Figure A1: Proportion of all births and abortions by age in Mexico DF

Notes: Plots display the proportion of all births in each age group (histogram) and the proportion of all abortions in each age group (dashed line). Proportions sum to 1 in each case. The proportion of all births occurring in each age group are generated from administrative data provided by INEGI. The proportion of all abortions occurring in each age group are compiled from summary data released by the Ministry of Health of Mexico DF. Referenced on page [6].
Table A1: Changes in Penal Codes Surrounding Abortion Laws in Mexico

| State            | Pre-Reform Sanction       | Post-Reform Sanction       | Additional Changes                                                                 |
|------------------|---------------------------|----------------------------|-----------------------------------------------------------------------------------|
| Chiapas          | 1-3 years prison          | 1 to 3 years prison        | Added detail to the penal code, increased sentences for “collaborators”            |
| Chihuahua        | 3 months to 5 years prison| 6 months to 3 years prison | Added detail to the penal code, increased sentences for “collaborators”            |
| Colima           | 1-3 years prison and fine | 1-3 years prison and fine  | No changes to penal code (only state constitution)                                  |
| Durango          | 1-3 years prison          | 1-3 years prison and fine  | Increased sentences for “collaborators”                                             |
| Guanajuato       | 6 months to 3 years prison| 6 months to 3 years prison | Increased sentences for “collaborators”                                             |
| Jalisco          | 4 months to 1 year prison | 4 months to 1 year prison  | Added possibility of psychological treatment in commutation of prison                |
| Mexico DF        | 1-3 years prison          | 3-6 months prison or community work | Added possibility of community work in commutation of prison                        |
| Morelos          | 1-5 years prison          | 1-5 years prison and fine  | Added possibility of psychological treatment in commutation of prison                |
| Nayarit          | 1-3 years prison and fine | 1-3 years prison and fine  | No changes to penal code (only state constitution)                                  |
| Oaxaca           | 6 months to 2 years prison| 6 months to 2 years prison | No changes to penal code (only state constitution)                                  |
| Queretaro        | 1-3 years prison          | 1-3 years prison           | No changes to penal code (only state constitution)                                  |
| Quintana Roo     | 6 months to 2 years prison| 6 months to 2 years prison | No changes to penal code (only state constitution)                                  |
| San Luis de Potosí| 1-3 years prison and fine| 1-3 years prison and fine  | Monetary amount of fine altered                                                     |
| Sonora           | 1-6 years prison and fine | 1-6 years prison and fine  | No changes to penal code (only state constitution)                                  |
| Tamaulipas       | 1-5 years prison          | 1-5 years prison           | Added possibility of psychological treatment in commutation of prison                |
| Yucatan          | 1-5 years prison          | 1-5 years prison           | Changed sanctions in certain specified circumstances                                |

Notes: This table summarises changes in penal codes when a reform to abortion laws was enacted in Mexico in the period under study in this paper. All details are collated from a side-by-side reading of penal codes existing prior to and posterior to the reform. In cases where no changes were made in the penal codes, this implies that changes were only made in the State Constitutions, which were altered to recognise life as beginning at conception. Referenced on page [7,29].
Table A2: Constitutional Changes Following Mexico DF’s ILE Reforms

| State          | Reform Date | Constitutional Decree | Article in Question |
|----------------|-------------|-----------------------|---------------------|
| Baja California| Dec 26, 2008| Decree 175            | 7                   |
| Chiapas        | Jan 20, 2009| Decree 139            | 178                 |
| Chihuahua      | Jun 21, 2008| Decree 231-08         | 143                 |
| Colima         | Nov 25, 2009| Decree 296            | 187                 |
| Durango        | May 31, 2009| Decree 273            | 350                 |
| Guanajuato     | May 26, 2009| Dictamen 836          | 158                 |
| Jalisco        | Jul 02, 2009| Decree 22361          | 228                 |
| Morelos        | Dec 11, 2008| Decree 1153           | 115                 |
| Nayarit        | Jun 06, 2009| Decree 50             | 335                 |
| Oaxaca         | Sep 11, 2009| Decree 1383           | 312                 |
| Puebla         | Jun 03, 2009| SPI-ISS-27-09*        | 136                 |
| Querétaro      | Sep 18, 2009| P. O. 68‡            | 339                 |
| Quintana Roo   | May 15, 2009| Decree 158            | 92                  |
| San Luis Potosí| Sep 02, 2009| Decree 833            | 128                 |
| Sonora         | Apr 06, 2009| Law 174               | 265                 |
| Tamaulipas     | Dec 23, 2009| Decree LX-1850        | 356                 |
| Yucatán        | Aug 07, 2009| Decree 219            | 389                 |
| Veracruz       | Nov 17, 2009| G. L. 155‡           | 150                 |

Notes: All states which formally altered their constitutions following Mexico DF’s ILE reform are indicated above. Constitutional decree refers to the law composed to alter the state constitution, and article in question refers to the article altered in the constitution or penal code which was altered by the decree. Dates, decrees and articles are collated by the authors from various state government sources. The official document approving each decree and its associated date is available in a zipped folder on the authors’ websites.

∗ Decrees or official newspapers for the State of Puebla could not be located by the authors. The date and article in question is suggested by Gamboa Montejano and Valdés Robledo (2014).

‡ P. O. refers to the official newspaper where laws are published in Querétaro, and G. L. refers to the same newspaper in Veracruz. The law was published without number (pp. 9857-9859) in P. O. 68 and in G. L. 155 (pp 2-5) in Querétaro and Veracruz respectively. Referenced on page [7,31].
Figure A2: Geographical Distribution of State Law Changes (post August-2007)

Notes: The August 2007 ILE reform occurred in Mexico DF (yellow). Posterior (regressive) reforms in other states are indicated in red, with states highlighted in blue indicating that no law change occurred between 2007 and 2016. Referenced on page [7].
# Table A3: Maternal Morbidity in Mexico – Frequency of Each ICD-10 Class in Hospitalization Data

| ICD-10 Code | Private Code | Name                                                                 | Cases     | Percent |
|-------------|--------------|----------------------------------------------------------------------|-----------|---------|
| O00         | 236          | Ectopic pregnancy                                                     | 187,315   | 0.534   |
| O01         | 236          | Hydatidiform mole                                                     | 30,190    | 0.086   |
| O02         | 236          | Other abnormal products of conception                                | 650,198   | 1.852   |
| O03         | 234          | Spontaneous abortion                                                 | 335,081   | 0.954   |
| O04         | 235          | Medical abortion                                                      | 7,268     | 0.021   |
| O05         | 236          | Other abortion                                                        | 53,928    | 0.154   |
| O06         | 236          | Unspecified abortion                                                 | 2,153,004 | 6.133   |
| O07         | 236          | Failed attempted abortion                                             | 996       | 0.003   |
| O08         | 236          | Complications following abortion and ectopic/molar pregnancy          | 12,047    | 0.034   |
| O10         | 237          | Complications due to Pre-Existing Hypertension                        | 81,301    | 0.232   |
| O11         | 237          | Pre-existing hypertensive disorder with superimposed proteinuria      | 2,504     | 0.007   |
| O12         | 237          | Gestational oedema and proteinuria without hypertension              | 967       | 0.003   |
| O13         | 237          | Gestational hypertension without significant proteinuria             | 592,387   | 1.687   |
| O14         | 237          | Severe pre-eclampsia                                                 | 666,635   | 1.899   |
| O15         | 237          | Eclampsia                                                            | 49,263    | 0.140   |
| O16         | 237          | Unspecified maternal hypertension                                    | 145,099   | 0.413   |
| O20         | 242          | Haemorrhage in early pregnancy                                       | 677,757   | 1.931   |
| O21         | 242          | Excessive vomiting in pregnancy                                      | 60,311    | 0.172   |
| O22         | 242          | Venous complications in pregnancy                                    | 7,322     | 0.021   |
| O23         | 242          | Infections of genitourinary tract in pregnancy                        | 792,372   | 2.257   |
| O24         | 242          | Diabetes mellitus in pregnancy                                       | 252,069   | 0.718   |
| O25         | 242          | Malnutrition in pregnancy                                            | 956       | 0.003   |
| O26         | 242          | Maternal care for other conditions predominantly related to pregnancy | 86,511    | 0.246   |
| O28         | 242          | Abnormal findings on antenatal screening of mother                   | 1,354     | 0.004   |
| O29         | 242          | Complications of anaesthesia during pregnancy                        | 1,104     | 0.003   |
| O30         | 239          | Multiple gestation                                                   | 116,853   | 0.333   |
| O31         | 239          | Complications specific to multiple gestation                         | 4,178     | 0.012   |
| O32         | 239          | Maternal care for known or suspected malpresentation of fetus        | 377,630   | 1.076   |
| O33         | 239          | Maternal care for known or suspected disproportion                   | 1,237,260 | 3.524   |
| O34         | 239          | Maternal care for known or suspected abnormality of pelvic organs    | 1,483,859 | 4.227   |
| O35         | 239          | Maternal care for known or suspected fetal abnormality and damage    | 16,046    | 0.046   |
| O36         | 239          | Maternal care for other known or suspected fetal problems            | 737,348   | 2.100   |
| O40         | 239          | Polyhydramnios                                                       | 33,782    | 0.096   |
| O41         | 239          | Other disorders of amniotic fluid and membranes                      | 694,761   | 1.979   |
| O42         | 239          | Premature rupture of membranes                                       | 1,079,039 | 3.074   |
| O43         | 239          | Placental disorders                                                  | 12,270    | 0.035   |
| Code | Line | Description                                                                 | Value   | Rate   |
|------|------|------------------------------------------------------------------------------|---------|--------|
| O44  | 238  | Placenta praevia                                                             | 98,225  | 0.280  |
| O45  | 238  | Premature separation of placenta (abruptio placentae)                        | 54,260  | 0.155  |
| O46  | 238  | Antepartum haemorrhage, not elsewhere classified                             | 8,770   | 0.025  |
| O47  | 239  | False labour                                                                 | 1,214,865 | 3.461 |
| O48  | 239  | Prolonged pregnancy                                                          | 85,304  | 0.243  |
| O60  | 242  | Preterm delivery                                                             | 436,889 | 1.244  |
| O61  | 242  | Failed induction of labour                                                   | 74,634  | 0.213  |
| O62  | 242  | Abnormalities of forces of labour                                           | 235,129 | 0.670  |
| O63  | 242  | Long labour                                                                  | 263,861 | 0.752  |
| O64  | 240  | Obstructed labour due to malposition and malpresentation of fetus            | 255,257 | 0.727  |
| O65  | 240  | Obstructed labour due to maternal pelvic abnormality                          | 478,134 | 1.362  |
| O66  | 240  | Other obstructed labour                                                       | 134,555 | 0.383  |
| O67  | 242  | Labour and delivery complicated by intrapartum haemorrhage                   | 9,832   | 0.028  |
| O68  | 242  | Labour and delivery complicated by fetal stress (distress)                   | 761,623 | 2.169  |
| O69  | 242  | Labour and delivery complicated by umbilical cord complications              | 133,400 | 0.380  |
| O70  | 242  | Perineal laceration during delivery                                           | 82,045  | 0.234  |
| O71  | 242  | Other obstetric trauma                                                       | 22,141  | 0.063  |
| O72  | 241  | Postpartum haemorrhage                                                       | 91,844  | 0.262  |
| O73  | 242  | Retained placenta and membranes, without haemorrhage                         | 51,166  | 0.146  |
| O74  | 242  | Complications of anaesthesia during labour and delivery                       | 4,832   | 0.014  |
| O75  | 242  | Other complications of labour and delivery                                   | 167,982 | 0.478  |
| O80  | 243  | Single spontaneous delivery                                                   | 14,383,652 | 40.972 |
| O81  | 242  | Single delivery by forceps and vacuum extractor                              | 57,556  | 0.164  |
| O82  | 242  | Single delivery by caesarean section                                          | 2,465,467 | 7.023 |
| O83  | 242  | Other assisted single delivery                                                | 98,323  | 0.280  |
| O84  | 242  | Multiple delivery                                                            | 46,596  | 0.133  |
| O85  | 244  | Puerperal sepsis                                                             | 25,599  | 0.073  |
| O86  | 244  | Other puerperal infections                                                    | 35,657  | 0.102  |
| O87  | 244  | Venous complications in the puerperium                                        | 2,418   | 0.007  |
| O88  | 244  | Obstetric embolism                                                           | 1,147   | 0.003  |
| O89  | 244  | Complications of anaesthesia during the puerperium                            | 8,855   | 0.025  |
| O90  | 244  | Complications of the puerperium, not elsewhere classified                     | 76,866  | 0.219  |
| O91  | 244  | Infections of breast associated with childbirth                              | 7,497   | 0.021  |
| O92  | 244  | Other disorders of breast and lactation associated with childbirth            | 791     | 0.002  |
| O94  | 244  | Sequelae of complication of pregnancy, childbirth and the puerperium          | 1,809   | 0.005  |
| O95  | 244  | Obstetric death of unspecified cause                                         | 38      | 0.000  |
| O96  | 244  | Death from obstetric cause >42 days but < 1 year after delivery               | 10      | 0.000  |
| O97  | 244  | Death from sequelae of direct obstetric causes                               | 10      | 0.000  |
| O98  | 244  | Maternal infectious and parasitic diseases                                    | 97,048  | 0.276  |
| O99  | 244  | Other maternal diseases complicating pregnancy, birth and the puerperium      | 491,279 | 1.399  |
Notes: Each ICD-10 code is listed in the “O” class, as well as the total number of events (and their relative proportion of all ICD “O” codes) observed in the administrative data used in this paper. Referenced on page [10,32,A29,A29,A30,A30,A42,A42].

