however, had a much stronger effect on the East Coast of the United States. Conversely, the Californian Johnson v. Calvert case, which took place at the beginning of the 1990s, seems to have been echoed predominantly by the West Coast media.

I control for additional variables at the state level such as urbanization, advanced education level and average per capita income of a given state. To control for the homogeneity of political representation, I test a dummy variable indicating whether or not the political party of the governor differed from the majority of the state legislators. The variables included in the preliminary model are summarized in Table 2.

Testing the auxiliary hypotheses may provide some insights into the theory of institutional change. The major point of interest, however, is the effect of shared beliefs and attitudes on the probability of adopting a surrogacy law during the two decades after the introduction of in vitro fertilization.

Table 2: Descriptive statistics

	Total	Mean		Min	Max
Time at risk	991	20.2245		7	27
Changes	24			0	1
	Obs	Mean	Std. Dev	Min	Max
Median approval	907	0.24	0.70	-1	1
Post Baby M	991	0.08	0.28	0	1
Imitation	991	0.14	0.34	0	1
Fetal research restriction	991	0.50	0.50	0	1
Political homogeneity	991	0.45	0.50	0	1
Urbanization	991	68.12	15.40	32.20	100.00
Media attention	991	3.30	10.23	0	158
Advanced education	991	7.33	2.28	4.50	17.20
Citizen ideology	975	48.13	15.99	9.25	95.97
Church adherence	975	526.28	111.82	292.05	797.57
Income per capita	991	25470.59	6316.51	15019	46693

## 2 Duration analysis

To carry out the survival analysis, I use an accelerated failure time method (AFT). Formally, we are interested in predicting the expected time to institutional change as the values of covariates change. The AFT estimation is parametrized as follows:  $\ln(t_j) = x_j\beta_x + \varepsilon_j$  assuming a distribution for  $\tau_j = \exp(-x_j\beta_x)t_j$  so that  $t_j = \exp(x_j\beta_x)\tau_j$  and therefore  $\ln(t_j) = x_j\beta_x + \ln(\tau_j)$ . I assume that  $\tau_j \sim \text{Log-logistic}(\beta_0, \gamma)$ , based on the Nelson-Aalen hazard estimates. The shape of the estimated Nelson-Aalen hazard function suggests that the log-logistic distribution of the random parameter  $\ln(\tau_j)$  provides the best fit for the underlying baseline hazard of the observed data. This assumption is also supported by the Akaike Information Criterion (AIC) that tests and compares the appropriate assumed distribution of  $\varepsilon_j$ . The effect of covariates on the expected time before the institutional change can be estimated using the log-logistic AFT regression.

$$S(t_j|x_j) = \left[1 + \left\{\exp(-\beta_0 - x_j\beta_x)t_j\right\}^{\frac{1}{\gamma}}\right]^{-1}$$

In this regression the effect of a particular covariate is estimated by an acceleration parameter  $\exp(-x_j\beta_x)$ . The intuition behind this parameter is very convenient for estimating the effect of covariates on survival time. If the acceleration parameter is greater than one, we can say that the change is expected to happen sooner: the probability of institutional change is higher if the acceleration parameter  $\exp(-x_j\beta_x) > 1$ . Conversely, if the acceleration parameter is smaller than one, the institutional change is expected to occur later: the probability of institutional change is lower if  $\exp(-x_j\beta_x) < 1$ .

The efficiency of different model specifications was examined on a stepwise basis using the Akaike Information Criterion (AIC) test. This test provided some information on the preliminary models and, based on this criterion, the inclusion of control variables in the AFT model was decided. This is the final model.

$$S(t_j|x_j) = \left[1 + \left\{\exp(-\beta_0 - \text{MEDIAN}\beta_1 - \text{IMITATION}\beta_2 - \text{BABYM}\beta_3 - \text{ADVEDUC}\beta_4 - \text{INCOME}\beta_5 - \text{HOMOGENEITY}\beta_6 - \text{IDEOLOGY}\beta_7)t_j\right\}^{\frac{1}{\gamma}}\right]^{-1}$$

I leave out some of the explanatory variables mentioned above (see Table 2) such as the rate of urbanization, media attention, church adherence, and the variables specifying the initial legal structure of particular states because, based on the AIC test, they are not important confounders. These variables do not seem to have great explanatory power as far as legal institutional change goes.

In order to tap the potential effect of the initial legal institutions, different functional forms were examined. In fact, it seems to be the case that the states can be meaningfully divided into two groups according to the effect of the original institutional structure, based on the expected time of institutional change. This can be achieved by looking into the effect of fetal-research restrictions.

$$S(t_j|x_j) = \begin{cases} \left[ 1 + \{ \exp(-\beta_0 - x_j\beta_x) t_j \}^{\frac{1}{\gamma}} \right]^{-1} & \text{if } FETALRES = 0 \\ \left[ 1 + \{ \exp(-\beta_0 - x_j\beta_x) t_j \}^{\frac{1}{\gamma + FETALRES}} \right]^{-1} & \text{if } FETALRES = 1 \end{cases}$$

According to AIC the variable should not be included in the list of covariates, and a more efficient estimation of the effect will be achieved if the variable is taken out of the list of covariates and used as a linear ancillary parameter gamma. This way it can be assumed that the shape of the hazard function changes according to whether or not the state had a law restricting fetal research that might have influenced the probability of institutional change. Hence the second specification of the model.

## 2.1 Results

The effect of attitudes toward surrogacy in terms of the acceleration parameter is positive and statistically significant. States in which the median voter approves of surrogacy are more likely to have their legal institutions changed than states in which the median voter is indifferent or states where the median voter disapproves of surrogacy.<sup>14</sup> In other words, institutional change in the states where the median voter approves of surrogacy is expected to take place sooner. The estimated results are presented in Table 3.

Due to the fact that the public approval of surrogacy is used to explain the institutional change which would take place in the future time period it does not seem to be the case that there is an endogenous feedback from the change towards the attitudes within the studied periods. If this is true, the changing attitudes must cause the legal institutional change.

The imitation hypothesis also seems to give a partial explanation of the occurrence of legal institutional change. The acceleration parameter in both specifications is greater than one and strongly statistically significant. The likelihood of legal institutional change is higher in those states that had a neighbor that went through the change during the preceding three years. The magnitude of the imitation effect seems to be slightly higher than the effect of the societal approval of surrogacy.<sup>15</sup>

The hypothesis of punctuated equilibrium explains institutional change by means of an exoge-

<sup>14</sup>In the case of the median voter approval we observe that  $\exp(-MEDIAN\beta_1) = \exp(0.606\beta_1) = 1.832\beta_1$  meaning that the probability of institutional change is about 83% higher if the median voter approves of surrogacy than if the median voter is indifferent.

<sup>15</sup>The imitation acceleration parameter is  $\exp(-IMITATION\beta_2) = \exp(0.785\beta_2) = 2.192\beta_2$  in the first specification.

