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## **In a Down Economy, Fewer Births**

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## In a Down Economy, Fewer Births

By *Gretchen Livingston*

A sharp decline in fertility rates in the United States that started in 2008 is closely linked to the souring of the economy that began about the same time, according to a new analysis of multiple economic and demographic data sources by the Pew Research Center.

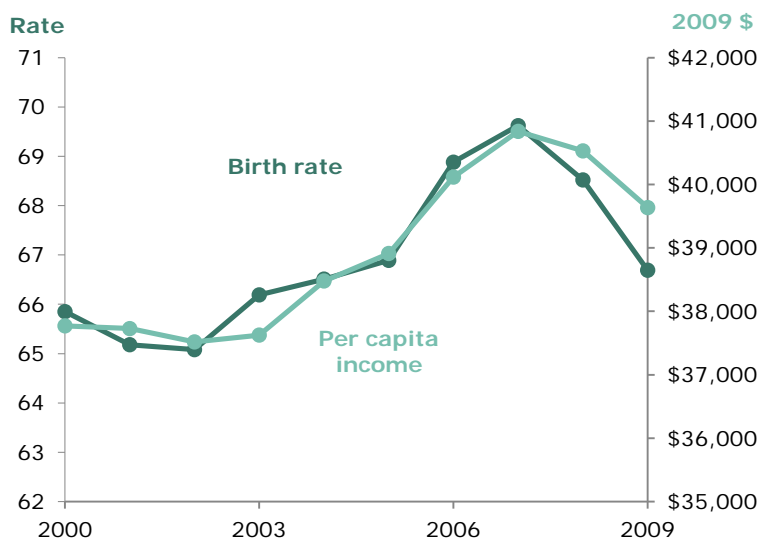
The year 2007 marked a record high number of births in the U.S.—4,316,233. Since that time, births have been declining, even as the U.S. population continues to grow. Preliminary data for 2009 indicate that the number of births dropped to 4,131,018—the lowest number since 2004. Provisional data show that in 2010 births numbered just over 4 million (4,007,000).<sup>1</sup>

A state-level look at fertility illustrates the strength of the correlation between lower birth rates and economic

distress. States experiencing the largest economic declines in 2007 and 2008 were most likely to experience relatively large fertility declines from 2008 to 2009, the analysis finds. States with relatively minor economic declines were likely to experience relatively small declines.

For example, North Dakota, which experienced one of the nation's lowest unemployment rates (3.1%) in 2008, was the only state to show even a slight increase (0.7%) in births from 2008 to

### U.S. Birth Rate and Per Capita Income Decline Since Recession Onset



Notes: Birth rate (general fertility rate) is the number of births per thousand women ages 15-44. Birth rate data for 2009 are preliminary.

Source: Statistics calculated using data from National Center for Health Statistics, U.S. Census Bureau and Bureau of Economic Analysis

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<sup>1</sup> In recent years provisional and preliminary birth data have come close to the final birth counts. For 2008 data, the [provisional estimates](#) equaled 99.98% of the final estimates, and the [preliminary estimates](#) equaled 100.08% of the final estimates.

2009. All other states and the District of Columbia experienced either no change, or declines, in births during that period.

These correlations are based on fertility trends calculated using data from the National Center for Health Statistics and the U.S. Census Bureau and economic trend data from six familiar indicators (per capita income, per capita gross domestic product, employment rate, unemployment rate, initial unemployment claims, and foreclosure rates) tracked by the U.S. Bureau of Labor Statistics and RealtyTrac.<sup>2</sup>

Since 2007, the U.S. fertility rate—which controls for variations in the size of the female population of childbearing age—has dropped markedly from 69.6 births per thousand women ages 15-44 to 66.7 births per thousand women ages 15-44 in 2009.

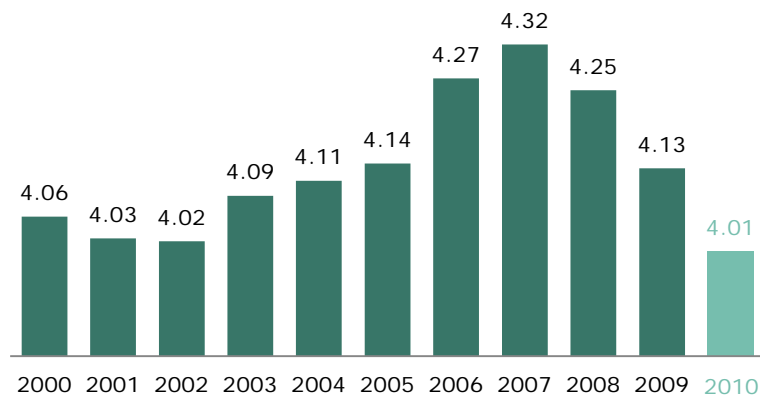
Provisional data for 2010 indicate a further drop to 64.7 births per thousand women ages 15-44.