Table A4: Year by State Level Summary Statistics of Principal Variables

| Variable | Obs. | Mean   | Std. Dev. | Min. | Max. |
|----------|------|--------|-----------|------|------|
| **Panel A: Morbidity Outcomes** | | | | | |
| Total Number of Deliveries in Public Hospitals | 384 | 44405  | 34708 | 7109 | 211999 |
| Total Inpatient Cases for ICD O codes, except births | 384 | 47018  | 32696 | 9085 | 172656 |
| Total Inpatient Cases for Abortion-Related Causes | 384 | 8366   | 6587 | 1454 | 37857 |
| Total Inpatient Cases for Haemorrhage Early in Pregnancy | 384 | 1765   | 1208 | 252 | 6426 |
| Total Inpatient Days for Abortion-Related Causes | 384 | 11841  | 9681 | 1805 | 49671 |
| Total Inpatient Days for Haemorrhage Early in Pregnancy | 384 | 3812   | 2961 | 495 | 14781 |
| Total Inpatient Cases for Obstetric Complications | 384 | 468    | 619   | 10 | 3601 |
| Total Inpatient Cases for Post-Partum Depression | 384 | 1       | 1     | 0 | 11 |
| **Panel B: Mortality Outcomes** | | | | | |
| Total Number of Maternal Deaths | 512 | 36     | 33    | 1 | 182 |
| Total Number of Maternal Deaths due to Abortion | 512 | 3      | 3    | 0 | 15 |
| **Panel C: Demographic Outcomes** | | | | | |
| Population of 15-49 Year-old Women | 512 | 860298 | 741558 | 116430 | 4196244 |
| Total Number of Births | 416 | 73074  | 58625 | 10991 | 300349 |
| Birth rate per 1,000 women | 416 | 88     | 10    | 64 | 129 |

Notes: Each observation is a state-year cell. Mexico is composed of 32 States. The number of cells varies due to the number of years of data availability. In panel A, morbidity data is displayed for 12 years (2004-2015). Values are generated from all inpatient cases as classified from microdata from the primary care (hospital) records from all public hospitals, both those administered by the Secretariat of health and the social security system. Each type of morbidity is classified by ICD-10 codes. In Panel B, mortality outcomes are displayed for 16 years (2001-2016). In panel C, data on population is displayed for 16 years (2001-2016), and data on births is displayed for 13 years (2001-2013). Following CONAPO, the last four years of birth outcomes are suppressed to account for reporting outside of the period of birth. Referenced on page [12,13,A44].

Table A5: Summary Statistics on Time-Varying Controls

| Variable | Obs. | Mean   | Std. Dev. | Min. | Max. |
|----------|------|--------|-----------|------|------|
| Percent of State Living Below Poverty Line | 512 | 46.81  | 14.58 | 17.58 | 83.85 |
| Percent of State Residents with Access to Health Institutions | 512 | 48.88  | 14.07 | 20.66 | 90.69 |
| Average Schooling of Adult Population | 512 | 8.43   | 0.99 | 5.71 | 11.05 |
| Percent of Women of Working Age Economically Active | 512 | 37.05  | 2.85 | 26.66 | 44.69 |
| Average Salary of Full Time Workers | 512 | 5037.28 | 1089.12 | 1957.12 | 8022.83 |
| Proportion of Municipalities with Seguro Popular Coverage | 512 | 0.78   | 0.38 | 0.00 | 1.00 |

Notes: Each observation is a state-year cell. Mexico is composed of 32 States. The number of observations represents 32 states and years 2001-2016. State poverty is provided by the National Council for the Evaluation of Social Development Policy (CONEVAL). The proportion of residents with access to health institutions is provided by the Mexican Secretary of Health. Years of schooling are compiled from the National Educational Information System (SNIP). The proportion of economically active women and average salaries by state are calculated from the trimesterly National Occupation and Employment Survey (ENOE) provided by INEGI. Seguro Popular coverage is calculated from municipal rollout data, and records the proportion of each municipalities in the state having access. Prior to 2002 this value is always 0, and after 2007 this value is always 1. Referenced on page [12,A44].
Figure A3: Monthly Trends in Residualized Specific Morbidities using Secretary of Health Hospitals Only

Notes: Monthly averages of the residual of the total number of cases of abortion related morbidity and haemorrhage early in pregnancy are presented. The residuals are calculated conditional on state-specific month fixed effects, as well as state fixed effects, to smooth regular monthly variation by state. Raw totals are presented in Figure 1. Monthly averages can only be plotted for data from hospitals administered by the Secretariat of Health. The dotted vertical line is plotted in April of 2007, the date of passage of the abortion reform, and wide-scale rollout of available abortions. Referenced on page [13,13].

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Figure A4: Longer Trends in Specific Morbidities using Secretary of Health Hospitals Only

(a) Abortion-Related Morbidity (Total)

(b) Haemorrhage in Early Pregnancy (Total)

Notes: Figures present the total number of discharges due to abortion related morbidity (panel A), and haemorrhage early in pregnancy (panel B). Each trend is based on data from hospitals administered from the Secretariat of Health only (available from 2000 onwards). Referenced on page [13,13,A47]
### Table A6: Difference-in-Differences Estimates of Legal Reforms on Morbidity using Inpatient Days

|                          | Abortion Related Morbidity | Haemorrhage Early in Pregnancy |
|--------------------------|-----------------------------|-------------------------------|
|                          | (1)                         | (2)                          | (3)                         | (4)                          | (5)                         | (6)                         | (7)                         | (8)                         |
| **Panel A: ILE versus Non-Reformers** |                              |                              |                              |                              |                              |                              |                              |                              |
| Post-ILE Reform (DF)     | -0.082***                   | -0.086***                    | -0.069***                    | -0.078***                    | -0.026***                    | -0.031***                    | -0.027                      | -0.027*                     |
|                          | (0.018)                     | (0.014)                      | (0.026)                      | (0.024)                      | (0.009)                      | (0.009)                      | (0.017)                     | (0.016)                     |
| Observations             | 2,496                       | 2,496                        | 2,496                        | 2,496                        | 2,496                        | 2,496                        | 2,496                       | 2,496                       |
| Mean of Dependent Variable | 0.444                       | 0.444                        | 0.444                        | 0.444                        | 0.084                        | 0.084                        | 0.084                       | 0.084                       |
| **Panel B: Regressive Reforms versus Non-Reformers** |                              |                              |                              |                              |                              |                              |                              |                              |
| Post-Regressive Law Change | -0.011                       | 0.007                        | -0.022                       | -0.004                       | -0.008                       | -0.003                       | -0.008                      | -0.001                      |
|                          | (0.020)                     | (0.017)                      | (0.017)                      | (0.017)                      | (0.012)                      | (0.010)                      | (0.012)                     | (0.009)                     |
| Observations             | 5,952                       | 5,952                        | 5,952                        | 5,952                        | 5,952                        | 5,952                        | 5,952                       | 5,952                       |
| Mean of Dependent Variable | 0.433                       | 0.433                        | 0.433                        | 0.433                        | 0.082                        | 0.082                        | 0.082                       | 0.082                       |
| State and Year FEs       | Y                           | Y                            | Y                            | Y                            | Y                            | Y                            | Y                           | Y                           |
| Population Weights       | Y                           |                              | Y                            |                              | Y                            |                              | Y                           |                              |
| Time Varying Controls    | Y                           | Y                            |                              |                              | Y                            |                              | Y                           |                              |

Notes: Specifications replicate those in Table 2, however now instead of estimating the impact of the reforms on the number of inpatient cases, we estimate impacts on the total number of inpatient days corresponding to these cases. Each column displays a difference-in-differences regression of the impact of abortion reform on total inpatient days per 1,000 fertile-aged women for each morbidity class. Average levels of each dependent variable are presented at the foot of the table. Each regression is estimated using states that adopt reforms (ILE in panel A, regressive reforms in panel B) versus other non-adopting states. All standard errors are clustered at the level of the state. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [18].
Figure A5: Event Studies of Morbidity Impacts Based on Trimesterly Registers

Notes: Event studies replicate those from Figures 2a and 2b of the paper examining the impacts of abortion reforms on rates of hospitalization, however using trimesterly administrative records. All details follow those indicated in notes to Figures 2a and 2b where we work only with the universe of hospital visits in public (Ministry of Health) hospitals, given unavailability of exact dates (beyond year) in hospital records run by the social security system. Additionally, in each case we include trimester by state fixed effects to flexibly control for seasonality in births. Referenced on page [21].
Figure A6: Monthly Event Studies for the Impact of Abortion Reform on Rates of (Late) Obstetric Complications

Notes: Event studies document the evolution of rates of obstetric complications (ICD codes O70-O75 inclusive) per 1,000 women surrounding the passage of abortion reforms. Each point estimate refers to the change in rates between treated and non-treated states, compared to their baseline differential (1 month prior to the reform). The left-hand panel shows the difference between Mexico DF and untreated states surrounding the passage of the ILE reform. The right-hand panel shows the difference between regressive policy changers and non-changers around the (time-varying) date that each reform was passed. Regressions are weighted by the population of fertile-aged women, and the full set of time-varying controls are included. Referenced on page [22].
Figure A7: Alternative Event Study Placebo Tests – Non-Obstetric Outcomes (ILE Reform)

Notes: Event studies are documented examining the impact of the ILE abortion reform on alternative ICD codes (classes not related to pregnancy, childbirth and the puerperium). Each outcome is measured per 1,000 women aged 15–49 (as per Figures 2a-2b) focusing on the same group of fertile aged women. All additional details follow equation 3. Referenced on page [22].