Table 3: Results

Log logistic AFT regression		
	[1]	[2]
Median approval	-0.606 (0.188)***	-0.453 (0.202)**
Imitation	-0.785 (0.249)***	-0.717 (0.281)**
Post Baby M	-1.229 (0.279)***	-1.051 (0.306)***
Advanced education	0.154 (0.034)***	0.146 (0.036)***
Income per capita	0.000 (0.000)**	0.000 (0.000)
Political homogeneity	0.552 (0.215)**	0.391 (0.278)
Citizen ideology	0.016 (0.011)	0.010 (0.084)
Constant	2.025 (0.623)***	2.080 (0.733)***
ln(gamma)	-1.153 (0.204)***	
gamma	0.316 (0.064)	
ln(gamma)		
Fetal research restricted		-0.761 (0.410)*
Constant		-0.896 (0.233)
Obs	891	891
Log likelihood	-20.97	-18.67

Robust standard errors in parentheses, clustered by state. Statistical significance indicated at 10% (\*), 5% (\*\*) and 1% (\*\*\*) levels.

nous institutional crisis which gives way to political action. This hypothesis is tested by plugging in the Post Baby M variable. The results show that in the years after the trial the likelihood of legal institutional change was higher. In other words, the probability of institutional change is higher for those states that did not go through the legal institutional change before 1987.<sup>16</sup> The coefficients of the Post Baby M variable are strongly significant. Second, the underlying baseline hazard of the observed data, shown, for example, by the Nelson-Aalen estimator and confirmed by the efficiency of the log-logistic AFT model which assumes a baseline hazard function with an inflection point, hints at the plausibility of the punctuated equilibrium theory in the case of the institutional change being examined here. The institutional change seems to follow periods of constant hazard disrupted by arbitrary turbulences caused by institutional crises during which the hazard of institutional change rises.

The last theory to be tested is the path dependence hypothesis. What is the effect of institutional decisions made in the past? The variable that is coded “1” when the state had legislation restricting fetal and embryo research is used to look into the question. The effect of such legislation is not clear in the first model, however. The intuition behind this hypothesis is that, implicitly, surrogacy transactions are illegal through an extension of the existing law (which, for example, restricts fetal research and embryo manipulation, prohibits baby-selling or restricts artificial insemination). If there is no public consensus on whether or not to approve the new phenomenon of surrogacy, an institutional lock-in might appear, rendering the new method illegal due to the unintended consequences of past legal institutional steps.

The path dependence effect seems to appear in the second specification in which the fetal-research restriction variable is treated as an ancillary coefficient, allowing for the shape of the baseline hazard to change according to whether or not the state had the institutional restriction. States which had restrictive institutional frameworks that in unintended ways interfered with the new practice of surrogate motherhood have underlying baseline hazard functions which make the expected timespan of institutional change shorter. In other words, states with restrictive fetal-research laws faced stronger incentives to change their legal institutional structure, other things being equal.<sup>17</sup>

This effect can be demonstrated by way of a simple test. There were twenty-four states that went through legal institutional change in the period of time under analysis. Of these states, half had institutionally restricted fetal research and the other half had not. Ten states from the restrictive group went through the institutional change of surrogacy law in the 1980s, that is, in the first decade

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<sup>16</sup>The Post Baby M acceleration parameter is  $\exp(-BABYM\beta_3) = \exp(1.229\beta_3) = 3.417\beta_3$  in the first specification.

<sup>17</sup>If  $FETALRES = 0$  then  $\gamma = \exp(-0.896) = 0.408$ . Conversely, if  $FETALRES = 1$  then  $\gamma = \exp(-0.896 - 0.761) = 0.190$ . The gamma parameter determines the shape of the baseline hazard function. Initially, the baseline hazard values are higher in states with no fetal-research restrictions. This changes over time when the baseline hazard of the log-logistic function with the lower gamma takes over and generates greater baseline hazard values.

after the introduction of IVF. On the other hand, if we look into the group that had not restricted fetal research, we can see that only five states went through the legal institutional change in the 1980s; the remaining seven states changed their legal institutional framework embedding surrogacy interactions in the following decades. This is a notable difference. Over 80% of the states from the restrictive group, in contrast to about 40% of states in the non-restrictive group, went through the legal institutional change in the first decade after the introduction of the new technology. In the second specification, regardless of the effect of past legal decisions, the effects of attitudes, imitation, and accidents still hold.

Several other control variables were included in the model. First, the homogeneity of political representation seems to matter for legal institutional change. The variable was coded “1” if the party of the state governor in a given year differed from the party of the legislative majority. The coefficient is negative and significant, meaning that political homogeneity makes a difference. States where the governor comes from the political party that has a political majority in the legislative body are likely to go through the legal institutional change more quickly, other things being equal.

Going further, the effect of income per capita is negligible, meaning that there is no systematic influence of the state-level average income on whether or not a surrogacy law will be adopted. Although the effect of education is not large, its estimated effect is puzzling.<sup>18</sup> One might expect more educated populations to be more progressive. In the model, however, the acceleration parameter of advanced education is smaller than one, meaning that states with more educated populations take more time to go through the legal institutional change. This is probably because, at the state level, the measure of education captures some unobserved demographic characteristics of the respective populations. Finally, the effect of citizen ideology is negligible and statistically insignificant.

Looking over the results of the empirical analysis, it appears that there is an interplay between several factors behind the institutional change. These factors are changing beliefs, accidents, imitation, and history. States where populations approved of surrogacy were more likely to have their legal institutions adjusted than states in which the median voter disapproved. The legal change was propelled by exogenously introduced institutional crisis. In the case of surrogate motherhood, the crisis took shape of the milestone *In re Baby M* case. This accident made political action and legal intervention viable and called for. Institutional imitation also makes a difference. States whose neighbors' legal institutions had recently adapted to the new phenomenon of surrogacy were more likely to change their own legal frameworks. Finally, the empirical analysis points toward the effect of diverse historical conditions. This can best be shown by comparing states with legal institutions which were more restrictive to the new practice and states whose institutional structure was more permissive. Other things being equal, the more restrictive initial conditions created greater pressure for

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<sup>18</sup>The acceleration parameter of advanced education is  $0.857\beta_4$ .

adjustment. Demonstrating the interaction of beliefs, accidents, imitation and historical conditions, the analysis provides valuable insights for anyone interested in the theory of institutional change and in the functioning of social mechanisms through which legal institutions adapt to changing environments. Having looked into the factors influencing the legal institutional change, let's see what are the effects of different institutional arrangements on the goals and purposes of people interested in surrogacy.

### **3 Current legal framework (2003 – 2010)**

Today surrogate motherhood law in the United States may appear confused and chaotic. The feelings of uneasiness and chaos are most likely animated by a lack of designed legal infrastructure that would provide a uniform standard of conduct. There is no federal regulation applicable nationwide. Instead, every state deals with the social phenomenon of surrogacy by itself. This setting creates a real time natural experiment. American judges and legislators apply diverse rules of legal enforcement in order to reach different public policy objectives.

Regardless of these objectives, there is one simple question which potential participants to a surrogacy agreement ask: “will the surrogacy contract be enforced – that is, will the surrogate be forced to comply with its requirement that she relinquish parental rights?” (Spivack 2010, p. 102). And conversely, will the intended parents be forced to stick to the contract if they get divorced and no longer want the baby? What if they wanted a boy and the surrogate gave them a girl? What happens if parties change their minds? Because policy objectives differ across states, so do the conditions of contractual enforcement. Therefore, it is not only a matter of whether or not the surrogacy agreement will be enforced – a second important problem seems to be under what conditions will the enforcement take place. In the early 1990s the surrogacy law began recognizing the difference between traditional and gestational surrogacy. The following analysis of the current legal framework focuses above all on gestational surrogacy which became more common than traditional surrogacy due to the fact that intended parents have a chance to get a genetically related offspring.

