



AMERICAN UNIVERSITY
WASHINGTON, D C

Department of Economics
Working Paper Series

The Value of Adoption

by

Mary Eschelbach Hansen

No. 2006-15
December 2006

<http://www.american.edu/cas/econ/workpap.htm>

Copyright © 2006 by Mary Eschelbach Hansen. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

The Value of Adoption^{*}

Mary Eschelbach Hansen^{**}

Abstract

The human services cost of adoption is about half the cost of long-term foster care for children whose birth parents' rights have been terminated. Because adoption is an effective intervention for improving a variety of outcomes for those exposed to adverse childhood experiences, the total savings to government in areas such as special education and criminal justice is of the same magnitude as the child welfare savings. The private benefit to adopted children in terms of additional income earned over their working lives is similarly large. In all, a dollar spent on the adoption of a child from foster care yields about three dollars in benefits.

Key words: adoption, adoption policy, cost-benefit analysis, foster care, net social benefits

JEL classification: D61, J13, J18

^{*} This research was supported by a grant from the Center for Adoption Research at the University of Massachusetts Medical School. The research assistance of Jodi Adams, Wendy Guyker, and Laura Sherbin is much appreciated. Comments from Debra Chaison-Demers, Bradley Hansen, Jennifer E. Macomber, Kara Reynolds, Audrey Smolkin, and John Willoughby have strengthened this paper, as have conversations with Richard Barth and Rita Simon. Remaining errors are the property of the author.

^{**} Department of Economics, American University. Contact: Mary Eschelbach Hansen, Department of Economics, American University, 4400 Massachusetts Avenue, NW, Washington, DC 20016-8029. Email: mhansen@american.edu.

The Value of Adoption

I. Introduction

The total number of minors ever adopted after foster care approaches the size of the foster care caseload (Wulczyn and Hislop 2002). It follows that state and federal expenditures for adoption assistance under Title IV-E of the Social Security Act have grown. Expenditures grew from less than \$400,000 in fiscal year 1981 to \$1.3 billion in fiscal year 2002 (Dalberth et al 2005). The federal adoption assistance budget grew 30 percent between 2000 and 2002 alone (Scarcella et al 2004).

Since 2000, fiscal stress has led several states to attempt to cut adoption assistance spending (North American Council on Adoptable Children [NACAC], 2003; Eckholm, 2005). Some of the cuts have been blocked by the courts, which have made it clear that adoptive parents have legal standing to protect their children's entitlements (*E.C. v. Blunt* (05-0726-CV-W-SOW) and *A.S.W. v. Oregon* (also known as *A.S.W. v. Mink*, 424 F. 3d 970 (9th Cir. 2005)). These decisions effectively require states to take adoption assistance and adoption policy more seriously.

Cutting back on adoption spending may make sense if the cost of adoption exceeds its benefits. Although it is generally believed that benefits to adoption are relatively high (see Barth 1997, for example), neither the private nor social benefit of adoption of children from foster care has been estimated.

The benefits of adoption accrue to the adopted and to society at large. The psychic benefit to the adopted of having a permanent family is, of course, inestimable. It is possible, though, to estimate the private monetary value of adoption in terms of the higher lifetime incomes earned by the adopted relative to those raised in long-term foster care. Offsetting the benefits of adoption are private costs borne by the adoptive parents. It is also possible to estimate the benefits and costs of

adoption to government in terms of the streams of savings from adoption and expenditures on the adopted.

An adoption from foster care costs state and federal government about \$115,000, but saves the government about \$258,000 in child welfare and human service costs, netting a savings of \$143,000 (Barth et al 2006, adjusted for inflation to 2000 dollars). I show that each adoption nets between \$88,000 and \$150,000 in private benefits and \$190,000 to \$235,000 in total public benefits (in constant 2000 dollars). Thus each dollar spent on the adoption of a child from foster care yields between \$2.45 and \$3.26 in benefits to society.

II. Method

In this paper I employ traditional methods of cost-benefit analysis. I limit the scope of the study to the private and social benefits and costs of adoption relative to long term foster care over the childhood and working life of the adopted person.¹ Unlike, most cost-benefit studies, which are based upon data generated by program design, this first cost-benefit analysis of adoption must be based on observations of the adopted and the fostered existing in the clinical and epidemiological literature.

The conduct of a cost-benefit analysis of adoption from foster care requires several steps:

- estimate the effects of adoption on the adopted child,
- estimate the streams of monetary values of benefits and costs associated with the effects,
- calculate the present value of benefits net of costs, and
- conduct a sensitivity analysis.

¹ The reasons why adoption confers benefits on the adopted are thoroughly discussed elsewhere. To summarize: “It is inconceivable that [legal] insecurity has not influenced the relationship between foster parents and the children” (Bohman and Sigvardson, 1990). Adoption, by contrast, “offers higher levels of emotional security, sense of belonging and general well-being” (Triseliotis 2002).

Ideally, cost-benefit analysis includes each consequence of the program to be evaluated. Consequences may be intended effects of the program or unintended effects. The effects of adoption used in this analysis include cognitive and educational effects, health and mental health effects, behavioral effects (including effects on crime), and economic effects. Estimates of the monetary value of the effects of adoption are made using evidence from labor economics and from other cost-benefit studies.

I calculate the net present value of three types of adoption from foster care. The first type is early adoption: a child enters care at the median age of three, experiences stable placement, and is adopted as quickly as possible after termination of parental rights. The second is late adoption: the child enters care at age eight, experiences stable placement and speedy termination and adoption. The third is delayed placement: the child enters care at the median age of three, may experience unstable placement and/or delays in termination, so that adoption does not occur until the child is eight.

At several junctures in the conduct of the analysis, it is necessary to make simplifying assumptions. The final step is to test the sensitivity of the results to the assumptions. The following sections discuss the steps in detail; a summary of the policy implications of the work concludes the paper.