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Figure A8: Alternative Event Study Placebo Tests – Non-Obstetric Outcomes (Law Tightenings)

(a) Diseases of the ear and mastoid process

(b) Neoplasms

(c) Endocrine, nutritional and metabolic diseases

(d) Diseases of the blood and blood-forming organs

(e) Diseases of the nervous system

(f) Diseases of the skin and subcutaneous tissue

Notes: Event studies are documented examining the impact of the regressive abortion reform on alternative ICD codes (classes not related to pregnancy, childbirth and the puerperium). Each outcome is measured per 1,000 women aged 15–49 (as per Figures 2a-2b) focusing on the same group of fertile aged women. All additional details follow equation 4. Referenced on page [22].
Figure A9a: Event Studies for Rates of Maternal Mortality

(a) Progressive Abortion Reform (ILE)
(b) Regressive Abortion Laws (Legal Tightening)

Figure A9b: Event Studies for Rates of Maternal Mortality due to Abortion

(c) Progressive Abortion Reform (ILE)
(d) Regressive Abortion Laws (Legal Tightening)

Notes: Event studies examine the impact of abortion reforms on all maternal deaths in Figure A9a and all maternal deaths relating expressly to abortion (ICD codes O02-O08) in Figure A9b. In both cases these are measured as deaths per 100,000 women of fertile age. Additional notes related to the estimation procedure are provided in Figure 2a. Referenced on page [23,A14,A14].
### Table A7: Difference-in-Differences Estimates of Legal Reforms on Maternal Mortality

| Panel A: ILE versus Non-Reformers | All Maternal Mortality | Maternal Mortality due to Abortion |
|----------------------------------|------------------------|-----------------------------------|
|                                  | (1)                    | (2)  | (3)  | (4)  | (5)  | (6)  | (7)  | (8)  |
| Post-ILE Reform (DF)             | -0.585*                | -0.517 | -0.262 | -0.370 | -0.093* | -0.085* | -0.015 | -0.067 |
|                                  | (0.351)                | (0.329) | (0.688) | (0.703) | (0.052) | (0.047) | (0.100) | (0.090) |
| Observations                     | 208                    | 208  | 208  | 208  | 208  | 208  | 208  | 208  |
| Mean of Dependent Variable       | 3.981                  | 3.981 | 4.028 | 4.028 | 0.278 | 0.278 | 0.276 | 0.276 |

| Panel B: Regressive Reforms versus Non-Reformers | All Maternal Mortality | Maternal Mortality due to Abortion |
|--------------------------------------------------|------------------------|-----------------------------------|
| Post Regressive Law Change                      | -0.476                 | -0.421 | -0.480 | -0.552 | -0.095* | -0.063 | -0.095* | -0.074 |
|                                                  | (0.336)                | (0.351) | (0.321) | (0.337) | (0.057) | (0.043) | (0.054) | (0.047) |
| Observations                                    | 496                    | 496  | 496  | 496  | 496  | 496  | 496  | 496  |
| Mean of Dependent Variable                      | 3.976                  | 3.976 | 4.028 | 4.028 | 0.272 | 0.272 | 0.276 | 0.276 |
| State and Year FEs                              | Y                      | Y    | Y    | Y    | Y    | Y    | Y    | Y    |
| Population Weights                              | Y                      | Y    | Y    | Y    | Y    | Y    | Y    | Y    |
| Time-Varying Controls                           | Y                      | Y    | Y    | Y    | Y    | Y    | Y    | Y    |

Notes: Each column displays a difference-in-differences regression of the impact of abortion reform on rates of maternal mortality. Maternal mortality (all causes) and maternal mortality for abortive causes are each measured as total deaths per 100,000 fertile aged women each year, and average levels in the full set of data are available at the foot of the table. All standard errors are clustered at the level of the state. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. Referenced on page [23,23,A34].
### Table A8: Review of Estimates of Abortion Reform on Birth Rates

| Authors | Reform | Outcome | Notes |
|---------|--------|---------|-------|
| Panel A: Progressive Law Changes |
| Ananat et al. (2007) | Roe v. Wade | Probability of first birth before age 21. | Probability of giving birth among minors 15-19. |
| Ananat et al. (2007) | Abortion and the pill | Probability of giving birth before age 19. | Probability of giving birth among minors 15-19. |
| Antón et al. (2018) | Uruguay | Abortion | Access to an abortion center for women ages 15-19. |
| Bailey (2009) | United States | Expansions in Medicaid income eligibility | Effect of abortion and the pill. |
| Graham et al. (1999) | Abortion and the pill | Probability of giving birth among unmarried non-black women aged 19-24. | Probability of giving birth among unmarried non-black women aged 19-24. |
| Goldli (2008) | United States | Expansions in Medicaid income eligibility | Probability of giving birth among unmarried non-black women aged 19-24. |
| Joyce and Kaestner (1996) | United States | Expansions in Medicaid income eligibility | Probability of giving birth among unmarried non-black women aged 19-24. |
| Panel B: Regressive Law Changes |
| Kane and Saigh (1996) | Medicaid restriction and parental consent | Probability of giving birth among minors 15-19. | Probability of giving birth among minors 15-19. |
| Cook et al. (1999) | Texas | Probability of giving birth among minors 15-19. | Probability of giving birth among minors 15-19. |
| Levine et al. (1996) | United States | Medicaid funding restrictions | Probability of giving birth among unmarried non-black women aged 15-19. |
| Valente (2014) | Mexico | Access to an abortion center | Probability of giving birth among unmarried non-black women aged 15-19. |

Notes: | Columns 2 and 3 (3 years of exposure), table 2, p. 29. |
|---------------------------------|---------------------------------|
| Column 4, Table 6, p. 8. | Table 4, p. 8. |
| Column 5 and 10 (3 years of exposure), table 3, p. 49. | Table 4, p. 8. |
| Column 6, Table 7, p. 98. | Table 4, p. 8. |
| Column 7, Table 8, p. 100. | Table 4, p. 8. |
| Column 8, Table 9, p. 103. | Table 4, p. 8. |
| Column 9, Table 10, p. 104. | Table 4, p. 8. |
| Column 1, table 1, p. 485. | Table 4, p. 8. |
| Column 2, table 1, p. 485. | Table 4, p. 8. |
| Column 3, table 1, p. 485. | Table 4, p. 8. |
| Column 4, table 1, p. 485. | Table 4, p. 8. |

References: | Columns 2 and 3 (3 years of exposure), table 2, p. 29. |
|---------------------------------|---------------------------------|
| Column 4, Table 6, p. 8. | Table 4, p. 8. |
Figure A10: Trimesterly Event Studies for the Impact of Abortion Reform on Birth Rates

Notes: Event studies document the evolution of birth rates per 1,000 women surrounding the passage of abortion reforms. Each point estimate refers to the change in rates between treated and non-treated states, compared to their baseline differential immediately prior to the reform. Each panel is based on trimesterly birth rates. In each case, the left-hand panel shows the difference between Mexico DF and untreated states surrounding the passage of the ILE reform. The right-hand panel shows the difference between regressive policy changers and non-changers around the (time-varying) date that each reform was passed. Regressions are weighted by the population of fertile-aged women, and the full set of time-varying controls are included. Referenced on page [25,26,26,27].
Figure A11: “Honest DiD” Methods Considering Two-Sided Violation of Parallel Trends and Estimated ILE Impacts (Birth Rates)

Notes: Each plot presents the estimated event study lead (from leads 1-6) based on alternative assumptions about the evolution of outcomes in Mexico DF versus untreated areas in the absence of the ILE reform. The first (blue) CI is the original event study 95% CI based on a parallel trends assumption. Additional (red) CIs are 95% CIs based on an assumption that the Mexico DF and the untreated states would have continued following a linear trend based on pre-trends, and allowing for this trend to not deviate by more than \( M \) units between each period, where \( M \) is indicated on the horizontal access. All inference follows Rambachan and Roth (2019)’s Fixed Length Confidence Interval procedure. Referenced on page [26,A20,A20,A21,A21].
Figure A12: “Honest DiD” Methods Considering Positive Violation of Parallel Trends and Estimated ILE Impacts (Birth Rates)

Notes: Refer to notes to Figure A11. Here similar methods are implemented to examine sensitivity of birth rates to the ILE reform in Mexico DF, however in this case only considering positive violations of the linear trend assumption, where outcomes are allowed to (positively) vary by as much as $M$ units. Referenced on page [26].
Figure A13: “Honest DiD” Methods Considering Negative Violation of Parallel Trends and Estimated ILE Impacts (Birth Rates)

