

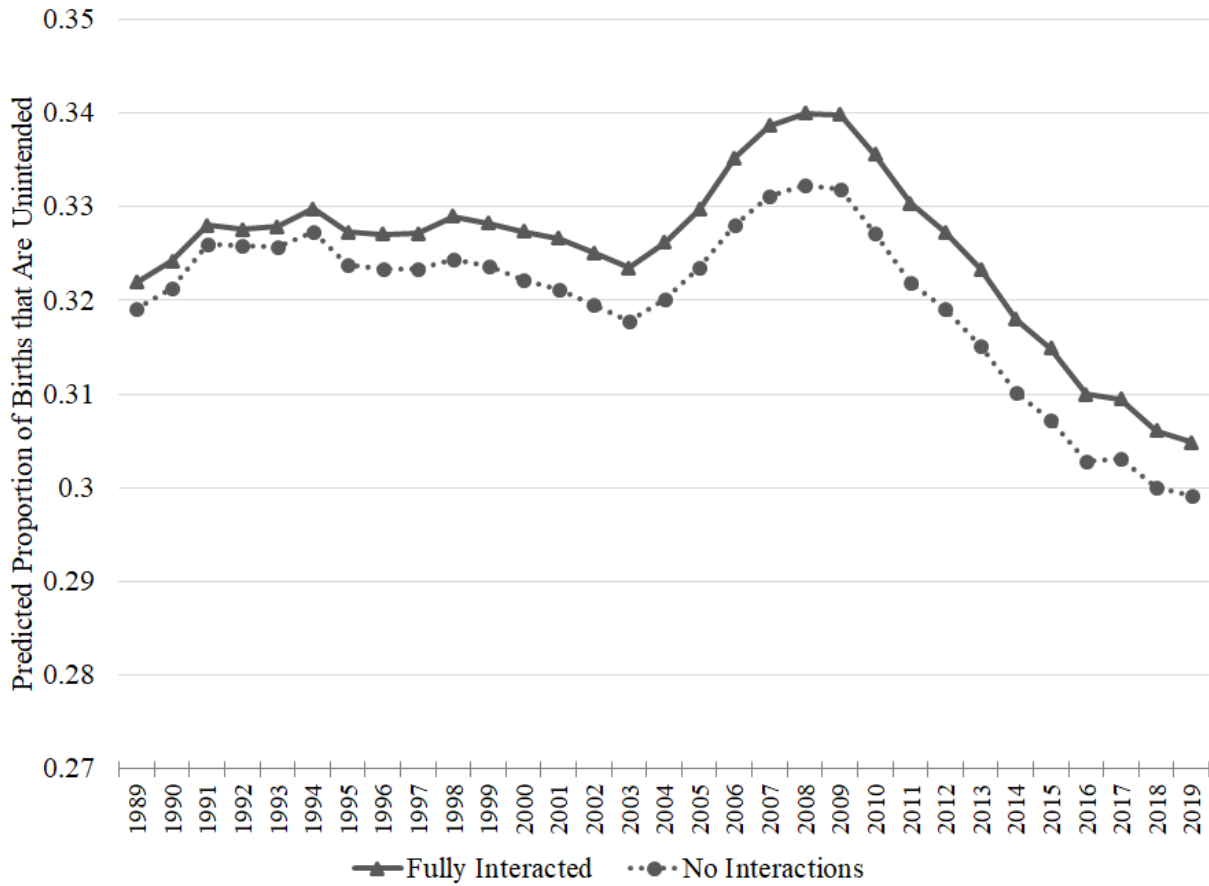
The Great Recession's Baby-less Recovery: The Role of Unintended Births