II. A. Effects of Adoption on the Adopted

An ideal cost-benefit analysis of adoption from foster care would be based upon a long-run, detailed, longitudinal study beginning with a random sample of all children at birth. Because foster care and adoption—and especially adoption from foster care—are relatively rare events, the sample would need to be quite large to capture enough observations for statistical analysis. No such study

exists.² In the absence of direct evidence I estimate the benefits of adoption using the clinical and epidemiological evidence accumulated by scholars in various disciplines.

The appendix summarizes the results of dozens of studies of adopted and foster children. The results of the studies are grouped by type of outcome (e.g. cognitive/educational, economic). Studies that report on several types of outcomes appear in all the relevant places in the appendix.

While the exact degree of reversibility of childhood trauma is still a matter of debate in the medical literature, it is clear that when children are removed from dysfunctional and unstimulating or inappropriately stimulating environments, and subsequently adopted by functioning families, they experience significant catch-up. Catch-up effects have been measured for victims of abuse and neglect (Kadushin 1967) and for children rescued from orphanages (Rutter et al 1998). The literature summarized in the appendix contains studies of both children with rocky starts and children relinquished and adopted as infants.

Table 1 summarizes the direction of the effects measured by the studies included in the appendix. Adoption improves good outcomes (such as educational attainment and self-sufficiency) and reduces negative outcomes (such as delinquency and welfare receipt). Mixed evidence exists regarding the emotional and psychological health of the adopted; it appears that adoptive parents are more apt to use mental health services (e.g. Zill 1995).

[insert table 1 about here]

Relatively few studies include subjects in every kind of living arrangement. Many studies compare those fostered to those raised in intact families. Other studies compare the adopted with those raised by their birth parents. A few studies compare the adopted with those born out of

² The National Survey of Child and Adolescent Well-being may eventually provide enough evidence, but more waves will need to be collected first. Existing long-term studies of adoption focus on stability of placement and psychological adjustment (see Rushton (2004) and Triseliotis (2002) for reviews). Psychological health is one of many health outcomes discussed here.

wedlock who would have been candidates for relinquishment and adoption in infancy. An even smaller number of studies identify whether the adopted person was placed in infancy or later in childhood. Only a tiny subset of all studies of adoption (note especially Bohman and Sigvardsson 1990, Brand and Brinich 1999, Dworsky 2005, and Gibbons et al 1995) allow direct comparison of persons who were adopted and fostered. These studies, however, alongside the many studies comparing two groups who were raised in different kinds of families, lead in the same direction.

The preponderance of evidence is that adoption is an effective intervention. Adoption improves the cognitive, educational, health, social, and economic outcomes relative to the children's pre-adoptive status (whether this is a lone parent family as in infant relinquishment or whether it is foster care). Adopted children do better than the characteristics of their pre-adoptive conditions would predict; however, they do not do as well as the characteristics of their adoptive conditions would predict. In other words, catch-up is substantial but not complete.

Table 2 uses this summary fact—that the adopted do better than those fostered-long term but less well than those in intact two-parent birth families—to arrive at a quantitative estimate of the effect of adoption on each type of outcome.

[insert table 2 about here]

The cognitive and educational outcomes studied include IQ, educational progress, special education placements, secondary school completion, and tertiary school attendance. A recent meta-analysis estimates that adoption about doubles measured IQ relative to peers who remain in their original inadequate environment (van Ijzendoorn et al 2005). Educational progress, measured in terms of academic ability and performance on grade level, is 50 percent better. Adopted children are referred to special education about half as often. They are 23 percent more likely to complete high school or its equivalent, and they are twice as likely to obtain additional schooling after secondary school.

Adoption improves health outcomes, but the magnitude of the health effect is smaller than the educational effect. The adopted are about four percent more likely to report being healthy. Self-reports are confirmed by evidence from childhood assessments and hospital or emergency room visits. The adopted are about 20 percent less likely to become parents as teens and about 15 percent less likely to use or abuse alcohol or other substances.

Much of the adoption literature is based on models of adoption that predict adverse psychological effects in adolescence because of identity confusion. Thus there is a large literature on the psychological health of the adopted. The adopted are 200 percent more likely to receive mental health services, but this does not necessarily indicate that adoption causes psychological problems (see reviews by Rushton (2004) and Triseliotis (2002)). It may instead indicate that adoptive parents demand more mental health services than other parents, perhaps because of the fact of adoption, but also because they are primed to expect problems. There are available measurements of malaise, depression and overall well-being in the literature. These reports are mixed. In table 2, the estimate that the adopted are 26 percent less likely to score in the clinical range is based upon the application of the stylized fact that the adopted do better than those fostered long-term but not as well as the population in general to the scores reported in the detailed epidemiological study using the 1970 British Birth Cohort Study (Viner and Taylor 2005).

The effect of adoption on externalizing behaviors among the adopted as children and adolescents is similarly difficult to estimate because the results are mixed. It appears, though, that differences may be driven by small numbers, so that the median adopted child is unlikely to exhibit more negative externalizing behaviors than the median child in the population (Brand and Brinich 1999). I do not report an effect for externalizing behaviors in table 2 because these behaviors are likely to be reflected in better-measured indicators such as school suspension and delinquency.

Whatever difficulties the fact of adoption brings to the adopted, objective measures of the outcomes of adoption are positive. The adopted are 21 percent less likely to be suspended or expelled from school, are about half as likely to be delinquent or arrested, and are 32 percent less likely to be incarcerated. A few studies have attempted to measure the relationship skills acquired by foster children and their overall levels of social connectedness. I estimate that the adopted are 34 percent less likely to have poor interpersonal relationship skills and that they are 60 percent less likely to be socially disconnected as young adults.

Finally, the adopted are more self-sufficient as young adults than the fostered. The final category of outcomes reported by the studies summarized in the appendix is the direct measure of economic outcomes. The adopted are 22 percent more likely to be in the labor force as young adults; they are 15 percent more likely to be employed; and they are 24 percent less likely to be unemployed. They have higher incomes (after adjusting for time spent in school) and lower incidence of welfare program participation.

