

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION**

APRIL DEBOER, <i>et al.</i> ,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	Civil Action No. 12-cv-10285
	)	
RICHARD SNYDER, <i>et al</i>	)	
	)	
Defendants.	)	

**EXPERT REPORT OF JOSEPH PRICE, PH.D.**

**I. Assignment**

1. I have been asked to provide an assessment of the question of whether children have better outcomes when raised by a father and a mother compared to being raised by two parents of the same gender.

**II. Qualifications**

- 2. I am an Associate Professor of Economics at Brigham Young University, where I have been a professor since 2007. I received by Ph.D. in economics from Cornell University in 2007 where my emphasis of study was labor economics, health economics, and the economics of the family.
- 3. I have published 23 articles in peer-reviewed journals with another 7 that are accepted and will be published over the next year. My publications include articles in some of the top academic journals, including the *Quarterly Journal of*

*Economics, Demography* and *Management Science*. My research has also received considerable media attention including coverage in the *New York Times*, *Washington Post*, *Today Show*, and many other news outlets. I am regularly invited to present my research at various academic departments and research conferences.

4. I am an empirical economist that has conducted research on the impact of marriage on infant health outcomes, factors that influence the decision to marry, parental investments in children, and the outcomes of children raised by same-sex couples. Although the specific topics that I have studied vary, the common theme in my research has been the use of large datasets, rigorous empirical methods, and complete transparency in all of my empirical methods. I make my data and analysis code available to other scholars and often provide additional analysis based on inquiries from the media.
5. Over the last several years, I have also been asked to review the academic work of other scholars by over 40 different academic journals. This experience of evaluating the work of others in a variety of fields gives me a strong background in discerning between research that is likely to result in correct inference and those for which there is likely to be some source of estimation bias that will affect the interpretation of the results. This request by editors to have me assist in evaluating the research of other scholars is also a signal of the trust that other scholars place in my assessment of good research.

6. I have received several academic awards, grants, and honors. These include the Wells and Myrle Cloward Teaching and Learning Faculty Fellowship, the Emmaline B. Wells Scholarly and Creative Work Grant, and an Education and Social Opportunity Grant from the Spencer Foundation. My CV is attached as Exhibit A.
7. I am being compensated \$300 per hour for my time to prepare this expert witness report. My compensation does not depend on the outcome of the case or the opinions or testimony that I provide.

### **III. Summary of findings**

8. Based on my own research and my evaluation of published research in this field, I conclude that children raised by same-sex couples have noticeably worse outcomes than children raised by both a father and a mother. This evaluation is based on my own published study on the topic and the supporting evidence of other recent studies using large nationally representative datasets. Three of the mechanisms through which these differences are likely to operate are: parental gender, biological relatedness, and stability, all of which put children being raised by same-sex couples at a distinct disadvantage.

### **IV. The 2010 Rosenfeld study in *Demography***

9. One of the major limitations to conducting research on the outcomes of children being raised by same-sex couples is that most nationally representative datasets of child outcomes contain too few of these children to provide any meaningful

inference. As a result much of the research prior to Michael Rosenfeld's 2010 article in *Demography* were based on sample sizes that were "too small to allow for statistically powerful tests" and were based on convenience samples that did not reflect the average characteristics of same-sex parents.<sup>1</sup> In his review of 45 previous studies about the outcomes of children of gay or lesbian parents, Rosenfeld found that the average number of children being raised by gay parents included in the analysis was 38 and only 7 of the studies included any children being raised by gay fathers.<sup>2</sup>

10. Allen and Marks provide separate reviews of the prior literature that highlight similar concerns as those addressed by Rosenfeld.<sup>3</sup> For example, of the 53 studies reviewed by Allen, only four used a randomly drawn sample of children (with three of these using the same dataset) and even those from a randomly drawn sample has a very small number of children raised by same-sex couples (50 in one dataset and 18 in the other dataset). Both Allen and Marks note that most the previous studies fail to include a heterosexual comparison group in their analysis. For example, of the 59 studies reviewed by Marks, only 33

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<sup>1</sup> Another recent study makes a similar comment on the previous research and states that the "lack of representative samples is the most fundamental problem in quantitative studies on gays and lesbians, which commonly rely on self-recruited samples from an unknown population. Respondents are, for example, recruited by snowball methods; from the readers of particular magazines; from members of organizations for gays or lesbians; or, more recently, from persons who are willing to respond to Internet questionnaires." Gunnar Andersson, Turid Noack, Ane Seierstad, and Harold Weedon-Fekjaer. "The Demographics of Same-sex Marriages in Norway and Sweden." *Demography*, 43, 2006, 79-98. The specific quote is on page 81.