Online Appendix

Kasey Buckles, Melanie Guldi, and Lucie Schmidt

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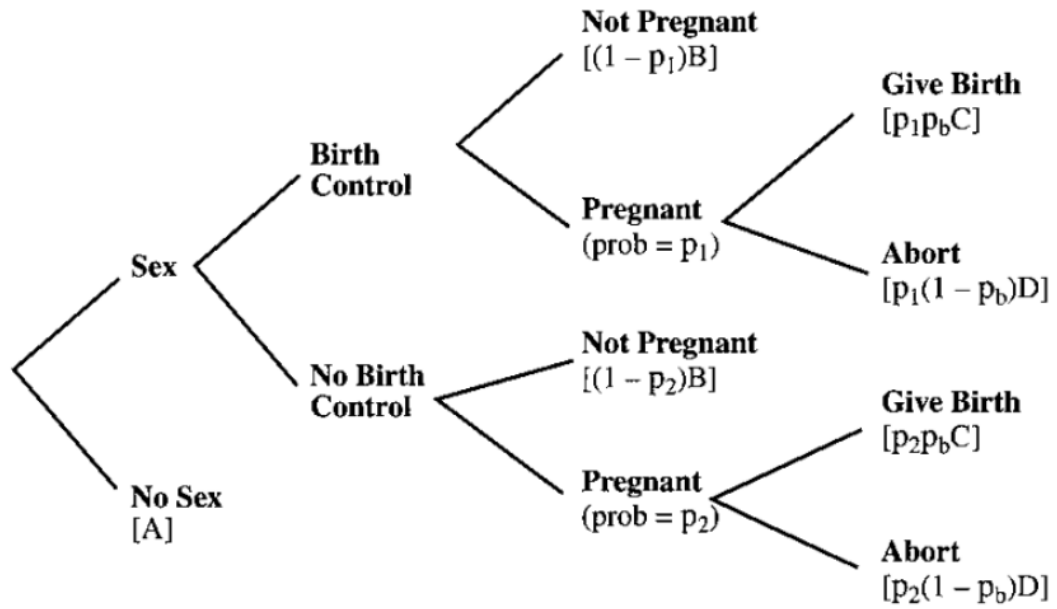
Online Appendix



Appendix Figure 12

Predicted Births that are Unintended, 1989-2019

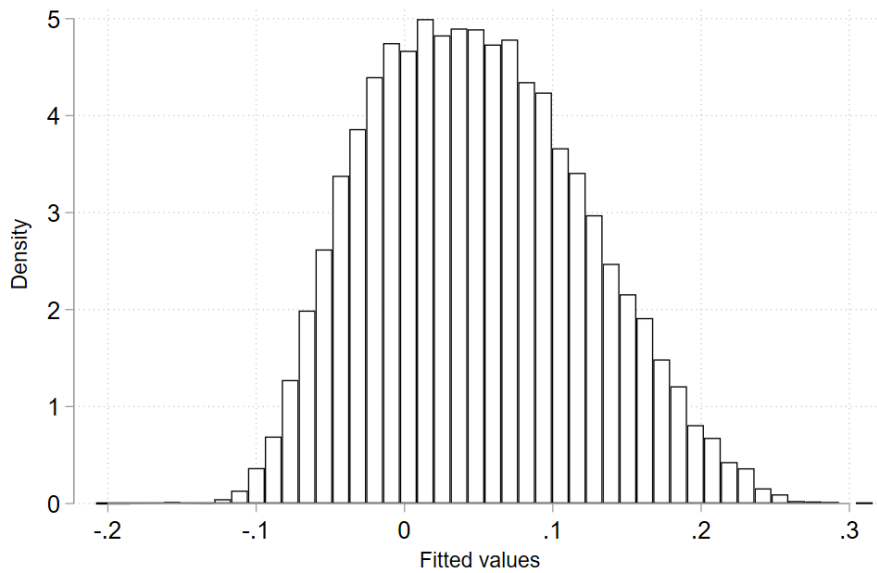
Notes: The predicted fraction and number of unintended births in each year are estimated using the characteristics of women giving birth in that year in the Natality Detail Files and holding the “returns” to each characteristic constant at the level estimated using the 2002 NSFG. This figure is analogous to Figure 4A, but allows a PPU to be constructed for 2017-2019 by using the National Center for Vital Statistics’ estimates of the percent of births that are married in these years.