So as to assess the effect of different conditions of contractual enforcement I follow a distinction introduced by Radhica Rao (2003) and divide the states into four categories by legal regime: statutory regulation, prohibition, inaction and case law ordering.<sup>19</sup> Statutory regulation regime provides legislation that holds surrogacy contracts conditionally enforceable. Prohibition regime voids and in some cases punishes these contracts. Case law ordering and inaction regimes do not formulate any statutory guidelines specifically related to surrogate motherhood. In the case law states, however,

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<sup>19</sup>Rao's categorization of state policy refers to the Office of Technology Assessment report *Infertility: Medical and Social Choices* (1988).



legal precedents enforcing surrogacy agreements have been established as a byproduct of litigation. In what sense do the legal regimes differ?

### 3.1 Statutory regulation

Regulated statutory enforcement of gestational surrogacy contracts is provided in ten states.<sup>20</sup> Given that there is no universally accepted standard, states differ in terms of formulating conditions upon which the surrogacy contracts are enforced. Common issues addressed in the statutes are the definition and scope of the phenomenon, establishing parent-child relationship, restrictions on compensation, consent to clinical intervention and other general conditions. In order to systematically analyze these common issues, I provide a comparison of statutes.

First, how do the statutes typify and formalize the concepts of surrogate motherhood? A surrogate is “a woman who agrees, pursuant to a surrogacy contract, to bear a child for intended parents.”<sup>21</sup> Gestational surrogacy<sup>22</sup> is induced by a surrogacy contract which is “an agreement between intended parents, a surrogate, and her husband, if any, in which the surrogate agrees to be impregnated through the use of assisted conception, to carry any resulting fetus, and to relinquish to the intended parents the custody of and parental rights to any resulting child.”<sup>23</sup>

The surrogacy contract is a direct consequence of the intended parents’ effort to conceive a child. The intended parent is defined as someone who “enters into a gestational surrogacy contract with a gestational surrogate pursuant to which he or she will be the legal parent of the resulting child.”<sup>24</sup>

States differ on how a parent-child relationship is established. In Illinois, for example, “the child shall be considered the legitimate child of the intended parent or parents for purposes of State law

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<sup>20</sup>See A.C.A. § 9-10-201, Fla. Stat. § 742.15, 750 ILCS 45/6, Nev. Rev. Stat. Ann. § 126.045, N.H. Rev. Stat. Ann. § 168-B:16, N.D. Cent. Code, § 14-18-05, Tex. Fam. Code § 160.752, VA. Code. Ann. § 20-160, Utah Code Ann. § 78B-15-801, Rev. Code Wash. (ARCW) § 26.26.210.

<sup>21</sup>See RSA 168-B:1. Similarly, in Washington and Nevada, the statutes do not distinguish traditional and gestational surrogacy; see Rev. Code Wash. (ARCW) § 26.26.210 and Nev. Rev. Stat. Ann. § 126.045. Florida statutes, on the other hand, make this distinction. According to the Florida Domestic Relations Act, gestational surrogate “means a woman who contracts to become pregnant by means of assisted reproductive technology without the use of an egg from her body” (Fla. Stat. § 742.13). North Dakota also distinguishes between gestational carriers and surrogates (N.D. Cent. Code, § 14-18-01).

<sup>22</sup>Defined as “a state that results from a process in which a commissioning couple’s eggs or sperm, or both, are mixed in vitro and the resulting preembryo is implanted within another woman’s body” (Fla. Stat. § 742.13 or similarly 750 ILCS 47/10 and RSA 168-B:1). Note that gestational surrogacy is different from traditional surrogacy. In the case of traditional surrogacy the surrogate is genetically related to the child she carries for the intended parents.

<sup>23</sup>See Va. Code Ann. § 20-156 or similarly Fla. Stat. § 742.13; 750 ILCS 47/10; Rev. Code Wash. (ARCW) § 26.26.210.

<sup>24</sup>See 750 ILCS 47/10 or Tex. Fam. Code § 160.102. In Nevada, on the other hand, intended parents are “a man and woman, married to each other, who enter into an agreement providing that they will be the parents of a child born to a surrogate through assisted conception” (Nev. Rev. Stat. Ann. § 126.045). Virginia statute also mentions that intended parents should be a married couple; see Va. Code Ann. § 20-156.

immediately upon the birth of the child.”<sup>25</sup> This is also the case in Nevada where “a person identified as an intended parent in a contract ... must be treated in law as a natural parent under all circumstances.”<sup>26</sup> Arkansas, North Dakota and Washington have similar statutes.<sup>27</sup>

In the remaining five states, the intended parents are not recognized as natural parents immediately. In these states, the parenthood is established by adjudication. The Florida statute establishing parent-child relationship specifies that “within 3 days after the birth of a child delivered of a gestational surrogate, the commissioning couple shall petition a court of competent jurisdiction for an expedited affirmation of parental status.”<sup>28</sup> The court reviews the validity of the surrogacy contract and orders that the names of the intended parents be put on the birth certificate, thus establishing the parent-child relationship. This process differs slightly in each particular state.

Except for Illinois and Utah, states that enforce surrogacy contracts restrict compensation of the surrogate. The Illinois Gestational Surrogacy Act states that “a gestational surrogacy contract shall be presumed enforceable for purposes of State law even though it contains ... the agreement of the intended parent or parents to pay the gestational surrogate reasonable compensation.”<sup>29</sup> In the remaining states “the commissioning couple may agree to pay only reasonable living, legal, medical, psychological, and psychiatric expenses of the gestational surrogate that are directly related to prenatal, intrapartal, and postpartal periods.”<sup>30</sup> In Arkansas, Texas and North Dakota, the statutes are not explicit on the issue of compensation.

Apart from the price cap, some states restrict third-party payments. In New Hampshire “no person or entity shall promote or in any other way solicit or induce for a fee, commission or other valuable consideration, or with the intent or expectation of receiving the same, any party or parties to enter into a surrogacy arrangement.”<sup>31</sup>

If the question of which party has a final say in case of clinical intervention is addressed, the statutes usually favor the surrogate, thus granting her full sovereignty over her body.<sup>32</sup> The Illinois

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<sup>25</sup>See 750 ILCS 47/15.

<sup>26</sup>See Nev. Rev. Stat. Ann. § 126.045.

<sup>27</sup>See A.C.A. § 9-10-201, N.D. Cent. Code, § 14-18-08, Rev. Code Wash. (ARCW) § 26.26.101.

<sup>28</sup>See Fla. Stat. § 742.16 and similarly RSA 168-B:23, Tex. Fam. Code § 160.753, Utah Code Ann. § 78B-15-807 and Va. Code Ann. § 20-160.

<sup>29</sup>See 750 ILCS 47/25. Compensation “means payment of any valuable consideration for services in excess of reasonable medical and ancillary costs” (750 ILCS 47/10). According to Utah Uniform Parentage Act “a tribunal may issue an order validating the gestational agreement ... only finding that ... the consideration, if any, paid to the prospective gestational mother is reasonable (Utah Code Ann. § 78B-15-803).

<sup>30</sup>See Fla. Stat. § 742.15. Similar conditions are included in RSA 168-B:25, Nev. Rev. Stat. Ann. § 126.045, Va. Code Ann. § 20-160 and Rev. Code Wash. (ARCW) § 26.26.210.