The Pew Research Center analysis also finds evidence of an association between economic hard times and fertility declines by race and ethnicity. Hispanics, whose

employment levels and household wealth were particularly hard hit by the Great Recession, have experienced the largest fertility declines of the nation's three major racial and ethnic groups. Conversely, whites have experienced smaller economic hardships, and smaller declines in fertility. From 2008 to 2009, birth rates dropped by 5.9% among Hispanic women, while birth rates dropped 2.4% among black women and 1.6% among white women.

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### Since 2007, Total U.S. Births Have Declined Sharply *in millions*



Note: Birth data for 2009 are preliminary, and birth data for 2010 are provisional.

Source: National Center for Health Statistics

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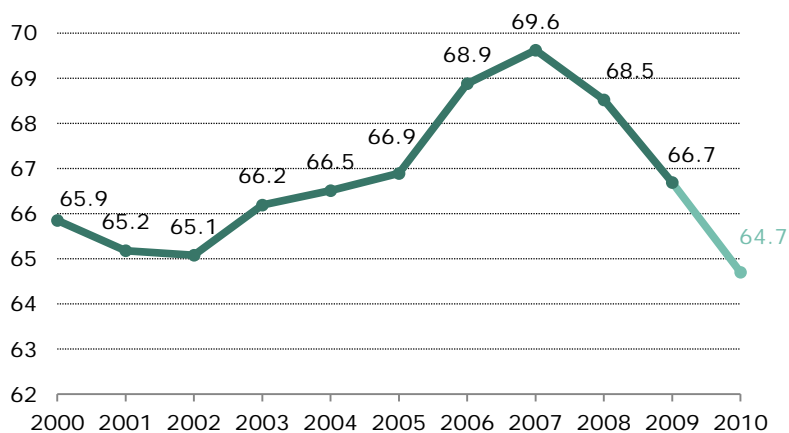
<sup>2</sup> An earlier [Pew Social & Demographic Trends report](#) analyzed the association of fertility and the economy for 25 states using 2008 fertility data.

## Fertility and the Recession

The official start of the U.S. economic recession was in December 2007, according to the National Bureau of Economic Research. However, the timing and magnitude of economic declines associated with the recession have varied markedly from state to state. For instance, per capita income in Nevada declined by 4.6% from 2007 to 2008, while in West Virginia, per capita income increased by 1.6%. And in states such as Arizona, per capita income began declining by 2007, while in states such as Alaska and Montana declines did not appear until 2009.

This research capitalizes on such across-state differences to examine whether the economic downturn is associated with the sharp fertility declines that the U.S. has experienced since 2007. Six of the seven economic indicators that the Pew Research Center analyzed were strongly linked to subsequent changes in fertility at the state level. In particular, changes in per capita personal income, per capita GDP, employment rate, unemployment rate and initial unemployment claims from 2007 to 2008 were closely related to changes in fertility rates occurring from 2008 to 2009, as were 2008 state-level foreclosure rates.<sup>3</sup> The change from 2007 to 2008 in the Home Price Index, an indicator of housing value, was not linked to subsequent fertility.

### Since 2007, U.S. Birth Rates Have Declined Dramatically



Note: Birth rate (general fertility rate) is the number of births per thousand women ages 15-44. Birth rate data for 2009 are preliminary, and birth rate data for 2010 are provisional.

Source: Statistics calculated using data from National Center for Health Statistics and U.S. Census Bureau

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<sup>3</sup> The correlation coefficients for the significant relationships between the 2008-2009 percent GFR change and six economic indicators were as follows: 2007-2008 percent change in per capita income (0.49); 2007-2008 percent change in per capita gross domestic product (0.31); 2007-2008 percent change in employment rate (0.33); 2007-2008 percent change in unemployment rate (-0.72); 2007-2008 percent change in first unemployment claims; and (-0.33); 2008 foreclosure rate (-0.51). Correlations for the change in per capita income; change in unemployment; and foreclosures were significant at the 0.01 level. All other correlations were significant at the 0.05 level.

In 48 of 51 states (a number that includes the District of Columbia), fertility declines occurred within one to two years of the start of economic declines (as indicated by the percent change in personal income per capita, and the percent change in the employment rate). This does not conclusively prove that the economic changes led to fertility changes. However, the timing is consistent with the time it might take people to act upon fertility decisions.