Appendix Figure 13

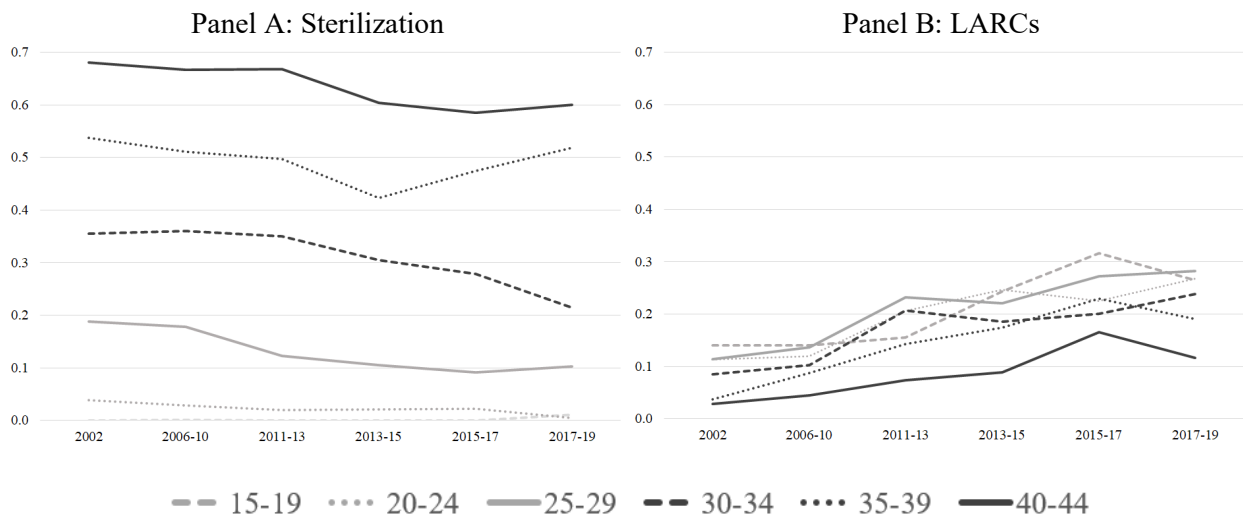
Fertility Decision Tree

Notes: Figure 4.9 from Levine (2001).



Appendix Figure 14
Distribution of Predicted Probability of Unintended Births

Notes: Figure shows distribution of predicted values from estimating Equation (2), using the 2002 to 2017-19 Cycles of the NSFG. There are 40,822 observations in the sample.



Appendix Figure 15
Fraction of Women Using Highly Effective Methods of Contraception, by Age

Notes: Data are from the indicated NSFG Cycle. Sample is limited to women currently using a method of contraception.

**Appendix Table 2:
Model Used to Predict Whether a Birth Was Unintended in Main Specification**

	Coefficient	Standard Error	Significance
Age			
16	-0.29630762	(0.329)	
17	0.14861973	(0.147)	
18	-0.01904884	(0.196)	
19	0.16013741	(0.182)	
20	-0.30439553	(0.176)	*
21	-0.25500390	(0.200)	
22	-0.34625518	(0.209)	*
23	-0.22749132	(0.208)	
24	-0.57283258	(0.229)	**
25	-0.67663801	(0.203)	***
26	-0.63630593	(0.189)	***
27	-0.26852053	(0.213)	
28	-0.09141662	(0.221)	
29	-0.35330534	(0.204)	*
30	-0.16574039	(0.242)	
31	-0.73559332	(0.175)	***
32	-0.12424993	(0.303)	
33	-0.42765811	(0.299)	
34	-0.06159627	(0.255)	
35	-0.57073045	(0.261)	**
36	-0.42729795	(0.340)	
37	-0.03850709	(0.399)	
38	-0.60266221	(0.420)	
39	-0.65244031	(0.221)	***
40	0.00217201	(0.308)	
41	0.20488353	(0.318)	
42	-0.14479572	(0.335)	
43	0.12480457	(0.252)	
Married	-0.25334057	(0.343)	
Black Non-Hispanic	0.61917406	(0.345)	*
Hispanic	-0.66416013	(0.258)	**
Other	0.10646714	(0.120)	
Metro Area	-0.74180824	(0.210)	***
Parity			
2	-0.84041768	(0.106)	***
3	0.10429513	(0.284)	