II. B. Monetary Valuation of Benefits of Adoption

The linchpin of any cost-benefit analysis is the monetary valuation of the benefits. Monetary valuation is necessary because it is the only way the various effects can be aggregated and compared to costs. I begin with estimation of the net private value of adoption, or the value to adoption that is realized by the adopted net of costs to their adoptive families. I then evaluate the net savings to government and to the public at large. Government savings fall into three main categories: (1) reduced costs of education, (2) child welfare/human service savings and (3) savings from reduced crime.

Economists have long recognized the importance of education in adding to earnings power; recent advances in labor economics and micro-econometrics make it possible to assign monetary

values to the other outcomes of adoption in terms of their effects on income. The first column of table 3 shows the best available estimate of the increment to income associated with each measured outcome of adoption.³

A one standard deviation increase in IQ is associated with a four percent increase in earning power, while academic ability is associated with an eight percent increase. Completion of high school has the largest effect—a 37 percent increase in income. Additional years of education add 10 percent to earning power. Good health adds almost five percent to earning power. Teen parenthood is valued through its effect on the high school dropout rate. Avoidance of teen parenthood adds 1.4 percent to income.

A recent theme in the literature on human capital policy has emphasized the importance of psychological and social functioning on wages (Carneiro and Heckman 2003, Heckman and Lochner 2000). Psychological health, measured in the economics literature as the effect of self-esteem, is the second-largest contributor to earning power, adding almost one-third. Avoiding suspension or expulsion increases income by 10.4 percent, while avoiding incarceration increases earning power by 16 percent. Relationship skills, proxied by the effect of sociality in youth, add two percent. Finally, each additional year of employment experience adds 14 percent to earnings power.

³ It would have been possible to use a large number of studies from economics to estimate the average effects of some characteristics (such as education and experience) on income. This method would have resulted in a higher estimate of the effect of these oft-measured characteristics. Instead, I chose a more conservative route and used only the few, recent studies that isolate the effect of education and experience from the effect of other characteristics, such as mental health, affected by adoption. This reduces the chances of double-counting benefits. To simplify the work, I have omitted the marriage premium for men and marriage penalty for women, assuming they cancel each other out in the adopted population. I have also omitted race and gender differences in incomes.

II. B. i. Private Benefits and Costs

The next step is to aggregate the increments in earnings power. Since earnings are correlated with age, I estimate the added earnings from adoption at different stages of life. I assume that the ratio of the earnings of the fostered to the earnings of the median income-earner in the population is constant across all life stages. While this might not be true, the limited follow-up in existing longitudinal studies does not allow more precise estimation of the ratio. In fact, however, the assumption likely results in an underestimate because adoption is associated with greater human capital accumulation and the wages of the skilled and educated have risen more rapidly in recent decades than the wages of the unskilled (Carneiro and Heckman 2003, Krueger 2003, among many).

To estimate the incremental monetary benefits of adoption to the adopted at each age, I take the product of three values: (1) the outcomes of adoption from table 2, (2) the increments to income from column 1 of table 3, and (3) the estimated earnings by the fostered at each age. The estimated age-income profiles of the long-term fostered, the adopted, and the median income-earner in the population are pictured in figure 1. The estimated private benefit to adoption is the sum, across all ages, of the difference in earnings between the fostered and the adoption. This is the area between the income profile of the fostered and the income profile of the adopted.

[insert figure 1 about here]

The added income from adoption at age 30 is shown in column 2 of table 3. For the 30-year-old who was adopted, income is estimated to be about \$9,258 greater than it would have been if the person had been fostered long-term but never adopted. Note that this total is lower than the single direct observation of about \$16,000 (in 2000 dollars) in additional income inferred from Amy Dworsky's (2005) study of young adults in Wisconsin.

[insert table 3 about here]

A final, and substantial, private benefit recorded in table 3 is the value to the adopted of avoiding prison. Based on the work of Joel Waldfogel (1994), I estimate the lifetime private benefit of avoiding prison to be over a year's income.

Costs offset some of the private benefits of adoption. I use the USDA (2000) estimates of average expenditures on children to estimate the added cost to families of helping their adopted children catch up. I assume that family child care, education, and health expenditures on the adopted are 25 percent higher than average. Even though many adoptive families are supported by adoption assistance payments (Dalberth et al 2005, Hansen 2006), adoptive parents report significant expenditures to help their adopted children compensate for their adverse early experiences (Sedlack and Broadhurst 1993, Children's Rights 2006). Additional costs may also be incurred for tertiary schooling. These I have valued at the current tuition at public two-year colleges.

I do not account for opportunity cost of time lost at work to care for an adopted child. Implicitly this assumes that the opportunity cost is not different from the opportunity cost of caring for another child. This may not be the case; however, lost income would have to exceed 3.3 years of median income to erase the benefits of additional income to the child.

II. B. ii. Public Benefits and Costs

The government savings from adoption in child welfare and human services costs reported by Richard Barth and his co-authors (2006) is used here; I adjust their estimates only for inflation. To the human service savings I add the savings to the government and the public from reduced crime. I assume the crime savings from adoption equal the crime savings from the Perry Preschool Project (Schweinhart et al 1993), again adjusted for inflation. Since the median age of entry into care is 3.8 (Barth et al 2006), this seems a reasonable approach. Crime savings include reduced direct cost and imputed cost of crime to the victims. Because the crime savings were estimated at a time

when incarceration costs were lower, the sum of these savings probably underestimates savings today.

Additional governmental savings from adoption come from reduced grade repetitions and reduced use of special education services. Additional governmental costs of completing high school and attending college offset a small fraction of government and public savings.

II. C. Net Present Value

The monetary values in table 3 are all reported in constant 2000 dollars; that is, they are adjusted for inflation. It is necessary also to adjust for the value of time, since a dollar in hand can be used for alternatives that also have value. The discount rate, which represents the annual value of time, is assumed to be 3 percent.