<sup>2</sup> Michael Rosenfeld. "Nontraditional Families and Childhood Progress through School." *Demography*, 47, 2010, 755-775.

<sup>3</sup> Doug Allen. "High School Graduation Rates among Children of Same-sex Households." *Review of Economics of the Household*, forthcoming. Loren Marks. "Same-sex parenting and children's outcomes: A closer examination of the American Psychological Association's Brief on Lesbian and Gay Parenting". *Social Science Research*, 41, 2012, 735-751.

included a heterosexual comparison group and 13 of these used single parents as the comparison group. Finally, they both note that most of the studies fail to use child outcome measures most commonly used in the broader research on family structure (such as education, criminality, early childbearing, or drug/alcohol abuse).

11. To address the limitations of the previous research, Rosenfeld uses data from the 2000 US Census which includes 3,502 children of same-sex couples. Rosenfeld examines whether these children were more or less likely to be making normal progress in school than children raised in other family structure arrangements (heterosexual married, heterosexual cohabiting, etc.). Rosenfeld restricts his analysis sample to just children who are the “own” child of the household head and who have lived in the same home with the same parents for at least five years. Rosenfeld concludes from his results that the outcomes of children raised by same-sex couples “cannot be distinguished with statistical certainty from children of heterosexual married couples.”

12. I was one of three coauthors that published a comment in *Demography* about Rosenfeld’s study. For our study, we reconstruct Rosenfeld’s data using publicly available data from US 2000 Census. We also use the same outcome variable, control variables, and family structure definitions in our analysis. We then make only two changes to the original analysis both of which lead to very different conclusions from the original study. The first change provides an alternative

interpretation of the original empirical specification and the second expands the sample to include the children that Rosenfeld excluded from his analysis.

*Alternative interpretation*

13. First, we change the comparison group used in the analysis to be children raised by same-sex couples rather than children raised by married heterosexual couples. This small change does not affect the outcome variable, control variables, family structure groups, or sample restrictions. However, this small change results in the alternative interpretation of the original results that the outcomes of children raised by same-sex couples cannot be differentiated with statistical certainty from those children of almost any other family structure type. In fact, the odds of a child being raised by a same-sex couple to be making normal progress in school is nearly identical to that of children being raised by never-married mothers. Thus while the original article emphasizes that children of same-sex parents are not statistically different from children with heterosexual married parents, it would be equally valid to make the same statement about the difference between children of same-sex couples and never married mothers (a group that has been well documented to be at a significant disadvantage in terms of various child outcomes).

14. Related to this point is the fact that there is an important difference between not finding a statistically significant difference and there in truth being no difference. Most statistical tests are designed to reject a null hypothesis. In this case, the null hypothesis is that there is no difference in child outcomes between

children raised by a same-sex couple and children raised by a married heterosexual couple. In cases where you fail to reject the null hypothesis, the confidence intervals of the estimate provide a guide to what can be statistically ruled out.

15. The original Rosenfeld article did not provide confidence intervals (or standard errors) on the main estimates in Table 3, but rather included asterisks to indicate whether a particular estimate was statistically significant. In addition, Rosenfeld did not even report the results using readily interpretable coefficients (such as an odds ratio or a marginal effect). In Table 2 of our paper, we estimate the same model as Rosenfeld but report the coefficients as an odds ratio and provide the standard errors of these estimates. The lower bound of the corresponding 95% confidence intervals for these estimates (using the original Rosenfeld specification) indicate that we cannot rule out the possibility that children raised by same-sex couples have 35% lower odds of making normal progress through school than children raised by a heterosexual married couple (the omitted group used in Rosenfeld's analysis).

### *Expanded sample*

16. Second, we expanded the set of children included in the sample. The original study was restricted to children who were: (1) a biological child of the household head and (2) a child who had been living in the same address with the same parents for at least five years. I will discuss in Section V the original motivation for these two restrictions but the result of these two restrictions is to: (1)

eliminate over half of the available sample and reduce the ability to detect a true effect, and (2) remove two of the primary channels through which the effects of being raised by a same-sex couple are likely to operate (biological relatedness and family stability). I will discuss this issue in Section VII when I describe the mechanisms through which the effects of children being raised by same-sex couples are likely to operate.

17. Removing these two sample restrictions increases the number of children being raised by same-sex couples from 3,502 in the original sample to 8,632 in the new sample. Removing these sample restrictions also makes the estimated difference in child outcomes between children being raised by same-sex couples and children being raised by married heterosexual both larger and more precise. The magnitude of the coefficient indicates that children being raised by a married heterosexual couple have a 35% higher odds of making normal progress in school than children being raised by a same-sex couple ( $p\text{-value} < 0.001$ ). Children being raised by heterosexual cohabiting couples have 15% higher odds of making normal progress in school than children being raised by a same-sex couple ( $p\text{-value} = 0.038$ ).