Notes: Refer to notes to Figure A11. Here similar methods are implemented to examine sensitivity of birth rates to the ILE reform in Mexico DF, however in this case only considering negative violations of the linear trend assumption, where outcomes are allowed to (negatively) vary by as much as $M$ units. Referenced on page [26].
Table A9: Difference-in-Differences Estimates Examining Maternal and Paternal Characteristics

| Panel A: ILE versus Non-Reformers | Mother Age (1) | Father Age (2) | Mother Primary (3) | Mother Secondary (4) | Father Primary (5) | Father Secondary (6) | Married (7) | Number Children (8) | First Birth (9) |
|----------------------------------|----------------|----------------|-------------------|----------------------|-------------------|---------------------|------------|---------------------|----------------|
| Post-ILE Reform (DF)             | 0.286***       | 0.331***       | 0.055**           | 0.001                | 0.042**           | 0.027*              | 0.008      | 0.084               | 0.001         |
|                                  | (0.054)        | (0.112)        | (0.021)           | (0.019)              | (0.019)           | (0.016)             | (0.025)    | (0.073)             | (0.022)        |
| Observations                     | 2,028          | 2,028          | 2,028             | 2,028                | 2,028             | 2,028               | 2,028      | 2,028               | 2,028         |
| Mean of Dep. Var.                | 25.618         | 28.950         | 0.286             | 0.659                | 0.267             | 0.604               | 0.492      | 2.122               | 0.413         |
| Mean of Dep. Var. (Mexico DF)    | 26.343         | 29.390         | 0.187             | 0.794                | 0.152             | 0.753               | 0.464      | 1.896               | 0.443         |

| Panel B: Regressive Reforms versus Non-Reformers | Mother Age (1) | Father Age (2) | Mother Primary (3) | Mother Secondary (4) | Father Primary (5) | Father Secondary (6) | Married (7) | Number Children (8) | First Birth (9) |
|--------------------------------------------------|----------------|----------------|-------------------|-------------------|-------------------|---------------------|------------|---------------------|----------------|
| Post-Regressive Law Change                      | -0.003         | 0.024          | -0.001            | 0.019             | -0.001            | 0.017*              | 0.024**    | -0.011              | -0.006        |
|                                                  | (0.043)        | (0.054)        | (0.011)           | (0.012)           | (0.010)           | (0.010)             | (0.011)    | (0.036)             | (0.012)        |
| Observations                                     | 4,836          | 4,836          | 4,836             | 4,836             | 4,836             | 4,836               | 4,836      | 4,836               | 4,836         |
| Mean of Dep. Var.                                | 25.531         | 28.982         | 0.327             | 0.612             | 0.298             | 0.561               | 0.463      | 2.160               | 0.412         |
| Mean of Dep. Var. (Regressive States)            | 25.557         | 29.068         | 0.385             | 0.557             | 0.336             | 0.523               | 0.480      | 2.223               | 0.402         |

Notes: Each column displays a two way fixed effect model following equation 1 (panel A) and equation 2 (panel B), where the outcome consists of state by month level averages of maternal and paternal characteristics from all birth microdata. Average levels of each outcome are displayed in table footers. All standard errors are clustered at the level of the state. *p<0.10; **p< 0.05; ***p< 0.01. Referenced on page [28,28].
Table A10: Examining Channels of Impacts of Abortion Reform on Morbidity

|                      | Abortion Related Morbidity | Haemorrhage Early in Pregnancy |
|----------------------|----------------------------|-------------------------------|
|                      | No Characteristics (1)     | Parental Characteristics (2)  | No Characteristics (3)     | Parental Characteristics (4) |
| Panel A: ILE versus Non-Reformers | (5)                        | (6)                           | (7)                        | (8)                          |
| Post-ILE Reform (DF) | -0.042*** (0.014)          | -0.057*** (0.009)              | -0.013 (0.018)              | -0.002 (0.021)               |
|                      | -0.012** (0.005)           | -0.012** (0.005)              | -0.009** (0.005)            | -0.013*** (0.003)            |
| Observations         | 2,028                      | 2,028                         | 2,028                      | 2,028                        |
| Mean of Dependent Variable | 0.341                      | 0.341                         | 0.341                      | 0.341                        |
| Panel B: Regressive Reforms versus Non-Reformers |                          |                               |                            |
| Post-Regressive Law Change | -0.010 (0.010)             | -0.008 (0.010)                | -0.010 (0.008)             | -0.013* (0.007)              |
|                      | -0.004 (0.005)             | -0.002 (0.004)                | -0.004 (0.005)             | -0.003 (0.003)               |
| Observations         | 4,836                      | 4,836                         | 4,836                      | 4,836                        |
| Mean of Dependent Variable | 0.329                      | 0.329                         | 0.329                      | 0.329                        |

Notes: Each column displays a difference-in-differences regression of the impact of abortion reform on rates of morbidity (inpatient cases). Columns 1 and 2 (and 5 and 6) present weighted and unweighted estimated impacts in baseline models without parental controls. Columns 3 and 4 (and 5 and 7) present identical models, additionally including controls for parental characteristics. Each morbidity class is measured as cases per 1,000 fertile aged women each year, and average levels in the full set of data are available at the foot of the table. Each regression is estimated using states that adopt reforms (ILE in panel A, regressive reforms in panel B) versus other non-adopting states. All standard errors are clustered at the level of the state. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [28,28].
Notes: Total number of sentences for crimes relating to abortion and the average length of prison sentences are generated from administrative records captured in Mexico’s Judicial Statistics on Penal Matters. This is the universe of judiciary decisions in the country based on the first legal judgment (and here we focus only on cases relating to abortion), and so does not include any subsequent appeals. Prison sentence lengths are calculated from a categorical variable capturing bins of between 6 months and two years, and in each case we record the total years (or fractions of years) based on the midpoint of each bin. Bins are consistently used in the period displayed here. Regressive states refer to any states tightening abortion laws in the period under study. Referenced on page [29,A44].
Figure A15: *De Jure* Sentencing of Abortion: Event Studies for Regressive Law Changes

Notes: Event studies document the evolution or criminal outcomes for cases relating to abortion surrounding the passage of regressive abortion laws in Mexican States. Total number of sentences and the average length of prison sentences are generated from administrative records captured in Mexico’s Judicial Statistics on Penal Matters. This is the universe of judiciary decisions in the country based on the first legal judgment (and here we focus only on cases relating to abortion), and so does not include any subsequent appeals. Prison sentence lengths are calculated from a categorical variable capturing bins of between 6 months and two years, and in each case we record the total years (or fractions of years) based on the midpoint of each bin. Bins are consistently used in the period displayed here. Referenced on page [29].
Table A11: Difference-in-Differences Estimates of Abortion Reforms on Judicial Outcomes (Standardized by Population)

|                                               | Number of Prison Sentences | Length of Prison Sentences |
|------------------------------------------------|-----------------------------|-----------------------------|
|                                                | (1)                         | (2)                         | (3)                         | (4)                         |
| **Panel A: ILE versus Non-Reformers**          |                             |                             |                             |
| Post-ILE Reform (DF)                           | -0.001***                   | -0.001***                   | 0.003**                     | 0.002                       |
|                                               | (0.001)                     | (0.000)                     | (0.002)                     | (0.002)                     |
| Observations                                  | 117                         | 117                         | 56                          | 56                          |
| Mean of Dependent Variable                    | 0.002                       | 0.002                       | 0.004                       | 0.004                       |
| **Panel B: Regressive Reforms versus Non-Reformers** |                             |                             |                             |
| Post-Regressive Law Change                     | -0.000                      | -0.001                      | 0.005*                      | 0.004*                      |
|                                               | (0.001)                     | (0.001)                     | (0.003)                     | (0.002)                     |
| Observations                                  | 279                         | 279                         | 171                         | 171                         |
| Mean of Dependent Variable                    | 0.002                       | 0.002                       | 0.006                       | 0.006                       |
| State and Year FEs                             | Y                           | Y                           | Y                           | Y                           |
| Population Weights                             | Y                           | Y                           | Y                           | Y                           |

Notes: Refer to notes to Table 4. Models replicate those in Table 4, however now outcome variables are standardized per 1,000 fertile-aged population. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [29].
Table A12: Difference-in-Differences Estimates of Legal Reforms on Morbidity using Yearly Data

|                          | Abortion Related Morbidity | Haemorrhage Early in Pregnancy |
|--------------------------|----------------------------|--------------------------------|
|                          | (1)                        | (2)                            |
|                          | (3)                        | (4)                            |
|                          | (5)                        | (6)                            |
|                          | (7)                        | (8)                            |
| **Panel A: ILE versus Non-Reformers** |                         |                                |
| Post-ILE Reform (DF)     | -1.194***                  | -1.477***                      |
|                         | (0.278)                    | (0.200)                        |
|                         | -1.562***                  | -1.481***                      |
|                         | (0.312)                    | (0.349)                        |
|                         | -0.952***                  | -1.053***                      |
|                         | (0.120)                    | (0.142)                        |
|                         | -1.034***                  | -0.930***                      |
|                         | (0.243)                    | (0.196)                        |
| Observations            | 156                        | 156                            |
| Mean of Dependent Variable | 10.474                  | 10.474                          |
|                          |                            |                                |
| **Panel B: Regressive Reforms versus Non-Reformers** |                         |                                |
| Post-Regressive Law Change | -0.241                   | -0.402                         |
|                         | (0.314)                    | (0.262)                        |
|                         | -0.348                     | -0.394                         |
|                         | (0.278)                    | (0.287)                        |
|                         | -0.339*                    | -0.319**                      |
|                         | (0.182)                    | (0.147)                        |
|                         | -0.352**                   | -0.214*                      |
|                         | (0.176)                    | (0.117)                        |
| Observations            | 372                        | 372                            |
| Mean of Dependent Variable | 10.318                  | 10.318                          |
| State and Year FEs      | Y                          | Y                              |
| Population Weights      | Y                          | Y                              |
| Time-Varying Controls   | Y                          | Y                              |

Notes: Each column displays a difference-in-differences regression of the impact of abortion reform on rates of morbidity (inpatient cases) following equation 1 and 2. Each morbidity class is measured as cases per 1,000 fertile aged women each year, and average levels in the full set of data are available at the foot of the table. All standard errors are clustered at the level of the state. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [31,31].
| Panel A: ILE versus Non-Reformers | Births per 1,000 Women | (1) | (2) | (3) | (4) |
|-----------------------------------|-----------------------|-----|-----|-----|-----|
| Post-ILE Reform (DF)              | -6.421***             | -7.652*** | -6.509*** | -7.349*** |
|                                   | (0.927)               | (1.264) | (1.343) | (1.299) |
| Observations                      | 169                   | 169   | 169   | 169   |
| Mean of Dependent Variable        | 88.310                | 88.310| 88.310| 88.310|
| Mean of Dependent Variable (Mexico DF) | 89.041                | 89.041| 89.041| 89.041|
| Panel B: Regressive Reforms versus Non-Reformers | Births per 1,000 Women | (1) | (2) | (3) | (4) |
| Post Regressive Law Change        | -2.166**              | -3.336*** | -2.317** | -2.880** |
|                                   | (1.090)               | (1.230) | (1.044) | (1.290) |
| Observations                      | 403                   | 403   | 403   | 403   |
| Mean of Dependent Variable        | 88.310                | 88.310| 88.310| 88.310|
| Mean of Dependent Variable (Regressive States) | 90.623                | 90.623| 90.623| 90.623|
| State and Year FEs                | Y                     | Y     | Y     | Y     |
| Population Weights                | Y                     |       |       |       |
| Time-Varying Controls             | Y                     |       |       |       |

Notes: Each column displays a difference-in-differences regression of the impact of abortion reform on birth rates. Birth rates are measured as the number of births per 1,000 fertile aged women each year. Time-varying controls are documented in Section B.2. All standard errors are clustered at the level of the state using a wild clustered bootstrap procedure. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [31,31].
Figure A16: Trends in Public and Private Health System Morbidity: Abortion-Related

(a) Quantity of Hospital Visits in the Private Sector

(b) Quantity of Hospital Visits in the Public Sector

Notes: Left-hand panel plots all abortion-related morbidity according to the universe of private health records. Microdata on these records are available by request from INEGI. Right-hand panel plots all abortion-related morbidity coded using the same codes as in private records based on the universe of public hospital records. A description of how these codes are merged between the public and private system is available in Appendix Table A3. Referenced on page [32].
Figure A17: Trends in Public and Private Health System Morbidity: Other Maternal Causes (including Haemorrhage)