<sup>31</sup>See RSA 168-B:16. “Any person or entity who violates [the above mentioned condition] shall be guilty of a misdemeanor” (RSA 168-B:30, or similarly Rev. Code Wash. [ARCW] § 26.26.230). Virginia also restricts third-party payments but further specifies that such a provision “shall not apply to the services of an attorney in giving legal advice or in preparing a surrogacy contract” (Va. Code Ann. § 20-165).

<sup>32</sup>According to the Florida statute “the commissioning couple agrees that the gestational surrogate shall be the sole source

statute, on the other hand, is more liberal in letting the parties specify contract clauses that require the surrogate to “undergo all medical exams, treatments, and fetal monitoring procedures that the physician recommended for the success of the pregnancy.”<sup>33</sup>

States that enforce surrogacy contracts also set up a range of general conditions in order to shape the character of the contracts. Commonly, the surrogate and the intended parents must not be younger than 21 years and the surrogate mother must have given birth to at least one child prior to the surrogacy agreement.<sup>34</sup> The surrogate must provide evidence that bearing another child will not pose unreasonable risk to her or to the resulting child.<sup>35</sup> Further, the medical evidence provided must show that “the intended mother is unable to carry a pregnancy to term and give birth to the child or is unable to carry the pregnancy to term and give birth to the child without unreasonable risk to her physical or mental health or to the health of the unborn child.”<sup>36</sup> In some states, parties to surrogacy agreement must satisfy the residency requirement.<sup>37</sup>

In New Hampshire, Texas, Utah and Virginia nonmedical evaluations and home studies are required so as to validate the surrogacy agreement.<sup>38</sup> In Texas, for example, evidence must be provided that “an agency or other person has conducted a home study of the intended parents and has determined that the intended parents meet the standards of fitness applicable to adoptive parents.”<sup>39</sup> Unless the agreements are judicially validated they are unenforceable and the intended parents must establish a parent-child relationship through a probate court, provided the surrogate still wishes to relinquish her parental rights.

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of consent with respect to clinical intervention and management of the pregnancy” (Fla. Stat. § 742.15). Similarly in a New Hampshire surrogacy contract “there shall be no specific performance for a breach by the surrogate of a surrogacy contract term that: requires her to become impregnated; requires her to have an abortion; or forbids her to have an abortion” (RSA 168-B:27). In Utah “a gestational agreement may not limit the right of the gestational mother to make decisions to safeguard her health or that of the embryo or fetus” (Utah Code Ann. § 78B-15-808). In Virginia “the surrogate shall be solely responsible for the clinical management of the pregnancy” (Va. Code Ann. § 20-163).

<sup>33</sup>See 750 ILCS 47/25.

<sup>34</sup>Florida requires the parties to be only 18 years of age; see Fla. Stat. § 742.15.

<sup>35</sup>See 750 ILCS 47/20, RSA 168-B:17, Tex. Fam. Code § 160.756, Utah Code Ann. § 78B-15-803, Va. Code Ann. § 20-160.

<sup>36</sup>See Tex. Fam. Code § 160.756 or similarly Fla. Stat. § 742.15, 750 ILCS 47/20, RSA 168-B:17, Utah Code Ann. § 78B-15-803, Va. Code Ann. § 20-160.

<sup>37</sup>In Texas and Utah the parties must reside in the state 90 days prior to the date the proceeding is commenced; see Tex. Fam. Code § 160.755 and Utah Code Ann. § 78B-15-803.

<sup>38</sup>A nonmedical evaluation shall be performed on each party by a psychiatrist, psychologist, pastoral counselor or social worker, who is licensed, certified, or authorized to practice under the laws and rules of the state of New Hampshire, who shall maintain a record of the findings and conclusions and [who] shall determine the party’s suitability to parent by considering: (a) The ability and disposition of the person being evaluated to give a child love, affection and guidance. (b) The ability of the person to adjust to and assume the inherent risks of the contract. . . . A home study of each party involved shall be conducted by a licensed child placing agency or the department of health and human services to assess the ability and disposition of the person to provide the child with food, clothing, shelter, medical care and other basic necessities” (RSA 168-B:18).

<sup>39</sup>See Tex. Fam. Code § 160.756.

### 3.2 Statutory prohibition

“A few jurisdictions flatly prohibit all surrogacy ... though it is unclear whether a blanket prohibition that is unaccompanied by civil sanction or criminal penalties differs in any significant respect from the mere refusal by the state to enforce surrogacy contracts” (Rao 2003). For the purposes of my analysis they are not considered different. Whenever a state refuses to enforce a surrogacy agreement by declaring it void or unenforceable, a signal is provided which is identical to the signal provided by sanctioned or unsanctioned prohibition. As long as the surrogacy agreements will not be enforced in case one of the party reneges, the increased uncertainty raises the expected costs of the contracting parties. Eight states provide statutes that declare surrogacy contracts void or prohibited.<sup>40</sup> The District of Columbia statute holds that “[a]ny person or entity who or which is involved in, or induces, arranges, or otherwise assists in the formation of a surrogate parenting contract for a fee, compensation, or other remuneration ... shall be subject to a civil penalty not to exceed \$ 10,000 or imprisonment for not more than 1 year, or both.”<sup>41</sup> It is worth pointing out that it is the formation of surrogacy contracts that is prohibited, not the act of surrogacy itself. This is because of an implicit constitutional right to privacy which protects, among other things, the right to procreate.<sup>42</sup>

### 3.3 States with no surrogacy statutes

The group of states with no surrogacy statutes is the most populated one. Most states refuse to construct statutory framework that would anchor the surrogacy contracts. This is not due to ignorance, however. The California Governor’s veto from 1992 notes that “[t]he full moral and psychological dimensions of this practice are not yet clear. In fact, they are just beginning to emerge. ... Comprehensive regulation of this difficult moral issue is premature.”<sup>43</sup> Similarly, in a 2007 Minnesota Court of Appeals opinion, Judge Willis explained that “we neither condemn nor condone gestational surrogacy. That is not our function. But a child has been born in this state as the result of the procedure,

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<sup>40</sup>See A.R.S. § 25-218, D.C. Code § 16-402, Burns Ind. Code Ann. § 31-20-1-1, KRS § 199.500, La. R.S.9:2713, MCL § 722.855, R.R.S. Neb. §25-21,200., NY CLS Dom Rel § 122.

<sup>41</sup>See D.C. Code § 16-402. In Michigan, participating in the formation of a surrogacy contract is classified as a felony punishable “by a fine of not more than \$50,000.00 or imprisonment for not more than 5 years, or both” (MCL § 722.857). In New York the civil penalty is “not to exceed ten thousand dollars and forfeiture to the state of any such fee, compensation or remuneration ... for the first such offense. Any person or entity who or which induces, arranges or otherwise assists in the formation of a surrogate parenting contract for a fee, compensation or other remuneration, ... after having been once subject to a civil penalty for violating this section, shall be guilty of a felony” (NY CLS Dom Rel § 123).

<sup>42</sup>See *Skinner v. Oklahoma* (316 U.S. 535 [1942]). The case establishes the right to procreate as a fundamental civil right. The opinion stated that “Oklahoma deprives certain individuals of a right which is basic to the perpetuation of a race – the right to have offspring. Oklahoma has decreed the enforcement of its law against petitioner, overruling his claim that it violated the Fourteenth Amendment. Because that decision raised grave and substantial constitutional questions, we granted the petition for certiorari.”

<sup>43</sup>Quoted in *Johnson v. Calvert* (5 Cal. 4th 84 [1993]).

and the judiciary has been asked to determine the child's parentage and custody. That is our function."<sup>44</sup> Judges and legislators of states with no surrogacy statutes observe the new social phenomenon refusing to intervene due to their recognized lack of knowledge.