## Hispanics Hardest Hit by Recession, Show Biggest Fertility Declines

It is difficult to obtain reliable annual indicators of fertility and the economy at the state level by separate racial and ethnic groups. But an examination of national-level data shows that Hispanics, who have been hit the hardest in terms of employment and wealth, have also experienced the largest fertility declines since the onset of the recession. Conversely, the smaller birth rate declines among whites could reflect the fact that they were less hard hit by the recession than were Hispanics or blacks.

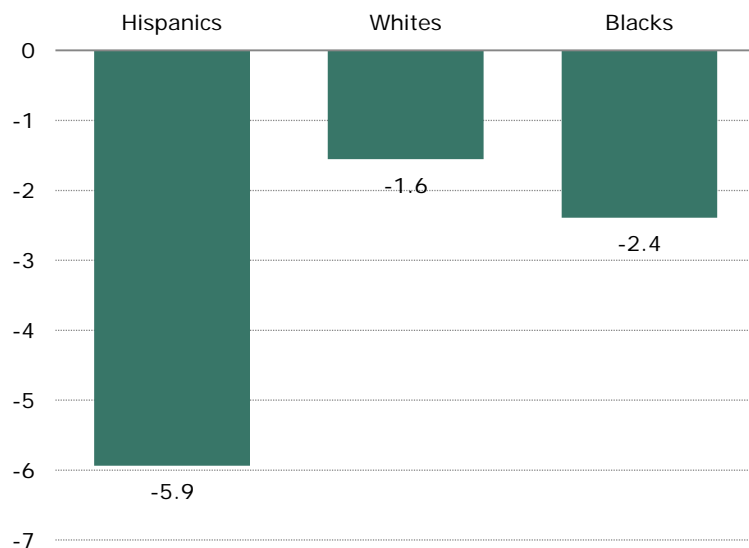
From 2008 to 2009, the birth rate among Hispanics dropped almost 6%. In comparison, blacks experienced a 2.4% decline, and whites

experienced a 1.6% decline. While Hispanics continue to have birth rates that are much higher than their non-Hispanic counterparts, the 2009 Hispanic birth rate of 93.3 births per 1000 women of childbearing age is the lowest rate since 1999.

The relatively large birth rate declines among Hispanics mirror their relatively large economic declines, in terms of jobs and wealth. From 2007 to 2008, the employment rate among Hispanics declined by 1.6 percentage points, compared with declines of 1.0 percentage points for blacks and 0.7 points for whites. The unemployment rate shows a similar pattern—

### Hispanics Experience Large Fertility Declines, 2008 to 2009

*% change in birth rate*



Notes: Birth rate (general fertility rate) is the number of births per thousand women ages 15-44. Birth rate data for 2009 are preliminary. Whites and blacks include non-Hispanics only.

Source: Statistics calculated using data from National Center for Health Statistics and U.S. Census Bureau

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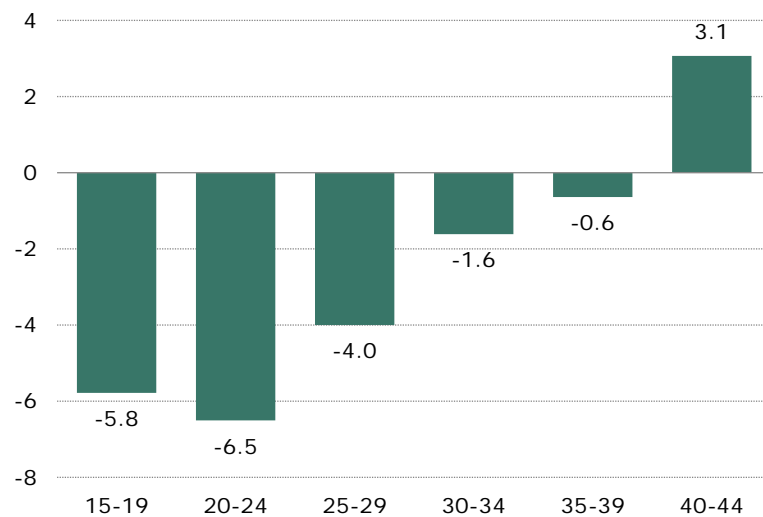
unemployment among Hispanics increased 2.0 percentage points from 2007 to 2008, while for blacks it increased 1.8 percentage points, and for whites the increase was 0.9 percentage points.<sup>4</sup> A recent [report](#) from the Pew Hispanic Center revealed that Hispanics have also been the biggest losers in terms of wealth since the beginning of the recession, with Hispanic households losing 66% of their median wealth from 2005 to 2009. In comparison, black households lost 53% of their median wealth and white households lost only 16%. From 2007 to 2008, there were no statistically significant differences by race and ethnicity in [per capita income](#).