The net present value of the streams of benefits and costs is reported in table 4. The first column assumes adoptive placement occurs at age 3. This is equivalent to assuming that a young child with little chance of reunification is placed with foster parents who are interested in adopting. Such fost-adopt programs are common (Wilson et al 2005). I view this as a best-case scenario: children who are exposed to adverse conditions for a relatively limited time experience the most catch up. The net present value of government and public savings from early adoption is nearly \$235,000. The net present value of private benefits is \$149,000, which is offset by about \$10,000 of private cost. The net present value of early adoption is thus estimated to be about \$375,000.

[insert table 4 about here]

The second column assumes the child enters into care at age 8 and is placed in a stable, eventually adoptive, family. Human service savings are greater for late adoption than for early adoption (Barth et al 2006), but I assume that the benefits of late adoption are half of the benefits of early adoption. The net present value of late adoption is nearly \$302,000.

The final column assumes the child enters care at age 3 but adoption is delayed until age 8. Human service savings are lower, and I again assume benefits are half of those experienced by children adopted early. The net present value of delayed adoption is over \$281,000.

Again, an adoption from foster care costs government about \$115,000 (Barth et al 2006, adjusted for inflation to 2000 dollars). Each dollar spent on adoption returns from \$2.45 to \$3.26 in benefits to society.

II. D. Sensitivity Analysis

In this section I reconsider key assumptions to check that assumptions do not unduly drive the findings reported in the previous section. I alter three assumptions; the results are shown in table 5.

First, I consider the possibility that the discount rate is 6 percent rather than 3 percent. This reduces the net present value of adoption to between \$254,500 and \$311,500, depending upon the age at adoption. Second, I consider that the estimates in table 2 may overstate the true benefits of adoption. If the benefits estimated in table 2 are halved, the present value of adoption is between \$235,500 and \$302,000. If the contributions of outcomes to income reported in table 3 are similarly overstated, then the net present value may be between \$230,000 and \$291,000.

Changing the latter two assumptions moves the estimated age-income profile of the adopted closer to the profile of the fostered in figure 1. This is the same adjustment that would need to be made if the adopted are a non-random sample of the fostered (that is, if the adopted are positively selected such that they are the most able to benefit from adoption). Even if all three assumptions are altered, as shown in the last line of table 5, adoption from foster care has net present value of between about \$214,000 and \$259,000.

[insert table 5 about here]

III. Limitations of the Study

The absence of a large-scale, long-term longitudinal study of children growing up in different arrangements limits our ability to estimate the benefits of adoption with precision. The necessary imprecision of this study, however, is tempered by its self-conscious efforts to underestimate benefits and overestimate costs.

An advantage having a longitudinal study would be the ability to capture the effect of selection bias. Selection bias may occur if the youngest and healthiest waiting children are overrepresented in the adopted population relative to the foster care population from which they are drawn. Countervailing forces exist in adoption policy, though, because adoption promotion is targeted towards children with special needs and especially deprived birth family environments. It is difficult to guess, therefore, the degree to which the benefits of adoption may be overstated in the existing literature. The sensitivity analysis shows that even if there is significant overstatement of the benefits of adoption, the results of the study cannot be invalidated.

Finally, the stability of adoptive placement is not addressed here. If a significant number of the adopted do not remain in their adoptive families, benefits are overstated and child welfare costs are understated. However, recent reviews (e.g. Rushton 2004) show that adoptive placements, even of difficult children, are unlikely to break down. Even when children need more restrictive care than can be provided in the family home, adoptive families maintain responsibility for and contact with their troubled children.

IV. Policy Recommendations

The benefits of adoption from foster care dwarf the costs, however substantial the costs may be. If we wish to capture these benefits to society and wish to improve the life chances of our most

vulnerable citizens, we must “take adoption seriously” (Bartholet 2000). To take adoption seriously we must ensure that all waiting children have a high and equal chance of being adopted.

To take adoption seriously we must educate prospective adoptive parents about the benefits of adoption from foster care: waits can be shorter, some expenses are covered, an unqualified tax credit is available in the year of finalization, and ongoing help with medical and other expenses can be negotiated.

To take adoption seriously we must continue to enforce the Multiethnic Placement Acts. Recent actions taken against Hamilton County, Ohio, and the state of South Carolina indicate that racial matching policies are less likely to be tolerated (Bartholet 2006). However, even subtle hints that transracial placements are inappropriate may reduce the chances of adoption for minority children (Hansen and Pollack 2006).

Finally, to take adoption seriously we must fully fund the federal adoption assistance program. The system of child welfare financing currently in place does not ensure that all children in need of adoptive families have an equal chance of being adopted. Family decisions about adoption are sensitive to post-adoption financial support (Hansen and Hansen 2006), and state offers of post-adoption financial support are sensitive to the availability of federal funding (Dalberth et al 2005). In order for the state to claim federal reimbursement of child welfare and adoption expenditures on a child, the child must have state-defined special needs and must either qualify for federal Supplemental Security Income or must have been removed from a family that would have qualified for benefits under Aid to Families with Dependent Children at the time of removal. Of course, because AFDC was replaced by the Temporary Assistance for Needy Families, AFDC eligibility criteria are no longer updated. Therefore, fewer waiting children are likely to be IV-E eligible in the future. States wishing to secure the benefits of adoption from foster care could therefore see an untenable increase in their fiscal obligations if there is no change in the federal

definition of IV-E eligibility. A 2004 Pew Commission report suggested de-linking adoption assistance from the out-dated AFDC criteria (Pew Commission, 2004), and Senator Rockefeller and Representatives Herger and Cardin introduced bills intended to free states from the worry that federal matching funds will disappear. However, none of these bills emerged from committee.⁴ Capturing the benefits of adoption in the future requires action now.

⁴ Most recently, Sen. John D. Rockefeller (D-WV) introduced S. 1539 (A bill to amend part E of title IV of the Social Security Act to promote the adoption of children with special needs) on July 28, 2005. Rep. Benjamin Cardin (D-MD) introduced H.R. 1534 (Child Protective Services Improvement Act) on April 1, 2003. Rep. Herger introduced H.R. 4856 (Child Safety, Adoption, and Family Enhancement Act) on July 19, 2004.