## **V. Which sample restrictions are appropriate?**

18. In his reply to our comment, Rosenfeld's main contention is that restricting the analysis to "own" children and residentially stable families is crucial for correct inference. Since the decision of which children to include in the sample has such a dramatic effect on the results of the study, I will provide some additional

insight about which sample restrictions are appropriate. Our results indicate that removing either of the two sample restrictions leads to a dramatic change in his original conclusions, so I will address each of these issues separately.

*Biological child restriction*

19. First, Rosenfeld restricts his sample to children who are reported to be the “own” child of the household. The exact question on the census form is whether the child is “natural-born son/daughter” of the household head. This restriction excludes 14.3% of children being raised by heterosexual married couples, 16.9% of children being raised by heterosexual cohabiting couples, and 17.7% of children being raised by same-sex couples.

20. The majority of children who are not the “own” child of the household head are step-children, meaning they are the “own” child of the parent in the household who doesn’t happen to be listed as the head of household. The census-provided instructions of which adult should be considered the household head is the “person, or one of the people living here who owns, is buying, or rents this house, apartment, or mobile home. If there is no such person, start with any adult living or staying here.” In heterosexual married couples, the male parent is listed as the household head 90% of the time, whereas in heterosexual cohabiting couples, the male parent is only listed as household head 45% of the time.

21. Aside from stepchildren, children not listed as “own” children are adopted children, foster children, and children with some other relation to the household

head (e.g. grandchild, nephew, etc.). Adopted children constitute 2.7%, 1.5%, and 3.6% of children being raised by heterosexual married, heterosexual cohabiting, and same-sex couples, respectively. Foster children constitute 0.3%, 1.0%, and 0.8% of children being raised by heterosexual married, heterosexual cohabiting, and same-sex couples, respectively. However, excluding foster children and adopted children from our final empirical specification (column 4 of Table 3) does not change the reported results.

22. Another disadvantage of restricting the analysis to only children who are the “own” child of the household head is that it cuts off one of the mechanisms through which the negative effects of being raised by a same-sex couple might operate. It is not possible for a child being raised by a same-sex couple to be biologically related to both of his or her parents. All of these children must be a foster child, an adopted child, or the step-child of one of the parents.

23. Rather than removing these children from the sample altogether, a more reasonable approach is to let them remain in the sample but include controls for this particular measure. This is the approach that we take in our study.

#### *Stability restriction*

24. Rosenfeld also restricts his sample to children who have lived in the same home with the same parents for at least five years. The restriction eliminates 47.6% of children being raised by heterosexual married couples, 78.7% of children being raised by heterosexual cohabiting couples, and 57.8% of children being raised by same-sex couples. The primary empirical motivation for including this

restriction is that since it is unknown when the child was held back in school, this restriction is put in place to ensure that the current family structure better represents the family structure at the time that the child was held back.

25. This benefit of linking current and past family structure comes at a very high cost since it cuts the available sample size in half and removes another important mechanism through which the effects of family structure operate—family stability. Before discussing these costs it is helpful to note that the benefits of matching current family structure with past family structure are less than might be expected. If the current family structure of the child differs from that of the past then this will introduce measurement error in the main variables of interest. This will attenuate the coefficient on these variables towards zero and make it more difficult to detect a true difference between the groups. This attenuation bias is likely to be a much smaller concern for correct statistical inference than the two problems introduced by employing this sample restriction.

26. The first problem of the residential stability restriction is that it cuts the available sample size in half. This reduction is particularly large for children raised by same-sex couples (56.8%) and children being raised by heterosexual cohabiting couples (77.8%). While the original sample size that Rosenfeld uses that includes over 700,000 children may seem large, there are a few factors that reduce the statistical power in this situation: (1) there are only a small fraction of children being raised by same-sex couples, (2) there is a fair amount of

measurement error in the outcome measure, and (3) the outcome variable is a binary variable that is relatively uncommon. In these situations, the overall sample size can be a misleading indicator of the statistical power of the analysis.

27. The restriction also doesn't distinguish between changes in family structure over time and changes in residential location. For example, the sample restriction removes 47.6% of children being raised by heterosexual married couples even though many of these children are likely to be biologically related to both parents indicating that the only thing that changed for these families is where they were living.

28. The second problem in restricting an analysis of family structure to families that have experience not changes for the previous five years is that it eliminates one of the important channels through which the effect of family structure is likely to operate. One of the reasons that children raised by a married heterosexual couple have better outcomes than other family structure types is that this family structure type tends to be the most stable over time an issue I will discuss in Section VII.