Notes: Left-hand panel plots all “Other Maternal Causes” (including haemorrhage early in pregnancy) according to the universe of private health records. Microdata on these records are available by request from INEGI. Right-hand panel plots all “Other Maternal Causes” coded using the same codes as in private records based on the universe of public hospital records. A description of how these codes are merged between the public and private system is available in Appendix Table A3. Referenced on page [32].
Figure A18: Geographic Variation in Usage of Mexico DF’s ILE Program to Access Abortion

Notes: Each state is shaded according to the rate of abortions per 1,000 women provided under the auspices of the ILE reform. All rates are calculated based on administrative records of state of residence. Refer to Table A14 for the precise number and rate in each state. Referenced on page [33].
Table A14: State of Residence of Users of ILE: 2007-2015

| State              | Number of Patients | Rate per 1,000 women |
|--------------------|--------------------|----------------------|
| Aguascalientes     | 87                 | 0.036                |
| Baja California    | 40                 | 0.006                |
| Baja California Sur| 19                 | 0.014                |
| Campeche           | 11                 | 0.006                |
| Chiapas            | 34                 | 0.003                |
| Chihuahua          | 31                 | 0.004                |
| Coahuila           | 28                 | 0.005                |
| Colima             | 19                 | 0.014                |
| Mexico D.F.        | 104,048            | 5.833                |
| Durango            | 21                 | 0.006                |
| Guanajuato         | 268                | 0.023                |
| Guerrero           | 161                | 0.025                |
| Hidalgo            | 637                | 0.118                |
| Jalisco            | 334                | 0.023                |
| Mexico State       | 34,703             | 1.084                |
| Michoacán          | 309                | 0.035                |
| Morelos            | 464                | 0.128                |
| Nayarit            | 27                 | 0.012                |
| Nuevo León         | 66                 | 0.007                |
| Oaxaca             | 230                | 0.031                |
| Puebla             | 807                | 0.068                |
| Querétaro          | 329                | 0.085                |
| Quintana Roo       | 58                 | 0.020                |
| San Luis Potosí    | 108                | 0.021                |
| Sinaloa            | 19                 | 0.003                |
| Sonora             | 28                 | 0.005                |
| Tabasco            | 32                 | 0.007                |
| Tamaulipas         | 30                 | 0.004                |
| Tlaxcala           | 188                | 0.078                |
| Veracruz           | 267                | 0.018                |
| Yucatán            | 18                 | 0.005                |
| Zacatecas          | 52                 | 0.018                |
| Non-Mexican Residents | 52         | —                   |
| Unknown            | 250                | —                   |
| Total              | 143,550            | 0.628                |

Notes: The quantity of abortions are provided from administrative data compiled as the Information System for Legal Interruption of Pregnancy from Mexico City’s Secretary of Health, and are for the years 2007-2015. Rates per women refer to the number of abortions per 1,000 women aged 15-49. Referenced on page [33,34,A31,A31].
Table A15: DD Estimates Examining Policy Spillovers

|                          | Births (1) | Maternal Morbidity | Maternal Mortality |
|--------------------------|------------|--------------------|--------------------|
|                          |            | Abortion (2)       | Haemorrhage (3)    | All (4) | Abortive (5) |
| Post-ILE Reform (DF)     | -5.499***  | -0.964**           | -0.836***          | -0.007  | -0.001       |
|                          | (1.243)    | (0.403)            | (0.154)            | (0.005) | (0.001)      |
| Post-Regressive Law Change | -1.854     | -0.199             | -0.183             | -0.006* | -0.000       |
|                          | (1.295)    | (0.322)            | (0.123)            | (0.004) | (0.000)      |
| Post-ILE (Spillover State) | 3.558**    | 0.321              | 0.052              | -0.003  | 0.001**      |
|                          | (1.774)    | (0.373)            | (0.159)            | (0.003) | (0.000)      |

Observations: 416 384 384 512 512
Mean of Dependent Variable:
- Post-ILE Reform (DF) 87.798 10.336 2.343 0.040 0.003
- Post-Regressive Law Change 89.041 10.519 2.282 0.065 0.005
- Post-ILE (Spillover States) 90.623 9.783 2.555 0.046 0.003
- Mean of Dependent Variable (Spillover States) 85.128 8.071 1.746 0.046 0.003

Notes: DD estimates replicate specification 1, however now additionally control for a post-ILE indicator for states in which residents were recorded as having significant access to the ILE reform (according to administrative records). Each specification includes full time-varying controls, weights by state population, and standard errors are clustered using a wild bootstrap. For additional details, refer to Notes to Table 2. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [33].
|                                | Births (1) | Morbidity             | Mortality             |
|--------------------------------|------------|-----------------------|-----------------------|
|                                | Abortion (2)| Haemorrhage (3)       | Maternal Abortive (4) |
| Abortions per 1,000 Women      | -0.939***  | -15.634***            | -0.113                |
|                                | (0.221)    | (5.165)               | (0.096)               |
| Post-Regressive Law Change     | -2.419*    | -24.575               | -0.566*               |
|                                | (1.364)    | (33.186)              | (0.335)               |
| Observations                   | 416        | 384                   | 512                   |
| Mean of Dependent Variable     | 87.798     | 1033.568              | 4.028                 |

Notes: DD estimates replicate specification 1, however the ILE program is measured as the number of abortions accessed per 1,000 women in each state in the post-reform period. Post-Regressive Law Change is measured as a binary variable, so does not capture intensity, and is not interpreted in the same way as abortions per 1,000 women. Each outcome is measured per 1,000 women in the state and year (except Abortion and Haemorrhage, which are displayed per 100,000), and are identical to the outcomes in Tables 2, 3 and A7 in the paper. Each specification includes full time-varying controls, weights by state population, and standard errors are clustered using a wild bootstrap. For additional details, refer to Notes to Table 2. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [34].
Table A17: Heterogeneity in DD Estimates by Age and Insurance Coverage – Abortion-Related Morbidity

| Age Groups | 15–19 | 20–24 | 25–29 | 30–34 | 35–39 | 40–44 | Yes | No |
|------------|-------|-------|-------|-------|-------|-------|-----|----|
| 16         | (1)   | (2)   | (3)   | (4)   | (5)   | (6)   | (7) | (8) |
| Post-ILE Reform (DF) | -0.106*** | -0.110*** | -0.072*** | -0.065*** | -0.033*** | -0.008** | -0.049* | 0.014 |
|             | (0.010) | (0.017) | (0.017) | (0.013) | (0.010) | (0.004) | (0.027) | (0.028) |
| Observations | 2,340 | 2,340 | 2,340 | 2,340 | 2,340 | 2,340 | 2,340 | 2,340 |
| Mean of Dependent Variable | 0.402 | 0.521 | 0.406 | 0.301 | 0.217 | 0.099 | 0.144 | 0.148 |

**Panel A: ILE versus Non-Reformers**

| Observations | 5,580 | 5,580 | 5,580 | 5,580 | 5,580 | 5,580 | 5,580 | 5,580 |
| Mean of Dependent Variable | 0.393 | 0.504 | 0.389 | 0.290 | 0.210 | 0.097 | 0.136 | 0.144 |

**Panel B: Regressive Reforms versus Non-Reformers**

Notes: Each column displays estimated reform impacts on abortion related morbidity based on two-way FE models following equation 1 (panel A) and 2 (panel B), however now only for a specific demographic group (quinquennial ages in columns 1-6, and insurance coverage status in columns 7-8). All additional details follow notes to Table 2. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [34].
Table A18: Heterogeneity in DD Estimates by Age and Insurance Coverage – Haemorrhage in Early Pregnancy

| Age Groups | Insurance Coverage |
|------------|--------------------|
| 15–19      | (1)                |
| 20–24      | (2)                |
| 25–29      | (3)                |
| 30–34      | (4)                |
| 35–39      | (5)                |
| 40–44      | (6)                |
| Yes        | (7)                |
| No         | (8)                |

**Panel A: ILE versus Non-Reformers**

Post-ILE Reform (DF)  
-0.018***  -0.020*  -0.018**  -0.011*  -0.007**  -0.001  -0.015**  0.002
(0.007)   (0.011)  (0.009)   (0.007)  (0.004)  (0.001)  (0.007)  (0.002)
Observations  2,340  2,340  2,340  2,340  2,340  2,340  2,340  2,340
Mean of Dependent Variable  0.056  0.073  0.058  0.038  0.020  0.005  0.023  0.017

**Panel B: Regressive Reforms versus Non-Reformers**

Post-Regressive Law Change  
-0.003  -0.005  -0.003  -0.001  -0.000  -0.001  -0.004  0.002
(0.005)  (0.007)  (0.006)  (0.004)  (0.002)  (0.001)  (0.004)  (0.003)
Observations  5,580  5,580  5,580  5,580  5,580  5,580  5,580  5,580
Mean of Dependent Variable  0.054  0.072  0.056  0.037  0.019  0.005  0.021  0.017

Notes: Each column displays estimated reform impacts on haemorrhage early in pregnancy based on two-way FE models following equation 1 (panel A) and 2 (panel B), however now only for a specific demographic group (quinquennial ages in columns 1-6, and insurance coverage status in columns 7-8). All additional details follow notes to Table 2. *p < 0.10; **p < 0.05; ***p < 0.01. Referenced on page [34].
Figure A19: Estimated Impacts by Age Groups Among Young Women

Notes: Figure replicate estimates from Table 2, however now for each yearly age group between 15–25 years. In each case, specifications follow those documented in Panel A of Table 2 (indicated by hollow circles) and Panel B of Table 2 (shaded squares), working only with the proportion of women of that particular age suffering the indicated morbidity outcomes. Each specification is weighted by the population of women of this age. All additional details follow equations 1-2. Referenced on page [35,35].