This third group of states, however, can be further broken down because not all judges have been unwilling to hold the surrogacy agreements enforceable. Six states in particular, California, Connecticut, Idaho, Massachusetts, New Jersey and Ohio should be taken out of the group with no surrogacy statutes because in these states, precedents of enforcing gestational surrogacy contracts have been established through litigation. In my analysis, the group of states with no clear contractual enforcement statutes or precedents will be referred to as the inaction group. The group of the six states where legal precedents enforcing surrogacy agreements have developed is the case law ordering group.

### **3.4 Case law ordering**

The cases that established a precedent of enforcing surrogacy agreements under jurisdictions of particular states have one thing in common – all of the decisions signal that unless the surrogacy agreement is unconscionable or unless one of the parties enters into the agreement under conditions of duress it will be recognized as legal. Let's review some of the most important cases so as to see how the case law ordering developed.

On January 15, 1990, a California "childless married couple and another woman entered into a contract providing that an embryo created by the gametes of the couple would be implanted in the woman's uterus, that the child born would be the couple's child, and that the surrogate mother would relinquish all parental rights to the child, in return for which the couple would pay the surrogate a specified fee and buy her a life insurance policy."<sup>45</sup> The relationship between the intended parents and the surrogate deteriorated and the surrogate mother, Anna Johnson, threatened not to relinquish the child. The intended parents, Mark and Crispina Calvert, responded with a lawsuit in order to be declared legal parents of the unborn child. At the trial the California court ruled that the couple "were the child's genetic, biological, and natural father and mother, that the surrogate had no parental rights to the child, and that the contract was legal and enforceable against the surrogate's claims."<sup>46</sup> Johnson v. Calvert became a landmark for surrogacy lawsuits, establishing a precedent that has been followed in a number of subsequent cases without being superseded.<sup>47</sup>

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<sup>44</sup>See P.G.M. v. J.M.A. (A07-452 [2007] Minn. App. Unpub).

<sup>45</sup>See Johnson v. Calvert; 5 Cal. 4th 84 [1993].

<sup>46</sup>Ibid.

<sup>47</sup>Another important case from California was Buzzanca v. Buzzanca (61 Cal. App. 4th 1410 [1998]). In this case the court of appeal enforced the surrogacy contract, ordering that the commissioning couple were lawful parents of a child born to a surrogate given their initiating role as the intended parents in the conception and birth even though neither party was

In Connecticut, the case law is favorable towards surrogacy agreements even for same sex couples. At least since 2002, The Superior Court of Connecticut has been issuing pre-birth orders affirming the enforceability of gestational carrier agreements and recognizing intended parents as natural parents immediately after the birth.<sup>48</sup> In various other cases the Superior Court of Connecticut continued enforcing gestational carrier agreements. In *De Bernardo v. Gregory*,<sup>49</sup> “[t]he intended parents were declared and adjudged the biological and legal parents of the unborn baby. The gestational contract was found to be valid, enforceable, irrevocable, and of full legal effect.” In *Cassidy v. Williams*,<sup>50</sup> the “[p]laintiff biological fathers sued defendants surrogate mother, hospital, health department, and others, alleging that, pursuant to a gestational carrier agreement with the biological fathers, the surrogate mother was carrying the children of the biological fathers, and that they were entitled to, among other things, paternal rights. . . . The court found that the gestational carrier agreement was valid, enforceable, irrevocable, and of full legal effect. The surrogate mother was declared not to be the mother of the unborn children. The department of public health was ordered to create a replacement birth certificate for the children.”<sup>51</sup>

In *Culliton v. Beth Israel Deaconess Medical Center*,<sup>52</sup> “two parents contributed spermatozoons and ova for implantation, after fertilization, in a gestational carrier. Before the twins were born, all three parties sought a court order directing that the genetic parents be identified as the babies’ legal parents in the birth certificate information supplied by the hospital.” Trial court denied the relief and sought the high court resolution. The high court “vacated the judgment of dismissal, dissolved a temporary injunction against reporting the twins’ birth information, and entered judgment declaring the genetic parents to be the children’s parents. It also ordered the hospital to supply all necessary information to appropriate governmental authorities.”<sup>53</sup> By dissolving the injunction the high court of Massachusetts recognized the surrogacy agreement was enforceable.<sup>54</sup>

In the case of *DeBernardi v. Steve B.D.*,<sup>55</sup> the Supreme Court of Idaho held that “in the absence of fraud, duress, or undue influence, consents to adoption become final and irrevocable upon execution of the consent to adoption by the natural parents, and delivery and surrender of the child to biologically related to the child.

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<sup>48</sup>See for example *Vogel v. Kirkbride* (2002 Conn. Super. LEXIS 4261), *Friend v. Lugo* (2002 Conn. Super. LEXIS 4262), *Hatzoupoulos v. Murray* (2002 Conn. Super. LEXIS 4263), *Velardo v. Murray* (2004 Conn. Super. LEXIS 3913), *DiComo v. Hopkins* (2005 Conn. Super. LEXIS 3714), *Caird v. Lugo* (2006 Conn. Super. LEXIS 3930), *Caliendo v. Mariano* (2007 Conn. Super. LEXIS 3345) or *Goad v. Arel* (2007 Conn. Super. LEXIS 3347).

<sup>49</sup>2007 Conn. Super. LEXIS 3078.

<sup>50</sup>2008 Conn. Super. LEXIS 1727.

<sup>51</sup>See also *Raftopol v. Ramey* (299 Conn. 681[2011]).

<sup>52</sup>435 Mass. 285 (2001).

<sup>53</sup>*Ibid.*

<sup>54</sup>See also *Hodas v. Morin* (2004 Mass. LEXIS 510).

<sup>55</sup>111 Idaho 285 (1986).

the adoptive parents.” According to the opinion of Justice Shepard “a written contract was executed between DeBernardi and Mr. and Mrs. D. in which DeBernardi agreed to give up her as yet unborn child for adoption, and Mr. and Mrs. D. agreed to adopt the child when born. . . . The contract provided for the payment of costs of artificial insemination, and was generally in the format of a surrogate mother contract. Evidently that format was utilized because the contract provided that the prospective adoptive parents could not refuse to accept the child if it were born with a defect or if there were multiple births.” After the appellant birth mother revoked her consent to the adoption of the child, the District Court enforced the contract against her. This case established a ground for the enforceability of surrogate motherhood contracts in Idaho.

In *A. H. W. v G. H. B.*,<sup>56</sup> “petitioner biological parents of unborn child and surrogate gestational carrier sought pre-birth order compelling respondent attorney general of New Jersey to permit petitioner biological parents to be listed as the baby’s legal parents on the birth certificate.” The carrier who accepted no money in exchange was a sister of the biological mother. The Superior Court of New Jersey held that “a surrogacy agreement was legal so long as no payment was involved.” The Superior Court of New Jersey thus recognized surrogacy contracts enforceable as long as they are uncompensated.