## Fertility Delayed or Fertility Foregone?

It's typically quite difficult to determine if economic changes are causing fertility changes, since other social and cultural factors may also be at play, such as changes in women's labor force participation, contraceptive technology, and public policy ([Pison 2009](#)). However, there is historical evidence of a link between economic cycles and fertility in the U.S.—[Carl Haub](#) of the Population Reference Bureau points to both the Great Depression and the oil bust of the early 1970s as examples. Research examining fertility across multiple industrialized countries has also shown a link between economic declines and fertility declines ([Sobotka et al. 2011](#); [Goldstein et al. 2009](#)).

### Fertility Declines for All Women, Except Those Ages 40 and Older, 2008 to 2009

% change in birth rate



Note: Birth rate is the number of births per thousand women. Birth rate data for 2009 are preliminary.

Source: Statistics calculated using data from National Center for Health Statistics  
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Experts suggest that much of the fertility decline that occurs during an economic decline is postponement of childbearing and does not represent a decision to have fewer children ([Sobotka](#)

<sup>4</sup> Employment and unemployment statistics by race and ethnicity calculated using data from the Current Population Survey.

[et al. 2011](#); [Goldstein et al. 2009](#)). In other words, people put off having children during the economic downturn, and then catch up on fertility once economic conditions improve.

It's too early to know if fertility will bounce back as the U.S. economy recovers,<sup>5</sup> but preliminary evidence suggests that the fertility decline may indeed be driven by postponement. [Survey findings](#) from the Pew Research Center and vital statistics data have shown that the recession is more strongly associated with fertility declines among younger women, who presumably have the luxury of postponing fertility until better economic times prevail. Conversely, older women are less likely to say that they have postponed fertility due to economic declines. They are the only age group that has shown consistent, if not rising, fertility in recent years.

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<sup>5</sup> See Philip Cohen's [analysis of internet search trends](#) for an interesting interpretation of what may lie ahead for U.S. fertility in the near future.

## APPENDIX 1

Appendix Table 1  
Births, 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>U.S.</b>	4,058,814	4,025,933	4,021,726	4,089,950	4,112,052	4,138,349	4,265,555	4,316,233	4,247,694	4,131,018
Alabama	63,299	60,454	58,967	59,552	59,510	60,453	63,232	64,804	64,546	62,476
Alaska	9,974	10,003	9,938	10,086	10,338	10,459	10,996	11,052	11,442	11,325
Arizona	85,273	85,597	87,837	90,967	93,663	96,199	102,429	102,981	99,442	92,816
Arkansas	37,783	37,010	37,437	37,784	38,573	39,208	40,961	41,378	40,669	39,853
California	531,959	527,759	529,357	540,997	544,843	548,882	562,440	566,414	551,779	527,011
Colorado	65,438	67,007	68,418	69,339	68,503	68,944	70,751	70,809	70,031	68,627
Connecticut	43,026	42,648	42,001	42,873	42,095	41,718	41,820	41,660	40,399	38,896
Delaware	11,051	10,749	11,090	11,329	11,369	11,643	11,989	12,170	12,090	11,562
District of Columbia	7,666	7,625	7,498	7,619	7,933	7,971	8,523	8,864	9,130	9,044
Florida	204,125	205,793	205,579	212,250	218,053	226,240	236,802	239,165	231,445	221,391
Georgia	132,644	133,526	133,300	135,979	138,849	142,200	148,633	151,137	146,603	141,375
Hawaii	17,551	17,072	17,477	18,100	18,281	17,924	18,982	19,134	19,484	18,888
Idaho	20,366	20,688	20,970	21,800	22,532	23,062	24,184	25,019	25,149	23,731
Illinois	185,036	184,064	180,622	182,495	180,778	179,020	180,572	180,836	176,795	171,255
Indiana	87,699	86,459	85,081	86,434	87,142	87,193	88,631	89,864	88,742	86,698
Iowa	38,266	37,619	37,559	38,174	38,438	39,311	40,607	40,886	40,224	39,700
Kansas	39,666	38,869	39,412	39,476	39,669	39,888	40,968	42,004	41,833	41,396
Kentucky	56,029	54,658	54,233	55,236	55,720	56,444	58,250	59,368	58,375	57,558
Louisiana	67,898	65,352	64,872	65,040	65,369	60,937	63,376	66,301	65,268	64,988
Maine	13,603	13,759	13,559	13,855	13,944	14,112	14,151	14,120	13,609	13,470
Maryland	74,316	73,218	73,323	74,930	74,628	74,980	77,494	78,095	77,289	75,061
Massachusetts	81,614	81,077	80,645	80,184	78,484	76,865	77,676	77,967	77,022	75,104
Michigan	136,171	133,427	129,967	131,094	129,776	127,706	127,483	125,261	121,127	117,293
Minnesota	67,604	67,562	68,025	70,050	70,624	70,919	73,525	73,735	72,421	70,648
Mississippi	44,075	42,282	41,518	42,380	42,827	42,395	46,056	46,491	44,947	42,905
Missouri	76,463	75,464	75,251	77,045	77,765	78,618	81,385	81,930	80,963	78,920
Montana	10,957	10,970	11,049	11,422	11,519	11,583	12,508	12,439	12,594	12,261
Nebraska	24,646	24,820	25,383	25,917	26,332	26,145	26,727	26,934	26,989	26,937
Nevada	30,829	31,382	32,571	33,647	35,200	37,268	40,027	41,181	39,506	37,627
New Hampshire	14,609	14,656	14,442	14,393	14,565	14,420	14,378	14,168	13,683	13,378
New Jersey	115,632	115,795	114,751	116,983	115,253	113,776	115,020	116,063	112,710	110,324
New Mexico	27,223	27,128	27,753	27,821	28,384	28,835	29,936	30,616	30,173	29,002
New York	258,737	254,026	251,415	253,714	249,947	246,351	250,104	253,451	250,383	248,110
North Carolina	120,311	118,185	117,335	118,323	119,847	123,096	127,859	131,037	130,839	126,846
North Dakota	7,676	7,629	7,757	7,972	8,189	8,390	8,621	8,840	8,938	9,001