References

- Barth, Richard, P. (1997). "The Value of Special Needs Adoption." In Rosemary Avery (ed.), *Adoption Policy and Special Needs Children* (New York: Auburn House), 171-204.
- Barth, Richard P., Chung Kwon Lee, Judith Wildfire, and Shenyang Guo (2006). A comparison of the governmental costs of long-term foster care and adoption. *Social Service Review*, 80(1), 127-158.
- Bartholet, Elizabeth (2000). *Nobody's Children* (Boston: Beacon Press).
- Bartholet, Elizabeth (2006). "Multiethnic Placement Act Enforcement Decisions." ONLINE. Available: <http://www.law.harvard.edu/faculty/bartholet/mepa.php> (last accessed December 6, 2006).
- Benedict, Mary I., Susan Zurvain, and Rebecca Y. Stallings (1996). "Adult Functioning of Children Who Lived in Kin Versus Non-Relative Family Foster Homes." *Child Welfare* 75(5): 529-549.
- Blome, Wendy Whiting (1997). "What Happens to Foster Kids: Educational Experiences of a Random Sample of Foster Care Youth and a Matched Group of Non-Foster Care Youth." *Child and Adolescent Social Work Journal* 14(1): 41-54.
- Bohman, Michael, and Soren Sigvardsson (1990). "Outcome in Adoption: Lessons from Longitudinal Studies." In D.M. Brodzinsky and M.D. Schecher (eds). *The Psychology of Adoption* (New York: Oxford University Press): 93-106
- Borders, L DiAnne; Lynda K Black; B. Kay Pasley (1998). "Are Adopted Children and Their Parents at Greater Risk for Negative Outcomes?" *Family Relations* 47(3): 237-241.
- Brand, Ann E., and Paul M. Brinich (1999). "Behavior Problems and Mental Health Contacts in Adopted, Foster and Nonadopted Children." *Journal of Child Psychology, Psychiatry, and Allied Fields* 40(8): 1221-1229.

- Broghans, Lex, Bas ter Weel, and Bruce A. Weinberg (2006). "People People: Social Capital and the Labor-Market Outcome." IZA Discussion Paper 194. ONLINE. Available: <http://ssrn.com/abstract=670207> (last accessed November 20, 2006).
- Carneiro, Pedro and James J. Heckman (2003). "Human Capital Policy." In Alan B. Krueger and James J. Heckman (eds.), *Inequality in America: What Role for Human Capital Policies* (Cambridge, MA: The MIT Press): 77-240.
- Cheung, S.Y., and A. Buchanan (1997). "Malaise Scores in Adulthood of Children and Young People Who Have Been in Care." *Journal of Child Psychology, Psychiatry and Allied Fields* 38: 575-580.
- Children's Rights (2006). "Ending the Foster Care Life Sentence: The Critical Need for Adoption Subsidies." ONLINE. Available: <http://www.childrensrights.org/pdfs/FINAL%20ADOPTION%20SUBSIDY%20DATA%20REPORT.doc.pdf> (last accessed August 20, 2006).
- Cook, R. (1991). "A National Evaluation of Title IV-E Foster Care Independent Living Program for Youth: Phase 2 Final Report." Manuscript. Rockville, MD: Westat.
- Courtney, Mark E., Irving Piviavin, Andrew Grogan-Kaylor, and Ande Nesmith (2001). "Foster Youth Transitions to Adulthood: A Longitudinal View of Youth Leaving Care." *Child Welfare* 80(6): 685-717.
- Courtney, Mark E., Amy Dworsky, Gretchen Ruth, Tom Keller, Judy Havlicek, and Noel Bost (2005). "Midwest Evaluation of the Adult Functioning of Former Foster Youth." *Chapin Hall Working Paper*. ONLINE. Available: http://www.chapinhall.org/article_abstract.aspx?ar=1355 (last accessed November 15, 2006).

- Dalberth, Barbara, Deborah Gibbs, and Nancy Berkman (2005). "Understanding Adoption Subsidies: An Analysis of AFCARS Data: Final Report." ONLINE. Available: <http://aspe.hhs.gov/hsp/05/adoption-subsidies/index.htm> (last accessed November 30, 2006).
- Dumaret, Annick, Camille Coppel-Batch, and Simone Couraud (1997). "Adult Outcomes of Children Reared for Long-Term Periods in Foster Care." *Child Abuse and Neglect* 21(10): 911-927.
- Dworsky, Amy, and Mark E. Courtney, Mark E. (2000). "Self-Sufficiency of Former Foster Youth in Wisconsin: Analysis of Unemployment Insurance Wage Data and Public Assistance Data." Institute for Research on Poverty Special Report 81. ONLINE. Available: <http://www.irp.wisc.edu/publications/sr/pdfs/sr81.pdf> (last accessed December 6, 2006).
- Dworsky, Amy (2005). "The Economic Self-Sufficiency of Wisconsin's Former Foster Youth." *Children and Youth Services Review* 27: 1085-1118.
- Dworsky, Amy (2006). Personal communication via e-mail. October 26, 2006.
- Eckholm, Erik (2005). "Law Cutting Adoption Payments Is Faulted." *New York Times*, Aug. 16, A9.
- Fergusson, David M., and L. John Horwood (1998). "Adoption and Adjustment in Adolescence." *Adoption and Fostering* 22(1): 7-15.
- Fergusson, David M., Michael Lynskey, and L. John Horwood (1995). "The Adolescent Outcomes of Adoption: A 16-Year Longitudinal Study." *Journal of Child Psychology, Psychiatry and Allied Fields* 36(4): 597-615.
- Festinger, Trudy (1983). *No One Ever Asked Us* (New York: Columbia University Press).
- Gibbons, Jane, Bernard Gallagher, Caroline Bell, and David Gordon (1995). *Development after Physical Abuse in Early Childhood*. London: HMSO.