4	0.16031113	(0.286)	
5	0.28643727	(0.285)	
6	0.36196315	(0.319)	
7	-0.20291086	(0.356)	
8	0.18700753	(0.388)	
9	0.12308785	(0.436)	
Married x Age Category			
16	0.00395051	(0.610)	
17	-0.38122368	(0.359)	
18	0.16616821	(0.373)	
19	-0.24074981	(0.350)	
20	-0.31742933	(0.343)	
21	-0.28200641	(0.344)	
22	-0.28094202	(0.347)	
23	-0.44437924	(0.342)	
24	-0.36257449	(0.351)	
25	0.04054082	(0.343)	
26	-0.04095369	(0.341)	
27	-0.40064850	(0.348)	
28	-0.52229470	(0.348)	
29	-0.28995714	(0.353)	
30	-0.53757149	(0.358)	
31	-0.09862825	(0.348)	
32	-0.56043929	(0.369)	
33	-0.17978761	(0.367)	
34	-0.39833340	(0.378)	
35	-0.14622593	(0.374)	
36	-0.41789252	(0.420)	
37	-0.07188244	(0.361)	
38	0.12291488	(0.470)	
39	-0.15497345	(0.349)	
40	-		
Married x Parity			
2	0.05451738	(0.070)	
3	0.34739649	(0.079)	***
Black x Age Category			
16	-0.18531182	(0.396)	
17	-0.85481548	(0.359)	**
18	-0.41484419	(0.354)	
19	-0.78826046	(0.359)	**
20	-0.76821738	(0.359)	**

21	-0.40569216	(0.354)	
22	-0.38258624	(0.364)	
23	-0.73352242	(0.356)	**
24	-0.46263224	(0.371)	
25	-0.01612565	(0.359)	
26	-0.36531913	(0.363)	
27	-0.28317708	(0.358)	
28	-0.46885222	(0.373)	
29	-0.54224360	(0.368)	
30	-0.35460675	(0.380)	
31	-0.22094247	(0.366)	
32	-0.50026762	(0.360)	
33	-0.43034956	(0.380)	
34	-0.69826961	(0.382)	*
35	-0.40676463	(0.429)	
36	-0.59051263	(0.419)	
37	-0.31595424	(0.385)	
38	0.38199532	(0.369)	
39	-0.18841070	(0.404)	
40	-0.85156912	(0.443)	*
Black x Parity			
2	0.05101810	(0.084)	
3	-0.02367523	(0.089)	
Hispanic x Age Category			
16	0.67691422	(0.375)	*
17	0.24383561	(0.292)	
18	0.43273330	(0.312)	
19	0.31279859	(0.294)	
20	0.44384992	(0.294)	
21	0.48341662	(0.302)	
22	0.51917946	(0.304)	*
23	0.32702839	(0.289)	
24	0.56398958	(0.299)	*
25	0.60362327	(0.290)	**
26	0.43912965	(0.296)	
27	0.16760634	(0.297)	
28	0.39331031	(0.295)	
29	0.58219457	(0.298)	*
30	0.53174508	(0.320)	*
31	0.50745833	(0.282)	*
32	0.52178377	(0.303)	*