Note: 2009 data are preliminary.

Source: National Center for Health Statistics

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**Appendix Table 1 (continued)**  
**Births, 2000-2009**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Ohio	155,472	151,570	148,720	149,679	148,954	148,388	150,593	150,879	148,821	144,772
Oklahoma	49,782	50,118	50,387	50,981	51,306	51,801	54,016	55,065	54,781	54,574
Oregon	45,804	45,322	45,192	45,953	45,678	45,922	48,689	49,378	49,096	47,199
Pennsylvania	146,281	143,495	142,850	145,959	144,748	145,383	149,090	150,713	149,273	146,432
Rhode Island	12,505	12,713	12,894	13,209	12,779	12,697	12,372	12,376	12,048	11,443
South Carolina	56,114	55,756	54,570	55,649	56,590	57,711	62,171	62,875	63,071	60,632
South Dakota	10,345	10,483	10,698	11,027	11,338	11,462	11,919	12,261	12,071	11,935
Tennessee	79,611	78,340	77,482	78,890	79,642	81,747	84,355	86,711	85,560	82,213
Texas	363,414	365,410	372,450	377,476	381,293	385,915	399,603	407,625	405,554	402,011
Utah	47,353	47,959	49,182	49,860	50,670	51,556	53,504	55,130	55,634	53,887
Vermont	6,500	6,366	6,387	6,589	6,599	6,295	6,511	6,513	6,339	6,109
Virginia	98,938	98,884	99,672	101,254	103,933	104,555	107,817	108,884	106,686	105,056
Washington	81,036	79,570	79,028	80,489	81,747	82,703	86,876	88,978	90,321	89,284
West Virginia	20,865	20,428	20,712	20,935	20,880	20,836	20,931	21,994	21,501	21,270
Wisconsin	69,326	69,072	68,560	70,040	70,146	70,984	72,340	72,784	72,261	70,840
Wyoming	6,253	6,115	6,550	6,700	6,807	7,239	7,672	7,893	8,038	7,884

Note: 2009 data are preliminary.