- Goerge, Robert M. Lucy Bilaver, Bong Joo Lee, Barbara Needell, Alan Brookhart, William Jackman (2002). "Employment Outcomes for Youth Aging Out of Foster Care." ONLINE. Available: <http://aspe.hhs.gov/hsp/fostercare-agingout02/> (last accessed December 5, 2006).
- Goldsmith, Arthur H., Jonathan R. Veum, and William Darity, Jr. (1997). "The Impact of Psychological and Human Capital on Wages." *Economic Inquiry* 35(October): 815-29.
- Mary Eschelbach Hansen (2006). "Title IV-E Claims and Adoption Assistance Payments." AFCARS Adoption Data Research Brief Number 5. ONLINE. North American Council on Adoptable Children. Available: <http://www.nacac.org/pdfs/AFCARStitleivepayments.pdf> (last accessed August 24, 2006).
- Hansen, Mary Eschelbach, and Bradley A. Hansen (2006). "An Economic Analysis of the Adoption of Children from Foster Care" (with Bradley Hansen), *Child Welfare* 85, 3(May/June 2006), pp. 559-583.
- Hansen, Mary Eschelbach, and Daniel Pollack (2006). "The subtleties of race and recruitment in foster care and adoption." *California NASW News* 32, 8: 6.
- Hansen, Robin L., Fatema Lakhani Mawjee, Keith Barton, Mary B. Metcalf, and Nancy R. Joye (2004). "Comparing the Health Status of Low-Income Children In and Out of Foster Care." *Child Welfare* 83(4): 367-380.
- Heckman, James J., and Lance Lochner (2000). "Rethinking Education and Training Policy: Understanding the Sources of Skill Formation in a Modern Economy". In Sheldon Danziger and Jane Waldfogel (eds.), *Securing the Future* (New York: Russell Sage Foundation): 47-83.
- Illinois Dept. of Human Services (2006). "Facts about TANF." ONLINE. <http://www.dhs.state.il.us/ts/fss/tanfStatistics.asp> (last accessed November 15, 2006).

- Jones, Melanie K., Paul L. Latreille, and Peter J. Sloane (2006). "Disability, Gender, and the British Labour Market." *Oxford Economic Papers* 58: 407-449.
- Kadushin, A. (1967). "Reversibility of Trauma: A Follow Up Study of Children Adopted When Older." *Social Work* 12: 22-33.
- Thomas Kane and Cecelia Rouse (1995). "Labor Market Returns to Two- and Four-year College," *American Economic Review*, 85 no. 3 (June 1995): 600-614.
- Kerman, Benjamin, Judith Wildfire, and Richard Barth (2002). "Outcomes for Young Adults Who Experienced Foster Care." *Children and Youth Services Review* 24(5): 319-344.
- Kreider, Rose (2003). "Adopted Children and Stepchildren: 2000." *Census 2000 Special Reports*. ONLINE. Available: <http://www.census.gov/prod/2003pubs/censr-6.pdf> (last accessed 18 May 2006).
- Krueger, Alan, B. (2003). "Inequality: Too Much of a Good Thing." In Alan B. Krueger and James J. Heckman (eds.), *Inequality in America: What Role for Human Capital Policies* (Cambridge, MA: The MIT Press): 1-76.
- Levine, David I., and Gary Painter (2003). "The Schooling Costs of Teenage Out-of-Wedlock Childbearing: Analysis with a Within-School Propensity-Score-Matching Estimator." *The Review of Economics and Statistics* 85(4): 884-900.
- MDRC (2006). "Food Stamp Caseload Dynamics." ONLINE. Available: <http://www.mdrc.org/publications/420/overview.html> (last accessed November 15, 2006).
- Maughn, Barbara, and Andrew Pickles (1990). "Adopted and Illegitimate Children Growing Up." In Lee N. Robbins and Michael Rutter (eds). *Straight and Devious Pathways from Childhood to Adulthood* (Cambridge: Cambridge University Press): 36-61.

- Maughan, Barbara, Stephan Collishaw, and Andrew Pickles (1998). "School Achievement and Adult Qualifications among Adoptees: A Longitudinal Study." *Journal of Child Psychology, Psychiatry and Allied Fields* 39(5): 669-685.
- McCann, J.B., A. James, S. Wilson, and G. Dunn (1996). "Prevalence of Psychiatric Disorders in Young People in the Care System." *British Medical Journal* 313: 1524-1527.
- McMillan, J.Curtis, and Jayne Tucker (1999). "The Status of Older Adolescents at Exit from Out-of-Home Care." *Child Welfare* 78(3): 339-360.
- National Law Center on Homelessness and Poverty (2004). "Key Data Concerning Homeless Persons in America." ONLINE. Available: http://www.nlchp.org/FA_HAPIA/HomelessPersonsInAmerica.pdf (last accessed November 30, 2006).
- National Education Association [NEA] (2006). "Special Education and the Individuals with Disabilities Education Act." ONLINE. Available: <http://www.nea.org/specialed/index.html> (last accessed November 30, 2006).
- North American Council on Adoptable Children [NACAC] (2003). "Preserving Adoption Support Programs: Parents Can Make a Difference. ONLINE. <http://www.nacac.org/subsidyfactsheets/difference.html> (last accessed August 23, 2006).
- Pew Commission on Children and Foster Care (2004). "Fostering the Future: Safety, Permanence and Well-Being for Children in Foster Care." ONLINE. Available: <http://pewfostercare.org/research/docs/FinalReport.pdf> (last accessed April 30, 2006).
- Plug, Erik and Wim Vijverberg (2003). "Schooling, Family Background, and Adoption: Is It Nature or Is It Nurture?" *Journal of Political Economy* 111(3): 611-641.
- Prosser, William R. (1997). "Family Structure, Substitute Care, and Educational Achievement." *Institute for Research on Poverty Discussion Paper* 1140-97. ONLINE. Available: <http://www.irsop.uiowa.edu/pubs/discussionpapers/1140-97/>