In *Belsito v. Clark*,<sup>57</sup> “[t]he parents requested that the court declare that it was unnecessary for the parents to adopt the child being carried by the surrogate, who was the mother’s sister. The parents urged that they were the genetic and natural parents of the child and that they were entitled to the legal status of parents. . . . The court held that when a child was delivered by a gestational surrogate who had been impregnated through the process of in vitro fertilization, the natural parents of the child were the individuals who provided the genetic imprint for that child. If the individuals who were identified as the genetic parents did not relinquish or waive their rights to assume the legal status of natural parents, the genetic parents were to be considered the natural and legal parents of that child.” The Court of Common Pleas in Ohio thus set a precedent for the enforcement of surrogate contracts. That the surrogate motherhood contracts are enforceable and not against public policy was confirmed again in *J.F. v. D.B.*<sup>58</sup>

## **4 Economic analysis of contractual enforcement**

More than 15 year ago, Richard Epstein (1995) made a case for full contractual enforcement of the surrogate motherhood contracts. Epstein focused mainly on the analysis of traditional surrogate

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<sup>56</sup>339 N.J. Super. 495 (2000).

<sup>57</sup>67 Ohio Misc. 2d 54 (1994).

<sup>58</sup>116 Ohio St. 3d 363 (2007).

motherhood as opposed to gestational surrogacy. He noted that “precisely because surrogacy contracts are not contracts for commodities, we need a legal regime where surrogacy contracts will be enforced come hell or high water. Once the legal regime is unmistakably clear, then any woman with doubts about her psychological willingness to part with her child will steer away from it. ... Without the firm contract, greater reliance would be placed on psychological testing, thus adding expense to the process. ... Small risks are often difficult to calculate, and the resultant uncertainty can undermine the fragile resolve to enter into such a transaction” (p. 2339). The idea is clear. Contractual enforcement results in lower transaction costs and provides for sorting of suitable candidates based on personal knowledge of their individual conditions.

From a certain perspective, however, the situation appears different in the case of gestational surrogacy where the surrogate is not genetically related to the fetus she carries. “Custody fights ... are avoided when the transaction is a true womb-rental situation. ... These transactions require the surrogate to undergo extensive drug treatment to produce a suitable yield of harvestable eggs, and clearly demand a level of technical medical sophistication not required in simple surrogacy transactions. But they do avoid the problem of enforcement when the wife gives birth to the surrogate’s child. It is an open question whether these transactions have a future in an unregulated market” (p. 2340).<sup>59</sup>

I pick up this question and build an empirical model so as to look into the effects of legal enforcement on the number of “womb-rental situations”. The goal is to test the hypothesis that there is no systematic difference in the volume of gestational surrogacies across the four legal categories summarized in Table 4. If this was true, the formal contractual enforcement would be redundant, perhaps, due to the fact that gestational surrogacy agreements are self-enforceable. This would imply, as Epstein hypothesized, that these transactions indeed have a future in an unregulated market. We can reasonably expect, however, that people do consider their expected costs even in the case of gestational surrogacy and that formal contractual enforcement does reduce these costs. If contractual enforcement indeed reduces transaction costs, we should observe more interactions between intended parents and gestational carriers in the states that legally enforce surrogate motherhood contracts compared to those states that do not enforce these contracts or relative to states that ban them.

## 4.1 Data

Surrogate motherhood contracts have not been systematically monitored. The best proxy for explaining the variation in these contracts is the number of pregnancies induced by the agreements of the contracting parties. Surrogacy pregnancies have been monitored by the Society for Assisted Repro-

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<sup>59</sup>Epstein seems to assume that the contracts might be self-enforceable as the gestational surrogate has no reason to keep the baby. This assumption puts emphasis on the doctrine of establishing parenthood purely by means of a genetic link. For a discussion of competing doctrines see Spivack (2010, 101–109).



Table 4: States by contractual enforcement of the gestational surrogate motherhood contracts in 2003 - 2010.

Contracts enforceable		Contracts unenforceable	
Statutory regulation	Case law ordering	Inaction	Prohibition
Arkansas	California	Alabama	Arizona
Florida	Connecticut	Colorado	District of Columbia
Illinois	Idaho	Delaware	Indiana
New Hampshire	Massachusetts	Georgia	Kentucky
Nevada	New Jersey	Iowa	Louisiana
North Dakota	Ohio	Kansas	Michigan
Texas		Maine	Nebraska
Utah		Maryland	New York
Virginia		Minnesota	
Washington		Mississippi	
		Missouri	
		Montana	
		New Mexico	
		North Carolina	
		Oklahoma	
		Oregon	
		Pennsylvania	
		Rhode Island	
		South Carolina	
		South Dakota	
		Tennessee	
		Vermont	
		West Virginia	
		Wisconsin	
		Wyoming	

\* North Dakota and Utah enforce surrogacy agreements since the year 2005.

ductive Technologies (SART) since 2003.<sup>60</sup>

The surrogate-motherhood pregnancy is a result of assisted reproduction. Fertilization by means of assisted reproduction technology (ART) proceeds in cycles. During the cycle, in vitro fertilization (IVF) and embryo transfer (ET) take place. According to Federal Law, every ART cycle performed should be reported. “Indeed, in 1992 Congress passed the Fertility Clinic Success Rate and Certificate Act ... which requires clinics to collect and make public the results of ART treatments.”<sup>61</sup>

The results of ART treatments are monitored by Centers for Disease Control and Prevention (CDC). According to the Federal Law there should be no ART providers that do not report to the CDC. The SART dataset used in this study covers about 80% of clinics that report to the CDC. If I can assume that during the period of 2003-2010 there were no clinics providing ART services apart from those reporting to the CDC, then my dataset includes data from approximately 80% of all US clinics providing ART services.

SART provides figures on different phases of the assisted reproduction. From these phases it is the number of pregnancies which seems to best follow the number of agreements between the contractual parties. This is because not all ART cycles end up in pregnancies – one woman can go through many cycles in the course of one year and in the course of one contract before getting pregnant. Furthermore, not all pregnancies lead to births and more than one child might result from a birth. Therefore, the number of cycles is inflated and the number of births is too conservative for the purposes of estimating the number of surrogate motherhood contracts.

My dataset shows the number of surrogacy pregnancies per year in the period from 2003 to 2010 broken down by states. So as to control for economic, demographic and social factors, I use data on GDP per capita (U. S. Department of Commerce 2003-10), unemployment (Bureau of Labour Statistics 2003-2010), population (U. S. Census Bureau 2004-2010) and the stated importance of religion (Gallup 2009) by states and years. These data are described in Table 5.

The purpose of my analysis is not, however, to account for all the factors affecting the volume of gestational surrogacy agreements that were carried through every year. The purpose of the present analysis is to look for relationships between different regimes of contractual enforcement and quantities of surrogate motherhood contracts. In order to look into these relationships I provide a comparative institutional analysis.

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<sup>60</sup>SART collects statistics on IVF – of which gestational surrogacy is a subset – from clinics across the country. The Association describes itself as the primary organization of professionals dedicated to the practice of assisted reproductive technologies (ART) in the United States.

<sup>61</sup>Society for Assisted Reproductive technology. Who is to report ART cycles. Available at <http://www.sart.org/detail.aspx?id=1911> (accessed May 2014).