Source: National Center for Health Statistics

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Appendix Table 2  
**Birth Rates, 2000-2009**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>U.S.</b>	65.85	65.18	65.08	66.19	66.51	66.89	68.88	69.62	68.52	66.69
Alabama	65.25	62.76	61.84	62.81	62.98	63.98	66.66	68.25	67.86	65.74
Alaska	70.67	71.08	70.46	71.05	72.39	73.06	76.32	77.02	80.25	78.34
Arizona	78.20	77.01	77.43	78.86	79.47	79.29	82.00	80.90	77.09	71.50
Arkansas	67.09	65.84	66.81	67.47	68.70	69.50	72.10	72.76	71.48	70.11
California	70.22	69.16	69.15	70.43	70.79	71.41	73.23	73.83	71.84	68.50
Colorado	67.11	67.69	68.74	69.82	69.15	69.41	70.72	70.20	68.79	66.80
Connecticut	59.55	59.27	58.49	59.89	59.21	59.11	59.61	59.91	58.32	56.51
Delaware	63.55	61.67	63.55	64.70	64.74	65.90	67.70	68.63	68.23	65.40
District of Columbia	53.43	52.95	52.40	53.56	55.69	55.65	58.89	60.77	62.03	59.96
Florida	63.14	62.81	61.90	63.21	63.84	65.10	67.35	67.98	66.02	63.56
Georgia	69.62	69.15	68.33	69.04	69.79	70.62	72.68	72.93	70.27	67.67
Hawaii	69.37	68.08	69.89	72.26	72.65	71.30	75.40	76.66	78.12	75.79
Idaho	73.07	73.80	74.35	76.80	78.49	78.97	81.36	82.97	82.45	77.44
Illinois	67.45	67.26	66.34	67.43	67.14	66.88	67.71	67.96	66.64	64.71
Indiana	66.22	65.50	64.87	66.23	67.05	67.28	68.52	69.68	68.96	67.64
Iowa	62.66	62.12	62.63	64.30	65.08	66.96	69.49	70.28	69.40	68.72
Kansas	69.11	68.07	69.22	69.71	70.49	71.23	73.70	75.67	75.57	74.72
Kentucky	63.08	61.82	61.62	62.95	63.78	64.74	66.88	68.32	67.23	66.65
Louisiana	67.53	65.72	65.77	66.35	67.03	63.00	70.61	72.17	70.28	69.82
Maine	50.84	51.63	51.02	52.38	53.20	54.29	55.11	55.75	54.43	54.80
Maryland	62.40	61.21	61.05	62.30	62.05	62.33	64.60	65.56	65.34	63.83
Massachusetts	57.35	56.98	56.98	57.10	56.43	55.76	56.74	57.23	56.65	55.39
Michigan	63.18	62.17	61.03	62.04	61.89	61.42	61.98	61.74	60.72	59.76
Minnesota	62.36	62.18	62.76	64.98	65.83	66.48	69.23	69.70	68.83	67.51
Mississippi	69.44	67.19	66.55	68.36	69.23	68.80	75.64	76.37	73.98	70.88
Missouri	63.37	62.55	62.52	64.17	64.80	65.53	67.85	68.39	67.71	66.24
Montana	59.13	59.72	60.65	62.88	63.42	63.76	68.76	68.23	68.90	67.26
Nebraska	67.52	68.41	70.27	72.02	73.59	73.37	75.38	76.26	76.63	76.37
Nevada	72.16	71.41	72.39	73.08	73.82	75.70	78.72	78.95	74.83	71.24
New Hampshire	54.17	54.02	53.20	53.14	53.91	53.62	53.86	53.57	52.35	51.92
New Jersey	63.74	63.97	63.63	65.24	64.71	64.38	65.67	66.84	65.43	64.47
New Mexico	69.64	69.79	71.15	71.19	72.41	73.39	76.00	77.46	76.48	73.37
New York	61.44	60.47	60.15	60.99	60.36	59.89	61.17	62.29	61.90	61.68
North Carolina	67.45	65.86	65.14	65.39	66.00	67.19	68.91	69.53	68.74	66.32
North Dakota	56.85	57.36	59.10	61.32	62.99	65.24	67.35	69.64	70.61	70.79

Notes: Birth rate (general fertility rate) is the number of births per thousand women ages 15-44. Birth rate data for 2009 are preliminary.

Source: Statistics calculated using data from National Center for Health Statistics and U.S. Census Bureau

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Appendix Table 2 (continued)  
**Birth Rates, 2000-2009**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Ohio	63.66	62.46	61.77	62.71	62.89	63.16	64.68	65.28	64.96	63.76
Oklahoma	67.82	68.58	69.17	70.14	71.06	71.90	74.69	76.03	75.55	74.85
Oregon	63.36	62.51	62.01	63.08	62.94	62.95	66.08	66.28	65.40	62.53
Pennsylvania	57.19	56.49	56.62	58.23	58.10	58.62	60.34	61.26	60.91	60.07
Rhode Island	53.78	54.70	55.48	56.99	55.78	56.21	55.66	56.57	55.80	53.62
South Carolina	63.42	63.02	61.76	62.88	63.66	64.74	69.25	69.42	69.06	66.31
South Dakota	65.55	66.82	68.57	70.90	72.95	74.16	77.47	79.68	78.63	77.75
Tennessee	63.61	62.62	62.07	63.18	63.73	65.09	66.70	68.28	67.25	64.73
Texas	76.45	76.07	76.88	77.42	77.71	78.12	79.66	80.35	79.13	77.57
Utah	89.57	89.41	90.65	91.01	91.07	91.21	92.60	93.28	92.63	88.44
Vermont	49.80	49.08	49.61	51.53	51.93	50.03	52.19	52.90	52.11	50.83
Virginia	62.15	61.87	62.09	62.83	64.17	64.24	66.13	66.77	65.46	64.37
Washington	62.62	61.23	60.68	61.83	62.59	63.15	65.83	67.03	67.64	66.38
West Virginia	55.97	55.76	57.19	58.34	58.71	59.07	59.76	63.13	62.13	61.75
Wisconsin	59.87	59.70	59.34	60.89	61.23	62.28	63.85	64.64	64.60	63.72
Wyoming	59.84	59.53	63.92	66.06	67.45	72.14	76.16	77.31	77.84	75.04

Notes: Birth rate (general fertility rate) is the number of births per thousand women ages 15-44. Birth rate data for 2009 are preliminary.