33	0.48775864	(0.328)	
34	0.57937741	(0.318)	*
35	0.79652542	(0.338)	**
36	0.23609507	(0.309)	
37	0.80513835	(0.340)	**
38	0.93561512	(0.380)	**
39	0.41129428	(0.298)	
40	0.68632829	(0.372)	*
Hispanic x Parity			
2	0.16079697	(0.070)	**
3	0.08834905	(0.078)	
Other x Age Category			
16	-0.29576561	(0.401)	
17			
18	-0.29343960	(0.261)	
19	-0.56038791	(0.325)	*
20	-0.36173436	(0.254)	
21	-0.07241481	(0.232)	
22	0.06641641	(0.265)	
23	0.09758026	(0.441)	
24	0.43110564	(0.298)	
25	0.28853130	(0.276)	
26	-0.27619016	(0.233)	
27	-0.07029783	(0.201)	
28	-0.03175689	(0.228)	
29	0.10445122	(0.225)	
30	0.11261244	(0.204)	
31	0.18278016	(0.264)	
32	0.01816838	(0.262)	
33	-0.19292492	(0.251)	
34	-0.25533050	(0.267)	
35	0.11939384	(0.220)	
36	0.19916449	(0.349)	
37			
38			
39	0.14896376	(0.235)	
40	0.05122471	(0.289)	
Other x Parity			
2	-0.15958233	(0.106)	
3	-0.09863383	(0.122)	
Metro x Age Category			

16	0.79957682	(0.364)	**
17	0.76019365	(0.244)	***
18	0.71219206	(0.251)	***
19	0.69446689	(0.257)	***
20	0.93930656	(0.248)	***
21	0.84459662	(0.254)	***
22	0.84603983	(0.259)	***
23	0.82423180	(0.256)	***
24	0.76454711	(0.256)	***
25	0.75602984	(0.240)	***
26	0.73513025	(0.243)	***
27	0.63712770	(0.237)	***
28	0.63631064	(0.265)	**
29	0.67529488	(0.232)	***
30	0.56643885	(0.249)	**
31	0.76137006	(0.229)	***
32	0.56783497	(0.321)	*
33	0.52636057	(0.291)	*
34	0.27513370	(0.246)	
35	0.58646137	(0.243)	**
36	0.86436272	(0.269)	***
37	0.04779081	(0.437)	
38	0.35915959	(0.282)	
39	0.63860607	(0.240)	***
40	-0.22592646	(0.421)	
Metro x Parity			
2	-0.16077363	(0.063)	**
3	-0.06310333	(0.077)	
Parity 2 x Age Category			
16	1.06795156	(0.576)	*
17	0.97513992	(0.214)	***
18	0.76980227	(0.185)	***
19	0.84921926	(0.169)	***
20	0.84671366	(0.155)	***
21	0.86145908	(0.157)	***
22	0.84744072	(0.171)	***
23	1.00931406	(0.154)	***
24	1.20499623	(0.169)	***
25	0.82661080	(0.157)	***
26	0.94872701	(0.155)	***
27	1.00891793	(0.145)	***

28	0.88472813	(0.143)	***
29	0.81607264	(0.161)	***
30	1.05839276	(0.137)	***
31	0.93021250	(0.138)	***
32	1.00926733	(0.157)	***
33	0.90385413	(0.148)	***
34	1.25753558	(0.171)	***
35	0.96777076	(0.131)	***
36	1.14582419	(0.191)	***
37	0.89443219	(0.155)	***
38	0.75351280	(0.190)	***
39	1.01346087	(0.142)	***
40	1.21627414	(0.274)	***
Parity 3 x Age Category			
16	-0.40165541	(0.496)	
17	0.05042136	(0.279)	
18	-0.09037544	(0.290)	
19	-0.68308491	(0.357)	*
20	0.03695840	(0.312)	
21	-0.01006975	(0.288)	
22	-0.10854153	(0.301)	
23	-0.25340998	(0.289)	
24	0.01813391	(0.300)	
25	-0.13384181	(0.293)	
26	-0.16874014	(0.293)	
27	0.04065979	(0.281)	
28	-0.24604352	(0.279)	
29	-0.39475378	(0.278)	
30	-0.02111073	(0.281)	
31	-0.16004947	(0.277)	
32	-0.02298241	(0.287)	
33	-0.06358178	(0.285)	
34	0.10897955	(0.276)	
35	-0.30107972	(0.269)	
36	-0.07972424	(0.310)	
37	-0.18809687	(0.303)	
38	-0.26949221	(0.278)	
39	-0.28447014	(0.266)	
40			
Married x Black	-0.03868573	(0.077)	
Married x Hispanic	0.07538962	(0.071)	