(a) Haemorrhage Early in Pregnancy

(b) Abortion Related Morbidity
Table A19: Weights and Estimates from the Goodman-Bacon (2018) Decomposition

| Panel A: Haemorrhage Morbidity | Weight | Estimate |
|--------------------------------|--------|----------|
| Earlier Treated vs. Later Control | 0.032  | 0.005    |
| Later Treated vs. Earlier Control | 0.039  | -0.002   |
| Treated vs. Never Treated        | 0.929  | -0.004   |
| Difference-in-difference Estimate | 0.003  |          |

| Panel B: Abortion Related Morbidity | Weight | Estimate |
|-----------------------------------|--------|----------|
| Earlier Treated vs. Later Control | 0.032  | 0.009    |
| Later Treated vs. Earlier Control | 0.039  | -0.007   |
| Treated vs. Never Treated         | 0.929  | -0.008   |
| Difference-in-difference Estimate |        | -0.007   |

| Panel C: Fertility | Weight | Estimate |
|--------------------|--------|----------|
| Earlier Treated vs. Later Control | 0.045  | -0.103   |
| Later Treated vs. Earlier Control | 0.038  | 0.085    |
| Treated vs. Never Treated        | 0.917  | -0.195   |
| Difference-in-difference Estimate |        | -0.180   |

Notes: The Goodman-Bacon (2018) decomposition above displays the weights and components making up the global “single coefficient” DD model where treatment refers to states adopting regressive abortion policies. Decompositions are documented for haemorrhage and abortion morbidity (panels A and B), and for fertility (panels C) where all models follow specification 2. For the decomposition, each components’ weight is given along with the point estimate for this comparison. The global estimate is displayed at the foot of each panel. Each of these components is statistically insignificant at the 95% level. A unit-by-unit decomposition is given in Figure 5 (morbidity) and Figure A20 (fertility). Referenced on page [35,36,36,A38,A38].
Figure A20: Goodman-Bacon (2018) Decomposition Based on 2x2 Difference-in-Difference Models for Birth Rates

Notes: Figures document the Goodman-Bacon decomposition into a series of $2 \times 2$ difference-in-differences models depending on the type of comparison unit. Here the “treatment” refers to the passage of a regressive abortion law, and the outcome is the birth rate per 1,000 women. The passage of the ILE reform occurred at a single moment in time, and as such, decompositions need not be performed. The global decomposition is given in Table A19. Referenced on page [35,A38].
Table A20: The Effect of the Abortion Reform on Reported Sexual Behaviour (Panel Specification)

|                        | (1) Modern Contracep Knowledge | (2) Any Contraception | (3) Modern Contraception | (4) Num of Sex Partners |
|------------------------|--------------------------------|-----------------------|--------------------------|-------------------------|
| ILE Reform             | 0.002                          | -0.012                | -0.013                   | -0.111                  |
|                        | (0.276)                        | (0.914)               | (0.901)                  | (0.776)                 |
| Regressive Law Change  | -0.009                         | 0.041                 | 0.014                    | 0.267                   |
|                        | (0.304)                        | (0.492)               | (0.814)                  | (0.064)                 |
| Observations           | 10007                          | 10007                 | 10007                    | 10007                   |
| R-Squared              | 0.889                          | 0.568                 | 0.558                    | 0.531                   |
| Mean of Dependent Variable | 0.999                          | 0.569                 | 0.610                    | 1.418                   |

Notes: Each column presents a separate regression of a contraceptive or sexual behaviour variable on abortion reform measures, household fixed effects, year fixed effects and time-varying controls. p-values are presented below coefficients in parentheses. Referenced on page [39].

Table A21: Summary Statistics, MxFLS data on women aged 15-44

|                        | (1) Mexico City | (2) Regressive States | (3) Rest of Mexico | (4) Full Country |
|------------------------|-----------------|-----------------------|--------------------|------------------|
| Contraception knowledge| 0.991           | 0.997                 | 1.000              | 0.998            |
|                        | (0.094)         | (0.051)               | (0.011)            | (0.044)          |
| Use modern method      | 0.676           | 0.589                 | 0.578              | 0.590            |
|                        | (0.469)         | (0.492)               | (0.494)            | (0.492)          |
| Use any method         | 0.686           | 0.638                 | 0.617              | 0.632            |
|                        | (0.465)         | (0.481)               | (0.486)            | (0.482)          |
| Age marriage           | 20.535          | 19.603                | 19.643             | 19.668           |
|                        | (3.891)         | (3.825)               | (3.827)            | (3.834)          |
| Age first sex          | 18.807          | 18.957                | 18.998             | 18.965           |
|                        | (3.676)         | (3.593)               | (3.541)            | (3.577)          |
| Number of sex partners | 1.762           | 1.339                 | 1.354              | 1.367            |
|                        | (1.545)         | (1.088)               | (1.037)            | (1.101)          |
| Observations           | 187             | 5081                  | 3526               | 8794             |

Notes: Data on household decision making and sexual behavior is obtained from the Mexican Family Life Survey (MxFLS), which was conducted in 2002-2003, 2005-2006 and 2009-2012. The sample consists of women aged 15-44 who were interviewed in all three rounds, and hence form the panel data sample. Panel A presents summary statistics from household decision making module and Panel B from the reproductive health module. Mean values are displayed with standard deviations in parentheses. Regressive states are those which ever had a regressive law change posterior to 2008. Referenced on page [39,A44].
Table A22: The Effect of the Abortion Reform on Reported Sexual Behaviour (Repeated Cross-Section Specification)

|                      | (1)                     | (2)                     | (3)                     | (4)                     |
|----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                      | Modern Contracept Knowledge | Any Contraception | Modern Contraception | Num of Sex Partners |
| ILE Reform           | -0.011                   | -0.050                  | -0.057                  | -0.111                  |
|                      | (0.513)                  | (0.579)                 | (0.520)                 | (0.675)                 |
| Regressive Law Change| -0.002                   | 0.093                   | 0.065                   | 0.150                   |
|                      | (0.815)                  | (0.008)                 | (0.065)                 | (0.106)                 |
| Observations         | 10007                    | 10007                   | 10007                   | 10007                   |
| R-Squared            | 0.037                    | 0.027                   | 0.029                   | 0.033                   |
| Mean of Dependent Variable | 0.999                | 0.569                   | 0.610                   | 1.418                   |

Notes: Each column presents a separate regression of a contraceptive or sexual behaviour variable on abortion reform measures, year fixed effects and time-varying controls. p-values are presented below coefficients in parentheses. Referenced on page [39].
B Data Appendix

B.1 Maternal morbidity, maternal mortality and birth records

Complete data on morbidity and mortality are available for both the public and private health care systems in Mexico. Microdata on each hospital stay record the age and sex of the patient, the number of nights in hospital, as well as the principal diagnosis based on ICD-10 codes. There are approximately 165 million single records for the period of 2004-2015 accounting for 558 million nights of hospitalisation. Of these, 46 million visits and 84 million nights of hospitalisation are related to “Pregnancy, childbirth and the puerperium” (the ICD-10 “O” code). These data are universal and include all hospital visits in the country.32

Complete microdata are released in three different formats depending on the hospital type where treatment is provided. Hospitals in the public health system are administered by one of two types of providers. The first, the Mexican Secretariat of Health, is the ministry of health of the national government, and accounts for 47.0% of all hospital stays related to pregnancy, childbirth and the puerperium in the period under study. The second are hospitals run by public social security providers, principally the Mexican Institute of Social Security (IMSS), and the State Workers’ Institute of Security and Social Services (ISSSTE), which account for 29.5% of hospital stays in the ICD-10 “O” class. Finally, the remainder of hospital stays (23.5% of ICD-10 “O” cases) are treated in private hospitals. All private hospitals are required to provide information on each hospital stay in a standardised format, which is reported to the National Institute of Statistics and Geography (INEGI).

All public hospitalisation records are freely available as microdata files. However, data from hospitals run by the Secretariat of Health are available from 2000-2015 with the exact dates of hospitalisation, while data from hospitals run by social security providers are available only from 2004-2015, and only provide the year of hospitalisation. Our analysis of impacts of abortion reform on maternal health use these databases, where we compile state by year measures for key causes of morbidity for each year between 2004-2015. We also undertake monthly analysis with only data from hospitals administered by the Secretariat of Health given that these allow us to examine exact dates of hospitalisation, and hence generate state by year by month morbidity measures. Data from the private system are available for remote processing by request from INEGI. We follow a similar process with these microdata files, generating state by year values for the number of events in key morbidity classes defined below. However, while private hospitals provide information on the cause of hospitalisation, this is provided at a more highly aggregated level than public records. In particular, 10 different diagnosis classes are provided which map from the 76 diagnosis codes included in the three digit ICD-10 “O” codes. We document the mapping for each diagnosis in the public and private sector morbidity data in Appendix Table A3. While our principal analysis focuses on the public data given the lower level of aggregation available, we show that results in aggregate private-sector data are consistent with our main results.

We focus on two particular morbidity classes when examining the impact of abortion reform on female health outcomes. These are abortion-related causes, and haemorrhage early in pregnancy. The first outcome is typically examined when considering the impacts of unsafe abortion on women’s health in the medical and public health literature. It includes all forms of morbidity classified in ICD-10 codes O02-O08. A full discussion of this coding is provided in Singh and Maddow-Zimet (1999).

32The only exception is that these databases do not include standard hospital-stays for newborns following birth.
We additionally consider the impact of abortion reform on haemorrhage in early pregnancy. This is classified as haemorrhage prior to 20 weeks of gestation, and is coded from ICD-10 code O20. We focus on this outcome given that haemorrhage (along with incomplete abortion) is one of the two most common complications of unsafe abortion (World Health Organization, 2018; Gerdts et al., 2013), and given the widespread use of misoprostol as an abortifacient agent in clandestine abortions prior to the ILE reform in Mexico DF. While bleeding is a normal side-effect of misoprostol use as an abortive agent, when taken in unsupervised settings misoprostol can lead to heavy bleeding and haemorrhage (Pourette et al., 2018). Together these two outcomes cover 8 of the 76 ICD-10 code classes, but make up 11.1% of all maternal hospitalisations in the years under study, or 21.5% of maternal morbidity when excluding deliveries (refer to Appendix Table A3 for a full description of all maternal morbidity causes). With the exception of a ‘placebo’ test based on examining (late term) obstetric complications (ICD code O70-O75), the remainder of the ICD O codes are not examined as outcomes as it is unlikely that they are sequelae of abortion (for example eclampsia or pre-eclampsia), or are morbidities occurring in the puerperium period, and so unable to be sequelae of abortion.

Finally, measures of maternal mortality by state and year are generated from INEGI’s full mortality register. This register classifies maternal deaths according to ICD-10 codes. Mexico’s register of maternal deaths is recognised to be of high quality, with Mexico being classified as belonging to the “A-class” (World Health Organization, 1987) in the latest WHO report on maternal mortality trends. These data have had particular improvements from 2001, and as such, we restrict our period of analysis to 2001-2016 (see Schiavon et al. (2012b)).

Vital statistics for births in Mexico are compiled by INEGI based on birth registries completed by each parent or guardian at the civil registry, rather than being based on birth certificates issued at hospitals (as is the case, for example with the National Vital Statistics System in the USA and in various developing and emerging economies, like Chile and Argentina). The birth register is released once per year, containing all births registered in that year, as well as the year the birth occurred. In order to avoid problems of under-reporting, differential reporting over time, and double-reporting, we collate all birth registers between 2002-2016, and then keep all births registered within 4 years of the date of birth. This implies that we have complete birth registers based on birth years up to (and including) 2013. Unregistered births will only be a problem if rates of birth registration

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33 Accounts of self administered abortion in a case study in Brazil described in Grimes et al. (2006b), suggest that even though the use of Misoprostol as an abortifacient increased safety, hospitalisation due to haemorrhage was the outcome in cases of complications. They state: “Women would self-administer the drug orally and then seek medical assistance if the uterine bleeding did not stop” (Grimes et al., 2006b, p. 1916).

34 Formally, maternal deaths are defined by the WHO as “The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes”.

35 Using data from the 2010 census and birth records up until 2009, a recent (backward looking) analysis suggests that 93.4% of all births in Mexico were registered within 1 year of birth of the child, and in total, 94.2% of births are eventually registered at the national level (Instituto Nacional de Estadística y Geografía, 2012).