Table 5: Describing variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Total ART cycles	357	2735.38	(3971.72)	37	23526
Total surrogacy cycles	357	15.17	(28.23)	0	238
Total surrogacy pregnancies	357	6.59	(11.91)	0	97
Total surrogacy births	357	5.11	(8.95)	0	71
Gdp (\$ per capita)	357	43354.45	(16928.14)	27591	152167
Unemployment	357	5.97	(2.18)	2.7	14.9
Importance of religion (%)	357	64.83	(9.57)	42	85
State population (million)	357	6.54	(6.76)	0.58	37.34
Population of women (15-44)	357	1.35	(1.44)	0.12	8.04
Surrogate pregnancy rate	357	4.35	(5.10)	0	28.18

## 4.2 Comparative institutional analysis

Using the collected data and the legal categorization I specify an ordinary least squares model.

$$\frac{y_{s,t}}{P_{s,t}} = \beta_0 + \beta_1 t' + \beta_2 t' T + \beta_3 x' + \varepsilon$$

In this model  $y_{s,t}$  is the number of surrogate-motherhood pregnancies in state  $s$  during year  $t$ .  $P_{s,t}$  is the projected population of women aged 15-44 living in state  $s$  during year  $t$  indicated in millions (U. S. Census Bureau 2004-2010).<sup>62</sup> In demographical studies, local birth rate is usually defined as a fraction of live births per 1,000 estimated population of this sex and age category in each area. Analogously, I use this fraction of the number of surrogate motherhood pregnancies and the estimated population in millions to derive surrogate motherhood pregnancy rate  $\frac{y_{s,t}}{P_{s,t}}$ , which is my dependent variable.<sup>63</sup> On the right hand side of the equation there is a  $t'$  vector of dummy variables assigning the contractual enforcement regime to each state and a time trend  $T$ . The interaction of the dummy vector and the time trend allows for different slopes according to different legal types. The last variable  $x'$  is a vector of the control variables described above. The coefficient  $\beta_0$  is an intercept,  $\beta_1$  is a vector of

<sup>62</sup>The projection of 2003 was extrapolated from the 2004 and 2005 projections.

<sup>63</sup> $P_{s,t}$  is used to control for the size of states so as to derive a dependent variable that is comparable across  $s$ . I experimented with different measures of  $P_{s,t}$  so as to get the most reliable number. Alternatively, I scaled the number of pregnancies with total population in a given state  $P'_{s,t}$  (U.S. Census Bureau, Population Division 2009, 2011) and with total births in a given state  $P''_{s,t}$  (U.S. Census Bureau 2012). All the above mentioned measures are highly correlated ( $\rho = 99.82\%$  and  $\rho = 99.25\%$ ) and yield similar results.

intercepts by state type,  $\beta_2$  is a vector of coefficients showing the time trends by state category and  $\beta_3$  is a vector of the control variables' coefficients. Finally,  $\varepsilon$  is a residual. In my analysis I use various specifications of this model.

$$(1) y_{s,t} = \beta_0 + \beta_2 T + \varepsilon$$

$$(2) y_{s,t} = \beta_0 + \beta_1 t' + \beta_2 T + \varepsilon$$

$$(3) y_{s,t} = \beta_0 + \beta_1 t' + \beta_2 t' T + \varepsilon$$

$$(4) y_{s,t} = \beta_0 + \beta_1 t' + \beta_2 t' T + \beta_3 x' + \varepsilon$$

The first specification accounts only for the time trend of all the surrogate pregnancies regardless of legal setting. This is not the case in the second specification. Here the time trend remains constant throughout different legal types, but the intercepts are allowed to change. In the third specification I allow even for the slopes to change across legal types. Finally, in the full model I include the control variables. All the least squares estimates are obtained from robust regression analysis with the standard errors adjusted for clusters in states.<sup>64</sup>

The dataset I analyze is an unbalanced panel. Some of the clinics have not been reporting their numbers throughout the whole period of 2003 to 2010. Also there are some states with no SART clinics during some years. For this reason states such as Arkansas, Maine, Montana and Wyoming are missing from the sample. Delaware only appears since 2006.

### 4.3 Results

Results of the data analysis are summarized in Table 6. The first specification shows a highly statistically significant positive time trend within the analyzed period. In the second specification, I allow for the intercepts to vary across legal types. We can see that the case law states which are represented by the constant have the highest intercept. States where surrogacy is prohibited show the lowest intercept and states with no statutes or clear judicial precedents have a slightly lower outcome than the states that provide regulated statutory enforcement of the surrogate motherhood contracts. The coefficients are highly statistically significant. By allowing the intercepts and slopes to vary across legal types, the goodness of fit multiplied almost twenty-fold as compared to the first specification accounting only for the time trend.

The third specification introduces different slopes across the legal types. Results are shown in Figure 3. All the slopes are positive and, in cases of regulated statutory enforcement and case law ordering, statistically significant. Case law ordering states show the highest growth rate of the outcome

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<sup>64</sup>It is the case that the fraction of the CDC reporting clinics that are SART members varies slightly through legal categories. This heterogeneity is not dramatic, however. The percentages of the CDC clinics covered by the SART are as follows: 80% in the statutory regulation category, 83% in the case law ordering category, 77% in the inaction category and 84% in the prohibition category (Centers for Disease Control and Prevention 2003-2010).

Table 6: Results

Specification	[1]	[2]	[3]	[4]
Surrogate motherhood pregnancy rate				
<i>Intercept</i>	2.855*** (0.613)	10.156*** (1.828)	8.318*** (1.672)	9.547*** (3.154)
<i>Regulation</i>		-7.039*** (2.074)	-5.516** (2.163)	-5.308** (2.216)
<i>Inaction</i>		-8.450*** (1.947)	-6.164*** (1.817)	-5.352** (2.014)
<i>Prohibition</i>		-9.527*** (1.864)	-7.262*** (1.895)	-6.947*** (2.140)
<i>Time(T)</i>	0.330*** (0.094)	0.319*** (0.093)	0.728*** (0.179)	0.785*** (0.176)
<i>T * Regulation</i>			-0.341 (0.240)	-0.331 (0.232)
<i>T * Inaction</i>			-0.507** (0.220)	-0.529** (0.211)
<i>T * Prohibition</i>			-0.507 (0.315)	-0.545 (0.299)
<i>GDP</i>				0.000** (0.000)
<i>Unemployment</i>				-0.115 (0.149)
<i>Religion</i>				-0.048 (0.045)
<i>Obs</i>	357	357	357	357
<i>R<sup>2</sup></i>	0.0220	0.3593	0.3654	0.3982

Robust standard errors in parenthesis, clustered by state. Statistical significance indicated at 10% (\*), 5% (\*\*) and 1% (\*\*\*) levels.