Married x Other	-0.22705242	(0.130)	*
Married x Metro	0.20273784	(0.078)	***
Metro x Black	-0.09445468	(0.103)	
Metro x Hispanic	0.02144015	(0.085)	
Metro x Other	0.13210271	(0.109)	
Constant	0.89353287	(0.120)	***
Observations	2047		
R-squared	0.3711		

Notes: Table shows coefficients used to create the predicted fraction unintended in Figure 4A. Coefficients are from an OLS regression using data from the 2002 NSFG. The dependent variable is a binary indicator indicating that the pregnancy was either unwanted or occurred two years or more before the woman intended. The sample is limited to pregnancies ending in a live birth. Results are weighted by the NSFG final weights for the 2002 cycle. Standard errors are robust to heteroskedasticity. *, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels.

**Appendix Table 3:
R-Squareds and Pseudo R-Squareds for Models in Figure 7**

	<u>NSFG Cycle</u>					
	2002	2006-10	2011-13	2013-15	2015-17	2017-19
Unhappy	0.2969	0.2647	0.3359	0.3234	0.4289	0.3713
Unwanted	0.3211	0.2689	0.3712	0.3597	0.4012	0.3795
Not Trying	0.3023	0.2630	0.3509	0.3142	0.3935	0.3665
Too Soon	0.3562	0.3073	0.3852	0.4241	0.4693	0.3649
Unintended	0.3711	0.3144	0.4022	0.3904	0.4435	0.3465

	<u>NSFG Cycle</u>					
	2002	2006-10	2011-13	2013-15	2015-17	2017-19
Unhappy	0.2221	0.1668	0.2291	0.2160	0.2778	0.2186
Unwanted	0.2545	0.1671	0.2432	0.2397	0.2424	0.2582
Not Trying	0.2258	0.1552	0.2317	0.2140	0.2215	0.2402
Too Soon	0.2652	0.2101	0.2753	0.2848	0.2551	0.2462
Unintended	0.2818	0.2067	0.2790	0.2573	0.2517	0.2136

Notes: Table shows the R-squared or pseudo R-squared for sixty different models used to predicted birth intendedness in the NSFG—five definitions of pregnancy intendedness x six different NSFG cycles x two model choices (linear probability or probit). These models are used to produce the results in Figure 7.

**Appendix Table 4:
Model Used to Predict Whether a Woman Has Had an Unintended Birth**

	Coefficient	Standard Error	Significance
Age			
16	0.0060	(0.0162)	
17	0.0266	(0.0209)	
18	0.0898	(0.0246)	***
19	0.1646	(0.0299)	***
20	0.1685	(0.0264)	***
21	0.2223	(0.0308)	***
22	0.1898	(0.0248)	***
23	0.2305	(0.0286)	***
24	0.2060	(0.0280)	***
25	0.2279	(0.0321)	***
26	0.1863	(0.0358)	***
27	0.1211	(0.0205)	***
28	0.1769	(0.0330)	***
29	0.1439	(0.0250)	***
30	0.1304	(0.0245)	***
31	0.1335	(0.0230)	***
32	0.1235	(0.0221)	***
33	0.1373	(0.0259)	***
34	0.0912	(0.0198)	***
35	0.0825	(0.0205)	***
36	0.0958	(0.0231)	***
37	0.0758	(0.0178)	***
38	0.1109	(0.0286)	***
39	0.0700	(0.0153)	***
40	0.0453	(0.0142)	***
41	0.0609	(0.0151)	***
42	0.0647	(0.0239)	***
43	0.0457	(0.0145)	***
44	0.0575	(0.0166)	***
Years of Education			
10	0.0298	(0.0207)	
11	0.0038	(0.0233)	
12	-0.0181	(0.0163)	