36 This allows us to record births even when they are registered months after birth (up to 36 months following the birth). Considering additional registration lags results in virtually unchanged estimates, as nearly all ever-registered births are registered within 4 years of birth. This is identical to the methodology employed by Mexico’s population authority in their calculation of official demographic trends (Consejo Nacional de Población, 2012).

37 While these birth registers are not universal, they are considered as being of very good quality compared to many other registry systems in developing economies. On average, dated estimates suggest that across all developing countries 41% of births are unregistered, and this figure for Latin America alone is 14% (UNICEF, 2005).
change differentially between regions of Mexico over the period under study. Empirical evidence on changes in birth records between 1999 and 2009 do not suggest a strong relationship between reform and non-reform areas, and changes in rates of coverage (Instituto Nacional de Estadística y Geografía, 2012).

The INEGI Birth Register contains information about the date of birth, actual birthplace and the official residency of the mother. In addition, information on maternal characteristics such as age, total fertility, educational attainment, marital status and employment status are recorded. In principal analysis we examine full state by month by year aggregate figures for each of the 32 states. Summary statistics are provided in Table A4. In additional specifications we consider birth rates for quinquennial age groups (15-19, 20-24, 25-29, 30-34, 35-39 and 45-49), where state aggregates are calculated in an identical manner, however subsetting only to births occurring to each women aged in the relevant group at the moment she gives birth.

B.2 Administrative records on criminal offenses, survey data on sexual behaviour and additional data sources

To examine De Jure sentencing of abortion, we use administrative records from Mexico’s Judicial Statistics on Penal Matters provided by INEGI. These records contain microdata registering each prison sentence handed down by the Mexico judiciary, the reason for the sentence, and the length of each sentence. It comprise the universe of judiciary decisions in the country based on the first legal judgment, and so does not include any subsequent appeals. We calculate prison sentence lengths from a categorical variable which records sentence lengths in binned windows (ranging from 0-2 months to > 20 years). These bin widths in microdata do not change over the period under study, and are identical in each state of the country. We consider all legal findings related to abortion impacting any individual. Trends in De Jure sentencing of abortion are presented in Appendix Figure A14.

For a small number of supplementary tests we use survey data from the Mexican Family Life Survey (MxFLS). The MxFLS is a nationally and regionally representative longitudinal data set that follows the Mexican population over time, covering various topics regarding the well-being of individuals including information on reproductive health. The survey was conducted in three waves during 2002-2003, 2005-2006 and 2009-2012.

We use the reproductive health module from the MxFLS which collects information on contraceptive knowledge and usage as well as information on sexual behavior such as the number of sexual partners. This sample consists of a panel of women aged 15-44 who completed the reproductive health questionnaire resulting in a total of 5,404 women. Summary statistics for reproductive health across regions are provided in Appendix Table A21) and show that average knowledge of at least any kind of modern contraceptive methods are generally high across all regions, while the average usage of any kind of contraceptives and modern contraceptives are higher in Mexico DF compared to other states.

We collect a number of additional variables measured at the level of state and year. These are

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38The MxFLS dataset is publicly available, developed and operated by the Iberoamerican University (UIA) and the Center for Economic Research and Teaching (CIDE) and also supported by multiple institutions in both Mexico (INEGI and National Institute of Public Health) and the USA (Duke University and Universities of California, Los Angeles).
either used to calculate rates of exposure for health and fertility outcomes (in the case of population), or as time-varying controls in regression analyses. The population of women aged from 15-49 by state is accessed from the National Population Council of Mexico (CONAPO). Time-varying controls are compiled to capture possible confounders of abortion policy, namely education, health investment and access, economic development, and women’s social inclusion. We collect measures for each state and year from 2001 to 2016 describing the proportion of each state living in poverty, the proportion of women who are economically active, the average level of completed schooling of the population, the average salary paid to full-time workers, the proportion of the population with access to health-care facilities, and the rollout of the national health insurance program Seguro Popular. Summary statistics for each variable as well as a list of sources are provided in Appendix Table A5. In the period under study we observe that state averages for years of schooling of adults is 8.5 years, 37% of women of working age are economically active, and the average salary is slightly over 5000 Mexican Pesos. These variables are merged by year and state to the morbidity, mortality, and birth data discussed earlier in this Section.

39Mexico’s General Health Law underwent a major reform in 2003, which intended to provide 50 million Mexican citizens lacking social security with subsidized and publicly financed health insurance. The core of this reform was the health insurance program Seguro Popular (SP). The “People’s Insurance” or Seguro Popular was launched in 2002, offering health service free of charge or subsidized to those without formal health insurance.
C Synthetic Control Estimates

The evidence in this paper is based on difference-in-difference and event study models. DD and event study estimates base the control group on all non-reform states. As a consistency check on these results and to ensure that estimates for the impact of the ILE reform are not driven by any pre-existing differential trends, we also compare outcomes in Mexico DF with those in a single synthetic control state. Although specifications 3 and 4 provide evidence in favour of parallel (pre-)trends if we can reject that each $\delta_j = \gamma_j = 0 \forall j < 0$, we may nonetheless be concerned with unobserved heterogeneity between treated and non-treated states. As an additional test and a plausibility check of estimates from equations 1 and 3 for the impact of the ILE reform only, we construct a synthetic control estimate to compare with Mexico DF. This procedure is particularly suitable to quantify the effect of the ILE reform in Mexico DF where there is a single treated unit, however not for the Regressive policy changers where a number of states adopt at different points in time. Our interest is to quantify the impact of the ILE reform, by comparing health outcomes in Mexico DF, the treated area, with outcomes in the rest of Mexico. This consists of determining the counterfactual state for a single treated state, following Abadie et al.’s (2010) synthetic control method where the single counterfactual “synthetic control” unit is generated based on a re-weighted pool of all the untreated states. This counterfactual is chosen to minimise the matrix norm based on the distance between average outcomes in the pre-treatment period, and the estimated ATT is inferred as the difference between the treated unit and the synthetic control unit in the post-treatment period. Our implementation of the synthetic control procedure is standard, as outlined in Abadie et al. (2010). The “donor” pool from which we calculate synthetic controls include each of the remaining states with the exception of neighbouring Mexico State, in which a non-trivial proportion of abortions were accessed by women. We have discussed spillover effects in Section 5.3 of this paper.

In order to conduct inference on the estimated treatment effect, we similarly follow Abadie et al. (2010), and undertake permutation inference. In graphical analysis, we calculate identical synthetic controls for the 30 untreated donor states, and generate placebo reform estimates assuming an identical reform timing. We then compare the true reform impact in each year with the impact for each of the placebo estimates in this year, to determine whether the estimated impact in the treated region is large compared with placebo cases where no substantial impact should be observed. When considering inference on a single ATT based on the mean post-treatment decline, we implement permutation inference comparing our main effect with the effect in all potential control states, and all potential treatment periods, as suggested in Abadie et al. (2010, p. 497). This provides a larger pool of placebo outcomes, giving greater precision to reported p-values resulting from permutation inference.

All results of this consistency check using synthetic control methods are provided in this Appendix.

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40In particular, the p-value associated with the ATT for the impact of ILE on health outcomes is calculated as:

$$p = \frac{\sum_{s=2}^{31} \sum_{t=2004}^{2014} 1\{|\hat{\alpha}_{s,t,2007}| \leq |\hat{\alpha}_{s,t}|\}}{N_{s,t}}$$

where $\hat{\alpha}_{s,t}$ refers to the average post-treatment difference between the treated (or placebo) unit and its synthetic control for state $s$ where the (placebo) treatment is assigned as occurring in year $t$. Here state $s = 1$ refers to Mexico DF and the true treatment year is $t = 2007$, and so $\hat{\alpha}_{1,2007}$ is the true treatment effect, while permutations of each state×year pair $(2, \ldots, 31) \times (2004 \ldots 2014)$ are placebo trials. $N_{s,t}$ refers to the total number of placebo permutations.
Morbidity Effects  In Figure A21 we present results based on a consistency check comparing rates of haemorrhage early in pregnancy and rates of morbidity for all abortion related causes in Mexico DF and in a synthetic control state. In Panel A we observe an immediate and sharp fall in rates of haemorrhage early in pregnancy, falling from approximately 2.3 cases per 1,000 fertile aged women to approximately 1.3 cases per 1,000 women. This agrees with DD and event study results documented above. Additionally, this supports claims from the medical literature that haemorrhage is one of the major drivers of maternal morbidity and mortality following unsafe abortions (World Health Organization, 2011), as the appearance of a legal and sterile alternative to clandestine abortion resulted in an immediate a 43% reduction in hospitalisations resulting from haemorrhage early in pregnancy. In the sub-set of data for which the month as well as the year of hospitalisation is recorded (those in hospitals administered by the Secretary of Health), we observe that this fall occurs precisely in the month that abortion was legalised, suggesting that changes in haemorrhage morbidity were immediate with the arrival of new legislation (see Figure 1).

In Panel B of Figure A21 we present trends in rates of morbidity due to abortive causes. In this case we observe a more gradual reduction in morbidity, with a clear difference 4 years post-reform. In longer trends from public hospital data displayed in Appendix Figure A4, descriptive figures do suggest that this was a turning point in Mexico DF, with a peak in 2008, after a steady increase from 2000, and then a steady decline in the total number of cases of hospitalisation up until 2015. In the case of abortion morbidity, as noted in the paper, it is important to highlight that the procedure used for abortions realized under the auspices of ILE has changed over time, from a baseline rate of only 25% medical abortions versus 75% surgical, to around 75% medical abortion by 2011. The large rise in medical abortion has both improved the safety of the program and enabled for the high demand for elective abortion to be met.

In Figure A23 we present a visual representation of permutation inference for synthetic control estimates following Abadie et al. (2010). In the left-hand panel, we compare the difference between haemorrhage morbidity in Mexico DF and its synthetic control with placebo differences in each other state in Mexico compared to its own synthetic control. In the first post-reform year, the true estimate exceeds all other placebo iterations, and this largely remains to be true in subsequent years, although from 5 years post-reform a number of more extreme outcomes are observed in certain (generally smaller) states. To calculate an exact permutation p-value, we follow the state and year permutation procedure, generating the null distribution displayed in Appendix Figure A24. A two-tailed test suggests a p-value of 0.09, and a one tailed test suggests a p-value of 0.06, respectively implying that only 9% of placebo outcomes result in an average post-placebo change which is more extreme than the true post-treatment change in D.F, and only 6% of placebos have a larger reduction. In the right-hand panel of Figure A23 we observe similar placebo estimates for abortion related morbidity. In line with the slower-reduction in abortion-related morbidity, we do not observe that the outcome in Mexico DF is more extreme than all placebo outcomes until multiple years post-reform. Only in 2014 and 2015 is the difference more extreme in the true treated state than each placebo iteration. Complete randomization inference similarly suggests that average treatment effects over the whole reform period are less extreme than in the case of haemorrhage. Specifically, two-tailed tests suggest a p-value of 0.19, or 0.087 in the case of one-tailed tests (Appendix Figure A25).