## **VI. Evidence from other large nationally representative samples**

29. The discussion of the Rosenfeld study in the previous section highlights the need for large samples to estimate differences in child outcomes for children raised by same-sex couples. In this section, I will discuss some of the other recent studies that have conducted analysis on large representative samples of children raised by same-sex couples or gay or lesbian parents. The studies below highlight two

ways in which larger samples can be obtained for analysis: (1) start with a really large dataset or (2) use a random sampling method but oversample individuals who are raised by gay or lesbian parents.

30. A recent study by Doug Allen uses data on a 20% sample of population of Canada from 2006 Canadian Census and finds that children being raised by gay or lesbian parents were 35% less likely to graduate from high school than children being raised by heterosexual married couples. The Canadian data provides the advantage of examining the effects of family structure on children in a country where same-sex couples have enjoyed all taxation and government benefits since 1997 and where same-sex marriage has been legal since 2005.<sup>4</sup>

31. Mark Regnerus takes the second approach to obtaining a large representative sample by using the random sampling methods employed by Knowledge Networks but explicitly oversampling children whose parents had a same-sex relationship. The final sample includes 175 children who report their mother having had a same-sex relationship and 73 who reported the same about their father. The final dataset that Regnerus created is called the *New Family Structure Study* and is made freely available to other scholars for their own research. One of the major advantages of the dataset is the rich set of outcome variables that tap into various domains of child outcomes.<sup>5</sup>

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<sup>4</sup> Doug Allen. "High School Graduation Rates among Children of Same-sex Households." *Review of Economics of the Household*, forthcoming.

<sup>5</sup> Mark Regnerus. "How different are the adult children of parents who have same-sex relationships? Findings from the New Family Structures Study." *Social Science Research*, 41, 2012, 752-770.

32. Regnerus finds that, compared to children raised by an intact biological family, children raised by a parent that had a same-sex relationship have lower educational attainment, higher levels of depression, higher rates of crime, and higher rates of smoking. All of these measures are child outcomes commonly used in research on family structure.
33. In preparing this report, I re-examined the data used in the Regnerus study but made one small change. In his study, he includes separate categories for children with a gay father and children with a lesbian mother. Including these groups separately in the analysis reduces the statistical power of estimating the effect of having a gay or lesbian parent. Making this one adjustment to the analysis dramatically increases the number of measures for which children raised by a gay or lesbian parent have statistically significant worse outcomes. These additional measures include higher rates of sexual transmitted infections, higher rates of being touched sexually by an adult or parent, lower levels of reported health, lower levels of reported happiness, and lower reported quality of their current relationship.
34. There are two other notable studies that use large nationally representative samples to examine outcomes of children raised by same-sex couples. Daniel Potter uses data from the Early Longitudinal Child Study (ECLS) a dataset with a rich set of measures of the child's family background and their performance in school. The total dataset includes 19,043 children, including 158 children who were coded as living with a same-sex parenting during at least one of the seven

waves of the study, spanning kindergarten through 8<sup>th</sup> grade. Potter notes that relative to children in married, two-biological parent households, children in same-sex parent families scored about 3.4 points lower on their math scores (about a sixth of a standard deviation,  $p$ -value=0.001) though this gap drops to 1.8 points ( $p$ -value=0.060) once controls for socio-demographic characteristics are included. In the final column of Table 3, Potter includes controls for structure in kindergarten as well as the cumulative number of family transitions and finds that the gap disappears completely and is no longer statistically significant.

35. Potter notes that these results suggest that differences in child outcomes based on family structure are more likely to reflect the effects of family transitions than any “inherent deficiencies in these family structures”. The puzzling thing about this conclusion is that the results in that same specification indicate that children being raised by a single parent have higher performance than married two-biological parent households (and this difference is statistically significant). This result about children of single parents contradicts a large body of past research and suggests there might be something amiss with the methodological approach. The other issue with this interpretation of the results is that, as with the Rosenfeld study, controlling for family stability cuts off one of the important mechanisms through which the effects of family structure operate.

36. One of the hallmarks of good science is the ability to replicate and extend the work of other scholars. As mentioned earlier, Regnerus allows any other scholars to use the data from the *New Family Structure Study* to replicate his results or

pursue their own specific research questions. The US census data used by Rosenfeld or the ECLS data used by Potter can be easily accessed by other researchers, making replication and extension possible. Rosenfeld even shared his data and analysis code with us, allowing us to make sure that we were using the same empirical model for our analysis. This level of data sharing and public access does not exist for most of previous research on gay or lesbian parenting, greatly hindering the advancement of science on this topic.