Source: Statistics calculated using data from National Center for Health Statistics and U.S. Census Bureau

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Appendix Table 3  
**Per Capita Income, 2000-2009**  
*in 2009 dollars*

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>U.S.</b>	37,771	37,727	37,518	37,625	38,478	38,912	40,116	40,837	40,529	39,635
Alabama	29,985	30,396	30,773	31,172	32,221	32,781	33,436	33,916	33,807	33,411
Alaska	38,036	39,092	39,538	39,093	39,604	40,391	41,325	42,632	44,255	43,212
Arizona	32,718	32,625	32,409	32,448	33,527	34,592	35,567	35,555	34,336	33,207
Arkansas	28,127	28,914	28,943	29,651	30,487	30,655	31,344	32,520	32,481	32,315
California	41,608	41,053	40,598	40,781	41,910	42,584	44,233	44,748	43,696	42,395
Colorado	42,329	42,755	41,765	40,990	41,625	42,351	43,521	43,864	43,404	41,895
Connecticut	52,225	52,835	51,722	51,050	52,763	53,323	56,196	58,447	56,994	55,296
Delaware	50,435	54,684	54,656	55,583	58,231	60,325	63,390	66,223	68,617	68,843
District of Columbia	38,629	39,240	39,608	39,512	40,559	40,644	41,603	41,523	40,501	39,597
Florida	36,228	36,110	36,346	36,473	38,091	39,111	40,608	40,825	39,989	38,965
Georgia	35,544	35,368	34,893	34,592	34,777	35,323	35,568	35,897	35,236	34,129
Hawaii	36,217	35,731	36,390	36,721	38,333	39,329	40,980	42,596	42,334	42,152
Idaho	30,750	31,061	31,013	30,825	32,269	32,508	33,610	33,876	32,943	31,857
Illinois	40,659	40,194	40,193	40,342	40,890	40,913	42,212	43,129	43,044	41,856
Indiana	34,210	33,967	33,996	34,459	34,774	34,347	34,933	35,002	34,889	34,022
Iowa	34,002	33,836	34,429	34,384	36,030	35,555	36,103	37,348	38,083	37,647
Kansas	35,478	35,940	35,479	35,938	36,255	36,409	38,066	39,092	39,879	39,173
Kentucky	30,878	30,716	30,822	30,708	31,208	31,295	31,959	32,266	32,181	32,258
Louisiana	29,363	30,734	30,937	31,134	31,864	33,049	35,943	37,038	38,006	37,632
Maine	33,259	34,161	34,452	34,895	35,734	35,159	35,856	36,415	36,466	36,547
Maryland	43,206	43,852	44,236	44,480	46,029	46,663	47,864	48,637	48,299	48,247
Massachusetts	47,603	47,800	47,045	46,734	47,722	48,066	50,168	51,358	50,832	49,653
Michigan	36,617	36,315	36,005	36,402	35,956	35,461	35,342	35,444	35,179	34,315
Minnesota	40,610	40,396	40,641	41,147	42,108	41,729	42,550	43,228	43,081	41,854
Mississippi	26,854	27,633	27,584	27,954	28,561	29,448	29,788	30,669	30,618	30,401
Missouri	34,747	34,672	34,887	35,199	35,607	35,329	36,078	36,621	36,752	36,181
Montana	29,239	30,664	30,630	31,480	32,499	33,113	34,241	35,097	35,142	34,828
Nebraska	35,628	36,198	36,118	37,427	37,746	37,665	37,967	39,508	40,019	39,332
Nevada	38,602	37,773	37,342	38,089	40,069	41,879	41,758	41,798	39,895	37,670
New Hampshire	42,466	42,116	41,944	41,683	42,748	42,226	43,611	44,321	43,565	42,646
New Jersey	48,170	48,030	47,671	47,228	48,170	48,369	50,769	52,261	51,526	49,980
New Mexico	28,343	30,029	29,870	30,019	30,963	31,719	32,470	33,135	33,489	33,267
New York	43,142	42,960	42,218	42,160	43,618	44,693	46,808	48,781	47,968	46,516
North Carolina	34,776	34,381	33,939	33,759	34,704	35,192	35,715	36,188	35,556	34,879
North Dakota	31,923	32,332	32,622	34,683	34,433	35,515	35,721	38,329	41,309	40,802