13	-0.0473	(0.0183)	***
14	-0.0519	(0.0177)	***
15	-0.0947	(0.0185)	***
16	-0.0769	(0.0163)	***
17	-0.0861	(0.0191)	***
18	-0.0677	(0.0219)	***
19+	-0.0486	(0.0207)	**
Born Outside the U.S.	0.0293	(0.0109)	***
Mother's Education			
High School	-0.0098	(0.0111)	
Some College	-0.0047	(0.0134)	
College Degree+	-0.0056	(0.0132)	
Mother's Work Status			
Part Time	-0.0051	(0.0093)	
Both Full and Part Time	-0.0126	(0.0177)	
No Work for Pay	0.0061	(0.0085)	
Missing	-0.0267	(0.0564)	
Mother's Age at First Birth			
18-19	-0.0212	(0.0135)	
20-24	-0.0224	(0.0121)	*
25-29	-0.0374	(0.0134)	***
30+	-0.0268	(0.0176)	
Missing	-0.0034	(0.0269)	
Intact Home at 18	0.0243	(0.0088)	***
Race/Ethnicity			
Non-Hispanic White	-0.0082	(0.0125)	
Non-Hispanic Black	0.0305	(0.0149)	**
Other	0.0077	(0.0195)	
Parents Married at Birth			
No	-0.0089	(0.0124)	
Missing	-0.0655	(0.0231)	***
Age at Menarche			
10	-0.0184	(0.0288)	
11	-0.0093	(0.0271)	
12	-0.0069	(0.0267)	
13	-0.0091	(0.0268)	
14	-0.0016	(0.0278)	
15	-0.0048	(0.0300)	
16	-0.0003	(0.0377)	

17	0.0633	(0.0738)	
18	-0.0401	(0.0492)	
19	-0.0924	(0.0345)	***
21	0.0010	(0.0369)	
22	-0.0990	(0.0441)	**
Periods Not Yet Begun	-0.1227	(0.0468)	***
Missing	-0.0164	(0.0557)	
Religion Raised In			
Catholic	0.0198	(0.0131)	
Baptist	0.0115	(0.0141)	
Meth/Luth/Pres/Episc	0.0060	(0.0133)	
Fundamentalist	0.0284	(0.0211)	
Other Protestant			
Denom.	0.0280	(0.0223)	
Protestant, No Denom.	-0.0132	(0.0209)	
Other Non-Christian	-0.0087	(0.0151)	
Missing	0.0558	(0.0801)	
Constant	-0.0158	(0.0303)	
Observations	7483		
R-squared	0.0776		

Notes: Table shows coefficients used to create the predicted probability that a woman has had an unintended birth within the last 3 years, used in Figures 8-11. Coefficients are from an OLS regression using data from the 2002 NSFG Respondent file. The dependent variable is a binary indicator indicating that the woman had a birth within the last three years *and* that she described the birth as either unwanted or occurring two years or more before the woman intended. Results are weighted by the NSFG final weights for the 2002 cycle. Standard errors are robust to heteroskedasticity. *, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels.

Appendix Table 5: Characteristics of NSFG Respondents in Top and Bottom Quartiles of the Predicted Probability of an Unintended Birth

	Full Sample	Bottom Quartile	Top Quartile
Pr(UIB)	0.050	-0.032	0.159
UIB	0.075	0.018	0.212
Age	29.97	33.74	24.86
>HS Educ	0.507	0.679	0.263
Born Outside U.S.	0.143	0.099	0.199
Mom >HS	0.401	0.446	0.319
Mom Teen Birth	0.340	0.218	0.517
Intact Home at 18	0.653	0.821	0.471
Age at Menarche	12.570	12.588	12.510
Non-Hispanic White	0.657	0.832	0.421
Non-Hispanic Black	0.139	0.045	0.257
Non-Hispanic Other	0.056	0.051	0.057

Notes: Table shows summary statistics for women in the 2002 NSFG, for the full sample (n=7,643) and for those in the bottom (n=1,870) and top (n=1,871) quartiles of the distribution shown in Appendix Figure 14. “UIB” is an acronym for “unintended birth.”