37. For example, the *National Longitudinal Lesbian Family Study (NLLFS)* is one dataset that has been used in some of the past research on gay and lesbian parenting including an article in *Pediatrics* that received considerable media attention. Despite repeated requests, the authors have noted that there is simply no option for me to obtain access to the data to do some simple re-analysis of their main results. While the data being collected by many of these studies is certainly quite sensitive, there are a number of ways in which other scholars can be allowed to access in a confidential way data used in past studies. In fact, data disclosure policies have been a common feature of many academic journals as a way of ensuring integrity among researchers and allowing scholars to build on each other's work. As such, greater trust should be placed in empirical estimates that are based on data that can be accessed by a broader set of scholars (such as the studies described in this and the previous section).

## VII. Mechanisms

38. There are three important mechanisms that provide a reasonable explanation for why children being raised by same-sex couples have worse outcomes than children being raised by a married heterosexual couple. These mechanisms are parental gender, biological relatedness, and family stability.
39. As mentioned in Section IV, there is a distinct difference between failing to find a statistically significant difference between two groups and there actually being no difference. The clearest evidence of there being “no difference” would be to have an estimated effect that is really close to zero with a very narrow confidence interval. A confidence interval allows researchers to rule out effects larger than the upper bound of the confidence interval. In practice, few studies claiming to find “no difference” follow this standard in reporting their results.<sup>6</sup>
40. For each of the mechanisms described in this section, there are a set of studies that make the opposite claims: that parental gender doesn’t matter for child outcomes, that biological relatedness doesn’t matter for child outcomes, and that same-sex couples are just as stable as heterosexual couples. It is important to note that most of the research providing counter arguments falls more in the camp of failing to find a statistically significant difference (often due to small sample sizes) rather than finding confidence intervals that are narrowly centered around an estimate of zero. My argument in describing each of these mechanisms is that they each provide a reasonable explanation for why children

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<sup>6</sup> Stephen Ziliak and Deirdre McCloskey. *The Cult of Statistical Significance: How the Standard Error Costs Us Jobs, Justice, and Lives*. University of Michigan Press, 2008.

raised by gay or lesbian parents would have worse outcomes, on average, than children raised by heterosexual parents.

### *Parental Gender*

41. Mothers and fathers play distinct and complementary roles in raising children.

Mothers tend to be more empathetic, tender-minded and nurturing than men.

Some societies, such as Sweden or Norway, have made a concerted effort to erase gender difference in parental child care, but even in these countries there are still notable differences in how fathers and mothers approach parenting and how much paternity leave they take. Even in households where both fathers and mothers take leave, the “mothers displayed affectionate behavior, vocalized, smiled, tended, held, disciplined and soothed the infant more than fathers did”.<sup>7</sup>

42. David Popenoe describes some of the unique ways in which fathers contributed to positive child outcomes. He notes that fathers serve as male role models and provide examples to their children of how to relate acceptably with the opposite sex. Father’s also have distinct styles of play of with their children (often a more “rough and tumble” approach) that help children learn self-control and that certain types of physical violence (e.g. biting, kicking) are not acceptable. Fathers tend to stress “competition, challenge, initiative, risk tasking, and independence.” In contrast, mothers often stress “emotional security and personal safety”. Popenoe summarizes these differences by noting that “the complementarity of male and female parenting styles is striking and of

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<sup>7</sup> Steven Rhoads,. *Taking Sex Differences Seriously*. Encounter Books. 2004.

enormous importance to a child's overall development.... What is clear is that children have dual needs that must be met: one for independence and other for relatedness, one for challenge and the other for support”.

43. Additional evidence of the distinct parenting styles of fathers and mothers is provided in how they spend their time with their children. In my research about parental time investments in children, I find that mothers spend significantly more total time, quality time, and reading time with their children while fathers spend more time watching television with their children (see Table 2 and 8).<sup>8</sup> If I narrow the time-use measures to more specific activities, I find that fathers spend more time playing sports with their children and doing exterior housework together, while mothers spend more time reading to their children, talking with their children, and doing interior housework together.
44. Some indirect evidence about common beliefs about the particular concerns about a child being raised without a mother is documented in the fraction of divorces that result in the father receiving sole custody of the child. Cancian and Meyer use data from divorce cases in Wisconsin 1986-1994 and find that only 10% of the cases result in the children being placed in the sole custody of the father compared to over 70% of children being placed in the sole custody of the mother.<sup>9</sup>

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<sup>8</sup> Joseph Price. “Parent-Child Quality Time: Does Birth Order Matter?” *Journal of Human Resources*, 43, 2008, 240-265.

<sup>9</sup> Maria Cancian and Daniel Meyer. Who gets custody? *Demography*, 35, 1998, 147–157.