Note: 2009 data are preliminary

Source: National Center for Health Statistics

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Appendix Table 3 (continued)  
**Per Capita Income, 2000-2009**

*in 2009 dollars*

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Ohio	35,748	35,433	35,554	35,728	35,827	35,603	36,154	36,346	35,824	35,408
Oklahoma	30,654	31,759	31,265	31,374	32,697	33,469	35,353	35,744	36,779	35,837
Oregon	35,778	35,407	35,496	35,628	35,904	35,716	36,865	37,099	36,693	36,191
Pennsylvania	37,512	37,167	37,504	37,697	38,300	38,235	39,482	40,418	40,301	40,175
Rhode Island	36,732	37,758	38,349	39,026	39,839	39,783	40,815	41,847	41,674	41,392
South Carolina	31,246	31,073	31,092	31,116	31,694	32,104	32,909	33,254	32,945	32,505
South Dakota	32,923	33,710	33,421	35,440	36,491	36,370	35,874	38,023	39,274	38,374
Tennessee	33,252	33,347	33,541	33,810	34,360	34,384	34,990	35,431	34,994	34,277
Texas	35,511	35,332	34,509	34,495	35,299	36,453	37,535	38,383	39,695	38,609
Utah	30,544	30,930	30,584	30,121	30,478	31,434	32,281	33,063	32,440	31,584
Vermont	35,111	35,711	35,797	36,173	37,175	36,739	38,346	39,330	39,244	39,205
Virginia	39,418	40,312	40,250	40,809	41,909	42,803	44,015	44,951	44,516	44,057
Washington	40,373	39,919	39,478	39,476	40,845	40,361	42,098	43,640	43,555	42,870
West Virginia	27,625	28,601	29,077	29,045	29,285	29,313	30,537	30,911	31,409	32,080
Wisconsin	36,302	36,455	36,717	36,882	37,153	36,978	37,922	38,178	37,770	37,373
Wyoming	36,479	37,942	38,254	39,549	41,181	43,330	47,542	47,886	50,508	48,302

Note: 2009 data are preliminary

Source: National Center for Health Statistics

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## APPENDIX 2: METHODOLOGY

### Fertility Data

Birth data were obtained from the National Center for Health Statistics (NCHS). [NCHS birth statistics for 2009](#) are preliminary and include 99.95% of all births in that year. [Birth statistics for 2010](#) are provisional.

Vintage 2009 population estimates provided by the [U.S. Census Bureau](#) were used in calculating birth rates.

Birth rates are measured using the general fertility rate (GFR), which is the number of births divided by the number of women of childbearing age (15-44).<sup>6</sup>

When the annual change in number of births is within the range of plus or minus 0.5%, this change is considered “leveling off.” Similarly, a fertility rate is defined as “leveling off” if its annual change is within the range of plus or minus 0.5%.

### Economic Data

In choosing economic indicators to use in this report, we were most interested in finding those variables that are good indicators of an individual’s experiences with the economic downturn; that are available at the state level; and that use standardized metrics, which allow for cross-state comparisons. Ultimately, seven indicators relating to income, employment and the housing market were tested to see whether their variations were associated with variations in fertility at the state level:

- Annual Per Capita Income, calculated using data from the [Bureau of Economic Analysis](#), and the [U.S. Census Bureau](#), and adjusted to year 2009 dollars using the [National Consumer Price Index-U](#). The other major estimate of income is household income as estimated by the U.S. Census Bureau from its Annual Social and Economic Supplement to the Current Population Survey. Both measures of income are comprehensive, including wages and salaries, and also interest, rental and other sources of income. They also trend similarly across the business cycle. We chose to use the per capita income measure because it is readily available at the state level. Per capita income is also a more comprehensive measure because it includes employer contributions to pension funds and health and other insurance plans.

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<sup>6</sup> In 2008, women ages 15-44 accounted for 99.7% of all births in the U.S.

- [Real Per Capita Gross Domestic Product](#), by state, using 2005 dollars, available from the Bureau of Economic Analysis
- Annual Employment Rate for the civilian noninstitutionalized workforce (persons ages 16 and older), calculated using data available from the [Bureau of Labor Statistics](#)
- [Annual Unemployment Rate](#), available from the Bureau of Labor Statistics
- [Initial Unemployment Claims](#) for the second quarter, available from the Department of Labor
- Foreclosure Rate, the percent of all housing stock in foreclosure, as determined by [RealtyTrac](#)
- [House Price Index \(HPI\)](#) for the second quarter, which measures single-family house prices, available through the Federal Housing Finance Agency