- <http://www.irp.wisc.edu/publications/dps/pdfs/dp114097.pdf> (last accessed December 5, 2006).
- Reilly, Thomas (2003). "Transition from Care: Status and Outcomes of Youth Who Age Out of Foster Care." *Child Welfare* (6): 727-746.
- Ringel, Jeanne S., Phillis L. Ellickson, and Rebecca L. Collins (2006). "The Relationship between High School Marijuana Use and Annual Earnings among Young Adult Males." *Contemporary Economic Policy* 24(1): 52-63.
- Rushton, Alan (2004). "A Scoping and Scanning Review of Research on the Adoption of Children Placed from Public Care." *Clinical Child Psychology and Psychiatry* 9(1): 89-106.
- Rutter, Michael, and the English and Romanian Adoptees Study Team (1998). "Developmental Catch-up, and Deficit, Following Adoption after Sever Global Early Privation." *Journal of Child Psychology, Psychiatry and Allied Disciplines* 39(4): 465-476.
- Scarcella, Cynthia Andrews; Roseana Bess, Erica Hecht Zielewski, Lindsay Warner, and Rob Geen (2004). *The Cost of Protecting Vulnerable Children IV*. (Washington, DC: Urban Institute).
- Schweinhart, Lawrence J., Helen V. Barnes, David P. Weikart (1993). *Significant Benefits: The High/Scope Perry Preschool Study through Age 27* (Yipsalanti: The High/Scope Press).
- Sedlack, Andrea, and Diane Broadhurst (1993). *Study of Adoption Assistance Impact and Outcomes: Final Report*. Manuscript. Submitted to the Administration for Children, Youth and Families, DHHS, Contract No. 105-89-1607.
- Taussig, H.N., R.B. Clyman, and J. Landsverk (2001). "Children Who Returned Home from Foster Care: A 6-year Prospective Study of Behavioral Health Outcomes in Adolescence." *Pediatrics* 108: 1-7.
- Triseliotis, John, and J. Russell (1984). *Hard to place: The outcome of adoption and residential care* (London: Heinemann Educational Books).

- Triseliotis, John (2002). "Long-Term Foster Care or Adoption? The Evidence Examined." *Child and Family Social Work*. 7: 23-33.
- US Bureau of the Census (2006). "Historical Income Tables-Households." ONLINE. Available: <http://www.census.gov/hhes/income/histinc/h10.html> (last accessed November 30, 2006).
- USDA (2000). "Expenditures on Children by Families: 2000 Annual Report" ONLINE. Available <http://www.usda.gov/cnpp/Crc/Crc2000.pdf> (last accessed November 30, 2006).
- USDA (2006). "Food Stamp Program." ONLINE. Available: <http://www.ers.usda.gov/Briefing/FoodStamps/> (last accessed November 30, 2006).
- US Dept. of Education [DOE] (2006). "Community College Facts at a Glance." ONLINE. Available: <http://www.ed.gov/about/offices/list/ovae/pi/cclo/ccfacts.html> (last accessed November 30, 2006).
- US DOJ (2006). "Prison Statistics." ONLINE. Available: <http://www.ojp.usdoj.gov/bjs/prisons.htm> (last accessed November 30, 2006).
- Van Ijzendoorn, Marinus H., Femmie Juffer, and Caroline W. Klein Poelhuis (2005). "Adoption and Cognitive Development: A Meta-Analytic Comparison of Adopted and Nonadopted Children's IQ and School Performance." *Psychological Bulletin* 131(2): 301-316.
- Viner, Russell M., and Brent Taylor (2005). "Adult Health and Social Outcomes of Children Who Have Been in Public Care: Population-Based Study." *Pediatrics* 115(4): 894-899.
- Waldfoegel, Joel (1994). "The Effect of Criminal Conviction on Income and the Trust 'Reposed in the Workmen?'" *The Journal of Human Resources* 29(1): 62-81.
- Wilson, Julie, Jeff Katz and Rob Geen (2005). "Listening to Parents: Overcoming Barriers to the Adoption of Children from Foster Care." KSG Working Paper No. RWP05-005. ONLINE. Available: <http://ssrn.com/abstract=663944> (last accessed September 15, 2006).

Wulczyn, Fred, and Kristin Hislop (2002). "Growth in the Adoption Population." ONLINE.

Available: <http://aspe.hhs.gov/HSP/fostercare-issues02/adoption/index.htm> (last accessed November 30, 2006).

Zax, Jeffrey S., and Daniel I. Rees (2002). "IQ, Academic Performance, Environment and Earnings." *The Review of Economics and Statistics* 84(4): 600-16.

Zill, Nicholas (1995). "Adopted Children in the United States: A Profile Based on a National Survey of Child Health." *Serial 104-33*. Testimony before Committee on Ways and Means, Subcommittee on Human Resources (May 10).

Table 1: Summary of Outcomes by Placement Type

	Adopted: Fostered	Adopted: Kin or Lone Parent	Adopted: Population	Foster: Population	No. of Studies
<u>Cognitive/Educational Outcomes</u>					
Preschool development	+		+		2
IQ		+	nd		48
Ability/on grade level	+	+	-	-	62
Special education referral/placement			+	+	9
Completed high school or equivalent	+	+	+	-	10
College attendance/degree/diploma	+	+	-	-	6
Years of education	+			-	2
<u>Health Outcomes</u>					
Self-reported healthy			+	-	4
Prevalence of disability			+		1
Childhood assessments			+	-	2
Childhood hospital/ER visits			-	+	2
Teen parenthood				+	6
Substance abuse				+	4
Emotional/psychological health	mixed	+	mixed	-	12
Overall well-being	+				2
<u>Non-Cognitive or Social Outcome</u>					
Behavior problem (externalizing)	-	-	+	+	7

Suspended/expelled from school		nd	+	2
Delinquent or arrested	-	+	+	9
Ever incarcerated			+	2
Homeless			+	3
Relationship skills	+			2
Social connectedness			-	3

Economic Outcomes

Labor force participation		+	-	6
Employment	+	+	-	4
Unemployment	-			2
Income		+	-	7
Welfare participation	-	-	+	4
Self-sufficiency	+			2

Notes: nd indicates no difference.

Sources: See Appendix.