### *Biological relatedness*

45. It is impossible for a child to be biologically related to both parents of a same-sex couple. In our analysis of the 2000 Census data, only 3.6% of children raised by same-sex couples are adopted and only 0.8% are foster children. As such, the vast majority of children being raised by same-sex couples are part of a step-family which comes with it a unique set of challenges that have been studied previously in heterosexual couples.

46. Stepfathers often feel as if they are competing with their stepchildren for the mother's time and attention and become disengaged from parenting. Fathers show less care and affection for their stepchildren than they do towards their biological children. Fathers invest less time and money resources in their stepchildren than they do their co-residential biological children. Child abuse and particularly sexual abuse is much higher in stepfamilies than in families where both parents are biologically related to the children.<sup>10</sup>

### *Family Stability*

47. The third mechanism that provides a reasonable explanation for the difference in outcomes for children being raised by a same-sex couple is family stability.

Anderssoon, Noack, Seierstad, and Weedon-Fekjaer use registry data on the entire population of Norway and Sweden to examine the dissolution rates of

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<sup>10</sup>Kermyt Anderson, Hillard Kaplan, and Jane Lancaster. "Paternal Care by Genetic Fathers and Stepfathers I: Reports from Albuquerque Men. *Evolution and Human Behavior*, 20, 1999, 405-431. Jocelyn Brown, Patricia Cohen, Jeffrey Johnson, and Suzanne Salzinger. "A longitudinal analysis of risk factors for child maltreatment: findings of a 17-year prospective study of officially recorded and self-reported child abuse and neglect." *Child Abuse and Neglect*, 22, 1998, 1065-1078.

same-sex couples. These two countries provide a cleaner test than data based on US since they were two of the first countries to introduce legal recognition for same-sex couples, called registered partnerships (Norway in 1993 and Sweden in 1995). In addition, social rights in Scandinavia (such joint health-insurance coverage or differential tax) are independent of marriage. Scandinavian data also provides a unique advantage in that the national registry data provides a long-run and detailed view of the start and end dates of both registered partnerships and marriages.

48. The authors use a longitudinal event-history analysis to calculate the relative divorce (or dissolution) risk between same-sex and opposite-sex couples. They find that male same-sex couples are about 50% more likely to divorce than heterosexual couples and female same-sex couples are more than twice as likely to divorce (relative ratio = 2.67) than a heterosexual couple. These gaps are very similar when including controls for the various characteristics that can differ between same-sex and opposite-sex couples (see Table 4). The authors do not restrict their analysis to just couples with children but do run a separate piece of analysis on childless couples. The comparison between the results of all couples and childless couples suggest that the conclusions of the study would be very similar if the analysis had been restricted to just couples who have children at some point.

49. The authors note that “a higher propensity for divorce in same-sex couples is perhaps not very surprising given this group’s lower exposure to normative

pressure to maintain lifelong unions. In addition, if expectations about relationship duration are based on past relationship experience and on the experiences of one's peers, then lesbians and gay men will probably have lower expectations of relationship duration than will heterosexual people, given the less-institutionalized nature of same-sex relationship dynamics" (p. 95).

50. The Regnerus study described earlier also provides some indirect evidence of the instability of same-sex partnerships in the US. Regnerus reports: "Among those who said their mother had a same-sex relationship, 91% reported living with their mother while she was in the romantic relationship, and 57% said they had lived with their mother and her partner for at least 4 months at some point prior to age 18. A smaller share (23%) said they had spent at least 3 years living in the same household with a romantic partner of their mother's. Among those who said their father had a same-sex relationship, however, 42% reported living with him while he was in a same-sex romantic relationship, and 23% reported living with him and his partner for at least 4 months (but less than 2% said they had spent at least 3 years together in the same household)."

51. The Early Childhood Longitudinal Program (ECLS) data used in the study by Daniel Potter (described in section VI) provides some direct evidence about the instability of same-sex couples. For example, of the 60 children who were being raised by a same-sex couple in the fall of their kindergarten year in school (the first wave of the data), only 22 were still living with a same-sex couple at the start of 1<sup>st</sup> grade (with another 21 leaving the sample) and only 9 were still

living with a same-sex couple in third grade (with a total of 28 leaving the sample by this point).

52. Thus of the original children with same-sex parents, about 33% leave the sample by 1<sup>st</sup> grade and 47% by 3<sup>rd</sup> grade. Of those remaining in the sample, 43% were no longer living with a same-sex parent the following year and 72% were no longer living with a same-sex couple. In contrast, only 13% of the children from married biological parents have left the sample by 1<sup>st</sup> grade and 23% have left by 3<sup>rd</sup> grade. Of those that remain in the sample, only 6% are no longer living with married biological parents by 1<sup>st</sup> grade and only 9% are no longer living with married biological parents by 3<sup>rd</sup> grade.