Birth Rates  The difference between outcomes in Mexico DF and the synthetic control state are documented in Figure A26. Here we observe that while there was a downward trend in birth rates
in DF including prior to the reform, synthetic control results suggest that this decline accelerated following the implementation of ILE in 2007 when comparing Mexico DF with the synthetic control state. Figure A26a shows the trend in Mexico DF (solid line) as compared to the synthetic control (dashed line), where the synthetic control is chosen to minimise the RMSE in the difference between these two rates prior to the reform. The fertility rates in Mexico DF are substantially below those of the synthetic control, and appear to diverge over time. The average difference in rates of birth per 1,000 women over the time-period under study is 6.8 births (comparable to the DD results discussed above), and this difference is as large as 15 births per 1,000 women 6 years following the ILE reform. When cast in terms of the average fertility rates of Mexico DF in the pre-reform period (89 births per 1,000 women), this accounts for approximately a 7.5% reduction.

In Figure A26b, we compare the synthetic control estimates for Mexico DF with a series of placebo reforms for each of the remaining 30 states to determine whether the estimated impacts on morbidity are relatively large compared with contexts in which a zero impact would be expected. In initial years, particularly in 2008, we do not observe that outcomes in Mexico DF are extreme when compared to placebo cases, and so cannot suggest an immediate statistically significant effect. However, in general we observe that over time, differences in Mexico DF become more extreme than all placebo outcomes. From 4 years post-reform, the difference between Mexico DF and its synthetic control is larger in absolute terms than any of the 30 placebo changes. In Appendix Figure A28 we compare this mean outcome with a null distribution based on permutations of treatment by state and year. We observe that the outcome observed in Mexico DF is extreme with respect to the null distribution. Only 4.2% of placebo iterations have a more extreme outcome than that observed in Mexico DF following the ILE reform, and this falls to 0.3% if considering only those which suggest a larger reduction than in Mexico DF (corresponding to two- and one-tailed p-values of 0.042 and 0.003 respectively).

**Policy Spillovers with a Synthetic Control** Finally, we return to consider the possibility of spillovers from the ILE reform to nearby states where some access to abortion was observed (Mexico State, Hidalgo and Morelos), comparing these states to their own synthetic control state. These are presented in Table A23. Full graphical output and inference is documented in Figures A29, A30, and A31. For comparison we present synthetic control estimates from Mexico DF from Figure A26 (births) and Figure A21 (morbidity). In each case, the synthetic control is chosen from among all remaining states (ie all states except for Mexico DF, Mexico State, Morelos and Hidalgo). Along with estimates, p-values are presented, which quantify the proportion of placebo iterations resulting in more extreme estimates than the difference between the state in interest and its synthetic control. Here, placebos are all permutations of donor states and years. In each of the three non-DF states where the largest proportion of abortions were performed, no significant impact was observed on rates of birth, or maternal morbidity. Point estimates are both considerably smaller in magnitude to those from Mexico DF (the largest is a reduction of 2 births per 1,000 women in the state of Morelos), and p-values all suggest little evidence to reject null hypotheses of no spillover impacts of reforms on these outcomes in this time period.

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41This is in line with a general trend in declining fertility across the country, which began in the 1960’s or 1970’s depending on the state (Tuiran et al., 2004).
Figure A21: Morbidity Outcomes in Mexico DF and a Synthetic Control Group

(a) Haemorrhage Early in Pregnancy

(b) Abortion Morbidity

(c) Haemorrhage Early in Pregnancy

(d) Abortion Morbidity

Notes: Left-hand panel displays all morbidity classified as ICD codes O02-O08 (for reasons relating to abortion). Right hand panel displays morbidity for haemorrhage early in pregnancy (prior to week 20 of gestation). In each case synthetic controls are based on a pool of the 30 other states of Mexico (excluding Mexico DF and Mexico State) in the top row (panels a and b) and based only states which do not subsequently implement a regressive reform in the bottom row (panels c and d). All synthetic controls are selected based on rates of abortion morbidity in all pre-reform years. Morbidity is per 1,000 women aged 15-49 residing in the state. The weighting of states to form the synthetic control in each panel is displayed in Figure A22.
Figure A22: Synthetic Control Weights for Morbidity Outcomes

(a) Haemorrhage Early in Pregnancy

(b) Abortion Morbidity

(c) Haemorrhage Early in Pregnancy

(d) Abortion Morbidity

Notes: The composition of each synthetic control is displayed, where bars refer to the weight given to each state. Weights are greater than or equal to 0 for each state, and sum to 1 over all states. The weights correspond to each panel displayed in Figure A21. Refer to notes to Figure A21 for differences between panels.

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Figure A23: Inference: The Impact of Abortion Reform on Maternal Morbidity

Notes: Inference for synthetic control estimates of the impact of the ILE reform on morbidity based on placebo permutations are displayed. Each panel displays the difference between Mexico DF and its synthetic control (as a thick solid line), and all other placebo permutations, where the remaining states are considered as treated in 2006, and their synthetic control is determined based on an identical procedure as for Mexico DF. These are displayed as thin dashed lines. In the top row, all other states with the exception of Mexico are considered as part of the pool of placebos, and in the bottom row, only states which did not implement a subsequent regressive reform are considered as placebos.
Figure A24: Complete Randomization Inference for Synthetic Control: Haemorrhage Morbidity

![Graph](attachment:image1)

(a) Null Distribution based on Randomization Inference

(b) RMSPE from Placebo Synthetic Controls

Notes: Left-hand panel plots the null distribution of average synthetic control placebo estimates $\hat{\alpha}^*$, and the actual estimate as the vertical dashed line. The actual estimate in this case is $\hat{\alpha} = -0.906$. Each placebo estimate is generated from a synthetic control permutation where the placebo-treatment state is one of the 30 non-ILE states, and the treatment year is one of the years from 2005-2014. Full permutations for each state and year combination are generated. The right-hand panel plots the RMSPE associated with each synthetic control procedure. When considering trimmed p-values, we trim the sample at RMSPE < 0.4 to avoid cases where the synthetic control does not re-create pre-reform averages. Untrimmed p-values are based on the full set of permutations.

Figure A25: Complete Randomization Inference for Synthetic Control: Abortion Related Morbidity

![Graph](attachment:image2)

(a) Null Distribution based on Randomization Inference

(b) RMSPE from Placebo Synthetic Controls

Notes: Refer to notes to Appendix Figure A24. An identical procedure is followed, however now using abortion related morbidity as the outcome instead of haemorrhage early in pregnancy. The actual estimate in this case is $\hat{\alpha} = -1.399$. The RMSPE trimming constant in this case is set at 2 when trimmed p-values are displayed.
Figure A26: Fertility in Mexico DF and a Synthetic Control Group

Notes: Left-hand panel displays birth rates per 1,000 women aged 15-49 in Mexico DF (solid line), and a synthetic control formed from the remaining 30 states (excluding Mexico DF and Mexico State) in the top row (panels a) and formed only using states which did not implement a subsequent regressive reform in the bottom row (panel c). The synthetic control is chosen based on birth rates in all pre-reform years (2001-2006). The right hand panel displays the difference between Mexico DF and its synthetic control (thick solid line), and other placebo permutations, where the remaining states are considered as treated in 2006 (panel b) or where only non-regressive states are considered as treated (panel d), and their synthetic control is determined based on an identical procedure as in Mexico DF.
Figure A27: Synthetic Control Weights for Birth Rates

Notes: The composition of each synthetic control in Figure A26 is displayed, where bars refer to the weight given to each state. Weights are greater than or equal to 0 for each state, and sum to 1 over all states. The weights correspond to panels a and c in Figure A26.
Figure A28: Complete Randomization Inference for Synthetic Control: Fertility Rates

(a) Null Distribution based on Randomization Inference

(b) RMSPE from Placebo Synthetic Controls

Notes: Left-hand panel plots the null distribution of average synthetic control placebo estimates $\hat{\alpha}^*$, and the actual estimate as the vertical dashed line. The actual estimate in this case is $\hat{\alpha} = -7.009$. Each placebo estimate is generated from a synthetic control permutation where the placebo-treatment state is one of the 30 non-ILE states, and the treatment year is one of the years from 2002-2012. Full permutations for each state and year combination are generated. The right-hand panel plots the RMSPE associated with each synthetic control procedure. When considering trimmed p-values, we trim the sample at RMSPE < 5 to avoid cases where the synthetic control does not re-create pre-reform averages. Untrimmed p-values are based on the full set of permutations.
Table A23: Synthetic Control Estimates and Inference on Spillover Effects

|                          | Births          | Abortion Morbidity | Haemorrhage Morbidity |
|--------------------------|-----------------|--------------------|-----------------------|
|                          | Estimate        | p-value            | Estimate              | p-value |
| **Main Synthetic Control Estimate** |                 |                    |                       |         |
| Mexico DF                | -7.009 [0.039]  | -1.399 [0.190]     | -0.906 [0.090]        |         |
| **Synthetic Control Estimate for Spillover States** |                 |                    |                       |         |
| Mexico State             | -1.741 [0.545]  | 0.333 [0.741]      | 0.559 [0.200]         |         |
| Morelos                  | -1.764 [0.545]  | 0.749 [0.470]      | 0.118 [0.781]         |         |
| Hidalgo                  | -0.182 [0.939]  | -0.679 [0.500]     | -0.264 [0.519]        |         |

Notes: Each point estimate refers to the average post-treatment difference between each state and its synthetic control, and p-values are calculated using permutation inference described in Section 4. A full display of each synthetic control estimate and permutation inference is provided in Appendix Figures A29 (Mexico States), A30 (Morelos) and A31 (Hidalgo).
Figure A29: Synthetic Control Estimates for Spillovers: Mexico State

Notes: Left-hand panels present plots of the difference between outcomes in Mexico State and similar differences between placebo states and their synthetic controls. Right hand plots compare average post-treatment differences between Mexico State and its synthetic control with a null distribution constructed permuting treatment over each donor state and time period. Panels (a) and (b) are for birth rates, (c) and (d) for abortion morbidity, and (e) and (f) for haemorrhage morbidity.
Figure A30: Synthetic Control Estimates for Spillovers: Morelos

(a) Birth Rates: Inference by State

(b) Birth Rates: Inference by State and Time

(c) Abortion Morbidity: Inference by State

(d) Abortion Morbidity: Inference by State and Time

(e) Haemorrhage Morbidity: Inference by State

(f) Haemorrhage Morbidity: Inference by State, Time

Notes: Refer to notes to Appendix Figure A29. All details are identical, however now results are displayed for the state of Morelos.
Figure A31: Synthetic Control Estimates for Spillovers: Hidalgo

(a) Birth Rates: Inference by State

(b) Birth Rates: Inference by State and Time

(c) Abortion Morbidity: Inference by State

(d) Abortion Morbidity: Inference by State and Time

(e) Haemorrhage Morbidity: Inference by State

(f) Haemorrhage Morbidity: Inference by State, Time

Notes: Refer to notes to Appendix Figure A29. All details are identical, however now results are displayed for the state of Hidalgo.