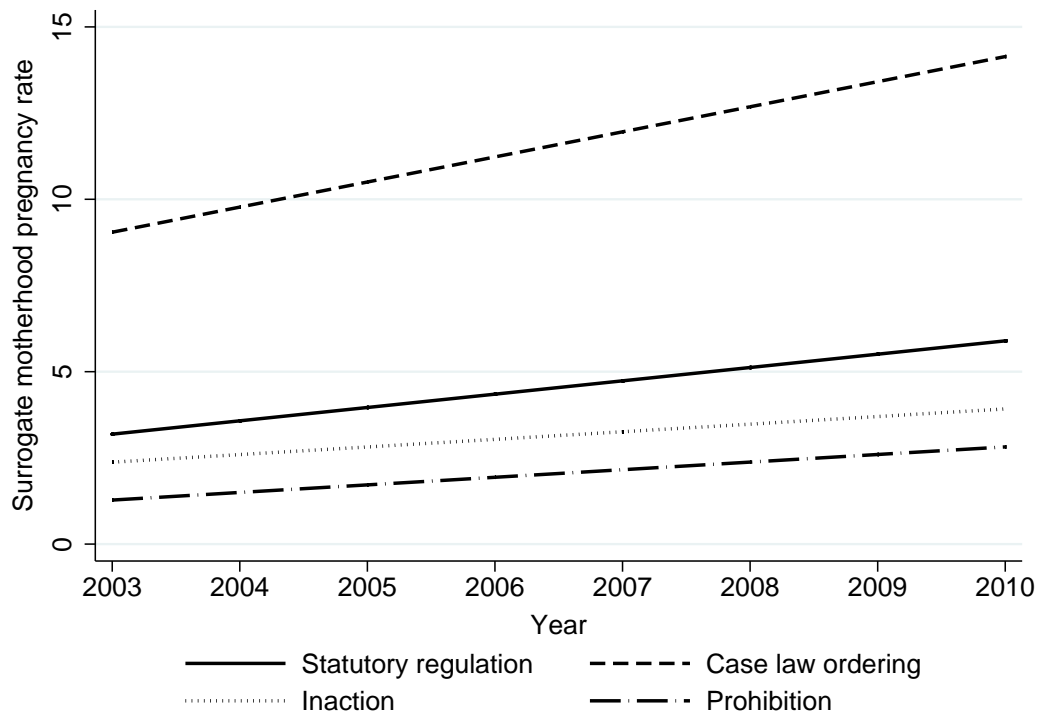


Figure 4: Results

variable. The standard errors of the intercepts do not change much after introducing the interaction of the time trend with the legal regimes dummy variable. The proportions of intercepts and slopes stay the same. The regulated statutory enforcement group now shows a slightly higher intercept and slope than the inaction group.

With the last specification, I introduce the full model controlling for wealth, unemployment and religiousness across states. I estimate the model by obtaining robust standard errors clustering the states. From the results we can see that these estimations provide the same insight into the data that appeared in the previous specifications. The case law states have the highest intercept and the steepest slope. The prohibition states, on the other hand, show the lowest outcome. Statutory regulation and inaction states float in between. The intercepts of statutory regulation and inaction groups are almost identical; the inaction interaction coefficient is a little bit lower, however. Based on the F-test I cannot reject the hypothesis that the intercepts and slopes of the statutory regulation, inaction and prohibition groups are the same. The proportions of these three fitted lines are not reliable as the 95% confidence intervals of these groups are to a large extent overlapping.

Controlling for additional variables by itself provides some insights. The GDP seems to have no

effect as the point estimates are zero and the standard errors are minimal. It does not seem that states which have a higher income per capita would experience more surrogacies. We might also expect that the unemployment coefficient would be positive due to the fact that in economically distressed states, where the unemployment is high, surrogates do not have as many choices as they would like and thus are forced to rent their wombs. I have experimented with models including both total unemployment and unemployment of women and neither of these models confirmed this theory. It is worth noting, however, that the unemployment coefficient is not statistically significant. Neither is the coefficient controlling for religious characteristics of the states.

At this point we can partially reject the null hypothesis. There is a difference between the outcomes of different legal categories. This is the main finding of my comparative analysis. In the period 2003-2010 the case law states show systematically higher levels of surrogacy agreements than states belonging to other legal categories. I cannot, however, reject the null hypothesis among the states that belong to the regulated statutory enforcement, prohibition and inaction legal categories. On average, the pregnancy rates in these states do not differ.

## **Conclusion**

In the case of surrogate motherhood, shared beliefs determined the boundaries of institutional adaptation. Consequently, states with different institutional arrangements generated different outcomes in terms of surrogate motherhood pregnancy rates. The institutional change of surrogate motherhood law resulted from an interplay of several factors. Around the time in vitro fertilization was first successfully applied, in 1978, agencies started matching infertile couples with surrogate mothers. In the years to come, states in which the median voter would come to approve of surrogate motherhood were more likely to see their institutional legal framework adjusted than states in which the population was indifferent or opposed. The development of shared beliefs played an important role in determining the legal institutional change.

Together with the changing approval of the innovative practice, accidents, imitation and historical conditions are shown to effect the probability of institutional change. After the 1987 Baby M trial, the probability of institutional change was higher for the states that had not already gone through the legal institutional change. Clearly, the institutional crisis invited legislative action. The effect of institutional imitation is also shown to play a role. The likelihood of legal institutional change is higher in those states whose neighbors had gone through the change during the preceding three years. Finally, over 80% of the states which had legally restricted fetal research went through the institutional change in the first decade after the introduction of the new assisted reproductive technology, in contrast to about 40% of the states which had no such legal restriction. This suggests that there is an effect of

past legal institutional decisions on future institutional changes. The effect of political structure also influenced the probability of change. When the party of the governor was the same as the party which possessed the legislative majority, institutional change was more likely.

According to economic theory, contractual enforcement reduces uncertainty and provides for sorting of suitable candidates for surrogacy. Expected costs of surrogacy should therefore be higher in states which hold surrogate motherhood contracts unenforceable. It has been argued, on the other hand, that incentives to renege from a surrogacy agreement in which the gestational surrogate is not genetically related to the baby she carries are weak and the contracts might be generally self-enforceable. If this was the case, there should be no difference in the volumes of gestational surrogacy agreements across different regimes of contractual enforcement.

The evidence suggests that a considerable part of all surrogacy contracts that took place in the studied period may have been incentive compatible. This is because even in states where surrogate motherhood contracts were unenforceable or illegal a considerable number of surrogate pregnancies was reported. People interested in surrogacy may in fact be better off without institutional legal rules formally enforcing surrogate motherhood. This is because the formal legal enforcement often comes with regulatory strings attached. Because surrogate motherhood contracts as such have not been monitored, there is no way of telling if the reported surrogate pregnancies in fact lead to successful transactions. Assuming the rate of default to be homogeneous across all institutional legal arrangements, it appears that the statutory enforcement of surrogate motherhood contracts does not make a big difference in terms of reducing transaction costs when compared to no enforcement or even to prohibition. What does make a difference in terms of reducing transaction costs is the enforcement of surrogate motherhood contracts by judicial precedent.

There is a difference in the number of gestational surrogacy agreements between the categories of regulated statutory enforcement and case law ordering. The statutory “permission” may in fact be close to a prohibition because of the regulatory strings attached to statutes which enforce surrogate motherhood contracts. The main finding of the comparative institutional analysis is that in the period of 2003 to 2010 the case law ordering states showed systematically higher levels of surrogacy agreements compared to states which belong to other legal categories. This result is interesting because it shows that it is the case law ordering which provides the best conditions for mutual coordination of people interested in surrogate motherhood.

The empirical findings open the doors for further research. Why is the number of surrogacy agreements not lower in the areas which do not provide contractual enforcement? Why is the uncertainty not lower in the states which do not enforce or ban surrogacy agreements compared to states which enforce these agreements by statute? It seems that middlemen who coordinated surrogate mothers with intended parents were able to come up with methods that ensure the enforcement of surrogate



motherhood contracts even without formal institutional framework. Second, what is the effect of price restriction on surrogacy arrangements? A vast majority of the states that regulate surrogacy impose some kind of a price ceiling. Is it possible that the motivation behind fixing the price below market level by a single regulatory body in fact aims at securing rents?

A lot has changed since the 1960s when Gary Becker pondered the self-sufficiency of families in producing offspring. With my study of institutional change I hope to have contributed to our understanding of how it happened that today, thanks to technological and institutional changes, many families do not need to rely on their self-sufficiency in procreation. Today these families have the opportunity of using the market mechanism to cope with their problems of infertility.

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