Dated: December 16, 2013

By:

A handwritten signature in black ink, appearing to read "Joseph Price". The signature is stylized with a large initial "J" and a long horizontal stroke at the end.

Joseph Price,  
PhD

## Exhibit A: Curriculum Vitae

### Joseph Price

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#### **Positions:**

Associate Professor, Department of Economics, Brigham Young University, 2013 -  
Assistant Professor, Department of Economics, Brigham Young University, 2007-2013  
Faculty Research Fellow, NBER, 2008 –  
Research Fellow, IZA, 2010-

#### **Education:**

Ph.D. Economics, Cornell University, August 2007.  
B.A. Economics, Brigham Young University, August 2003.

#### **Publications:**

Buckles, Kasey and Joseph Price. "Selection and the Marriage Premium for Infant Health." *Demography*, forthcoming.

Just, David and Joseph Price. "Using Incentives to Encourage Healthy Eating in Children" *Journal of Human Resources*, forthcoming.

Platt, Brennan; Joseph Price; and Henry Tappen. "Pay-to-Bid Auctions" *Management Science*, forthcoming.

Just, David and Joseph Price. "Default options and Food Choices" *Public Health and Nutrition*, forthcoming.

Davis, Michael; Craig Palsson, Joseph Price. "Taxing the Opposition: Cactus League Attendance and the Efficiency of the 'Cubs Tax'" *International Journal of Sports Finance*, forthcoming.

Parkinson, Kristy; Joseph Price, Kosali Simon, and Sharon Tennyson. "Consumer Reactions to Drug Information: Response to FDA Warnings on Antidepressants" *Review of Economics and the Household*, forthcoming.

Allen, Douglas; Catherine Pakaluk, and Joseph Price. "Nontraditional Families and Childhood Progress through School: A Comment on Rosenfeld." *Demography*, 50(3): 955-961, 2013.

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Price, Joseph and Kosali Simon. "Education and the Response to Medical Research" (with Kosali Simon), *Journal of Health Economics*, 28(6): 1166-1174, 2009.

Wight, Suzanne; Suzanne Bianchi, Joseph Price, and Bijou Hunt. "Teenage Time Use" *Social Science Research*, 38(4): 792-806, 2009.

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Ehrenberg, Ronald; George Jakubson; Jeffrey Groen, Eric So, and Joseph Price. "Inside the Black Box of Doctoral Education" *Educational Evaluation and Policy Analysis*, vol. 29(2): 134-150, 2007.

#### **Under Review or Revise-Resubmit:**

"The Number of Children Being Raised by Gay or Lesbian Parents" (with Ryan Hill\* and Corbin Miller\*)

"Sticking with What (Barely) Worked" (with Lars Lefgren and Brennan Platt).

"What Matters in Movie Ratings? Cross-country Differences in which Content Influence Mature Movie Ratings" (with Doug Gentile and Craig Palsson\*).

"How Much More XXX is Generation X Using?" (with Rich Patterson\* and Mark Regnerus)

"Pornography and Marriage" (with Kirk Doran)

“Causes of gender differences in competition: theory and evidence” (with Chris Cotton and Frank McIntyre)

“Lunch, Recess, and Nutrition: Responding to Time Incentives in the Cafeteria” (with David Just)

“Technological change, relative worker productivity, and firm-level substitution: Evidence from the NBA ” (with Grant Gannaway\*, Craig Palsson\*, and David Sims)

“Impact of fruit smoothies on adolescent fruit and milk consumption during school breakfast” (with Dylan Bates\*)

“The Effect of Teenage Childbearing on Adult Civic Engagement” (with Joseph Sabia, Liz Peters, and Reggie Covington)

**Grants:**

Benjamin Miller Research Grant, ILR, Cornell (\$2,500), 1/2007

Bronfenbrenner Life Course Center Innovative Research Project Grant (w/ Kosali Simon), Cornell (\$3,330), 6/2007

Institute for Social Science Seed Grant (w/ Kosali Simon), Cornell (\$6,500), 7/2007

Women’s Research Institute, BYU (\$3,000), 11/2007

Family Studies Center, BYU (\$6,000), 11/2007

Mentored Environment Grant, BYU (\$13,000), 4/2008

Small Grants Program in Behavioral Economics (w/ David Just), USDA ERS (\$30,000), 8/2008

Gerontology Program, BYU (\$3,400), 2/2009

Mentored Environment Grant, BYU (\$13,090), 12/2009

Family Studies Center, BYU (\$3,400), 12/2009

Food Assistance and Nutrition Research Program (w/ David Just), USDA ERS (\$150,000), 8/2010

Cornell Center for Behavioral Economics in Child Nutrition Program (w/ David Just), (\$29,000), 7/2011

Food Assistance and Nutrition Research Program (w/ George Lowenstein, Paul Rozin, and Kevin Volpp), USDA ERS (\$250,000), 8/2011

Mentored Environment Grant, BYU (\$16,200), 12/2011

Family Studies Center (w/ Mike Findley and Dan Nielsen), BYU (\$10,000), 1/2012

Education and Social Opportunity Grant (w/ Chris Cotton and Thomas Dee), Spencer Foundation (\$28,000), 1/2012

Mentored Environment Grant, BYU (\$10,870), 1/2013

Emmaline B. Wells Grant, BYU (\$9,300), 1/2013

**Professional Activities:**

Referee for:

*Agricultural and Resource Economics Review, American Economics Review, American Law and Economics Review, AEJ-Policy; AEJ-Applied; American Journal of Public Health, Biodemography, Demography, Economics and Human Biology, Economic Inquiry, Economica, Economic Journal, Economics Bulletin, Economics of Education Review,*

*Econometrics, Educational Finance and Policy, Evaluation and Program Planning, Health Economics, Interfaces, Journal of Applied Econometrics, Journal of Human Resources, Journal of Economic Behavior and Organizations, Journal of Labor Economics, Journal of Marketing Research, Journal of Marriage and Family, Journal of Policy Analysis and Management, Journal of Population Economics, Journal of Public Economics, Journal of Quantitative Analysis in Sports, Journal of the Scientific Study of Religion, Labour Economics, Management Science, Oxford Economic Papers, Pediatrics, Political Research Quarterly, Public Health and Nutrition, Quarterly Journal of Economics, Review of Economic Studies, Sexualities, Social Science Journal, Social Forces, Social Science and Medicine, Social Science Research, Southern Economic Journal*

Discussant: SEA (2006-2007, 2009-2010, 2012), APPAM (2006), WEA (2007, 2009, 2011-2013), AEA (2008, 2010-2011), SWEA (2008), PAA (2008), Social Costs of Pornography (2008), WSSA (2011), ASHEcon (2010, 2012)

### **Conference Presentations:**

American Society of Health Economists: 2008, 2010, 2012  
APPAM research conference: 2005, 2006, 2012  
Population Association of America: 2006-2010, 2013  
Society of Labor Economics: 2006 (poster), 2007, 2008 (poster)  
American Economic Association: 2013  
Southern Economic Association: 2006-2007, 2009-2010, 2012-2013  
Western Economic Association: 2007, 2009, 2010, 2011-2013  
NBER summer institute, Children's workshop: 2005  
USDA ERS conference: 2010  
SIEPR Policy Forum, Sports Economics and Policy: 2011  
Symposium on Behavioral Economics and Health: 2011-2013  
Food Marketing Workgroup Conference: 2011  
Western Social Science Association: 2011, 2013  
American Public Health Association: 2012  
Child Development Conference (Norway): 2009  
Intl. Association of Agricultural Economists (China): 2009  
Quadrilateral Behavioural Economics Workshop: 2011  
IZA Conference on Discrimination (Germany): 2011  
Gijon Conference on Sports Economics (Spain): 2010  
National Poverty Center Conference on Religion: 2007  
American Time Use conference: 2005 (poster), 2009  
Mellon Foundation Graduate Education Initiative Conference: 2005  
Intl. Assoc. of Sports Economists Conference: 2005

### **Invited Seminars:**

U. Illinois-Chicago (Feb. 2014); U. South Florida (Nov. 2013); Chicago- Harris School (Nov. 2013); U. Sydney (Aug. 2013); ANU (Aug. 2013); UT Austin (March 2012); Texas A&M (March 2012); Iowa State (Nov. 2011); LSU (March 2011); U. Pennsylvania (Feb. 2011); U. Miami (Feb. 2011); Michigan (Jan 2011); Notre Dame (Nov. 2011); Case Western (Nov 2010); UC Riverside (Oct 2010); UC Denver (April 2010); Washington University (March 2010); Utah Valley University (March 2010); U. British Columbia (Dec. 2009); U. Victoria (Dec. 2009); U. Utah (Dec. 2009); Virginia Tech (Nov. 2009); Florida State (April 2009); U. Washington (Feb 2009); Oregon State (Nov 2008); Baylor (Oct 2008); U. Miami (Oct 2008);

UT-Arlington (April 2008); RAND (Nov 2007); Wharton (May 2006); Cornell (April 2006); U. of Oregon (August 2005)

Brigham Young University: Sociology: (Oct 2007); Statistics (March 2008); Family Studies: (April 2008); Women's Research Institute: (Jan 2009); EIME (March 2010), Nutrition (Oct 2010), Communications (Oct 2013).