Table 2: Benefits of Adoption

		Estimated Effect	Source/Method:
<u>Cognitive/ Educational Outcomes</u>			
IQ	117	percent higher	Meta analysis, van Ijzendoorn et al 2005
Ability/on grade level	50	percent more likely	Meta analysis, van Ijzendoorn et al 2005
Special education referral/placement	55	percent less likely	Meta analysis, van Ijzendoorn et al 2005
Completed high school or equivalent	23	percent more likely	Midpoint between foster care and control/comparison
College attendance/degree/diploma	110	percent more likely	Midpoint between foster care and control/comparison
<u>Health Outcomes</u>			
Self-reported healthy	4	percent more likely to report healthy	Midpoint between foster care and control/comparison
Childhood assessments	7	percent higher on index	Midpoint between single parent and population
Childhood hospital/ER visits	25	percent fewer	Midpoint between single parent and population, Zill 1995
Teen parenthood	19	percent less likely	Midpoint between foster care and control/comparison
Substance abuse	16	percent less likely	Midpoint between foster care and control/comparison
Emotional/psychological health	26	percent less likely to be in clinical range	Midpoint between foster care and control/comparison, Viner & Taylor 1995
	200	percent more likely to seek treatment	Difference between single parent and adopted, Zill 1995
<u>Non-Cognitive or Social Outcomes</u>			
Behavior problem (externalizing)		Not estimated	Mixed results, correlated with other outcomes
Suspended/expelled from school	21	percent less likely	Average of midpoint between foster and pop. & adopted and pop.
Delinquent or arrested	54	percent less likely	Midpoint between foster care and

			control/comparison
Ever incarcerated	32	percent less likely	Midpoint between foster care and control/comparison (a)
Poor relationship skills	34	percent less likely	Midpoint between foster care and control/comparison
Socially disconnected	60	percent less likely	Midpoint between foster care and control/comparison

Economic Outcomes

Labor force participation	22	percent more likely	Midpoint between foster care and control/comparison
Employment	15	percent more likely	Midpoint between foster care and control/comparison
Unemployment	24	percent less likely	Midpoint between foster care and control/comparison
Income	75	percent higher	Midpoint between foster care and control/comparison (c)
Homeless	47	percent less likely	Midpoint between foster care and control/comparison (b)
Quarters of TANF receipt	68	percent fewer	Dworsky 2006
Quarters of food stamp receipt	53	percent fewer	Dworsky 2006

(a) Based on 1995 national incarceration rate. US DOJ 2006.

(b) Based on 2004 homelessness rate. NLCHP 2004.

(c) Based on 1990 median income of \$30,000.: US Bureau of the Census 2006

Table 3: Monetary Benefits and Costs of Adoption

	Addition to Annual Income (%)	Annual Addition to Pre-Tax Private Income at Age 30 (a)	Total Addition to Private Savings (Cost)	Total Other Gov't Savings (Cost)	Child Welfare Savings from Adoption (b)
					143,302*
<u>Cognitive/ Educational Outcomes</u>					
IQ	4.0 (c)	718	(4,141)*(d)		
Ability/on grade level	8.0 (e)	614		3,776 (f)	
Special education referral/placement	(g)			999 (f)	
Completed high school or equivalent	37.0 (h)	1,306		(1,737) (f)	
College attendance/degree/diploma	10.0 (i)	1,688	(1,558) (j)	(6,164) (j)	
<u>Health Outcomes</u>					
Self-reported healthy					
Childhood assessments	4.6 (k)	28	(2,899)*(l)	(m)	
Childhood hospital/ER visits					
Teen parenthood	1.4 (n)	41		(m)	
Substance abuse	7.5 (o)	184		(m)	
Emotional/psychological health	33.0 (p)	1,316	(q)	(m)	
<u>Non-Cognitive or Social Outcomes</u>					
Behavior problem (externalizing)					
Suspended/expelled from school	10.4 (r)	734		1967 (s)	
Delinquent or arrested					
Ever incarcerated	16.0 (t)	1,669	37,908 (t)	86,383* (u)	
Poor relationship skills	2.0 (v)	203			

Socially disconnected (g)

Economic Outcomes

Labor force participation (g)

Employment 14.0 (e) 466

Unemployment 14.0 (e) 746

Income 16,646 (x)

Ever Homeless 14.0 (w) 758

Quarters of TANF receipt (g) 2,048 (y)

Quarters of food stamp receipt (g) 12 (z)

*Net present value (not annual value).

(a) Annual values based on median personal income in constant 2000 dollars (US Bureau of the Census 2006).

(b) Savings from adoption. Assumed entry into care at median age of 3.8 (Barth et al 2006).

(c) Effect of a one standard deviation difference in IQ (Zax and Rees 2002).

(d) Expenditures on child care and education assumed to be 25 percent higher than average in 2000 (USDA 2000).

(e) Goldsmith et al (1997).

(f) Regular and special education costs from NEA (2006).

(g) Benefit not estimated. Assumed to affect income through other channels.

(h) Difference in wages with and without high school degree (Krueger 2003).

(i) Affect of a two year college degree (Kane and Rouse 1995).

(j) Tuition and public expenditure on public two-year colleges from US DOE (2006).

(k) Difference in log wages between disabled and non-disabled. (Jones et al 2006).

(l) Expenditures on child care and education assumed to be 25 percent higher than average in 2000 (USDA 2000). Includes expenditure on mental health.

(m) Included in additional health expenditures. Medicaid included in Barth et al (2006).

(n) 20 percent more likely to dropout (Levine and Painter 2006).

- (o) Effect of marijuana use (Ringel et al 2006).
- (p) Effect of self-esteem (Goldsmith et al 1997).
- (q) Included in additional health expenditure.
- (r) Average of breach of trust effects for reported crimes (Waldfoegel 1994).
- (s) Cost of suspension/expulsion assumed equal to cost of one year special education (NEA 2006).
- (t) Average across crimes reported (Waldfoegel 1994).
- (u) Crime savings of Perry Preschool Project (Schweinhart et al 1993).
- (v) Effect of youth sociability on adult wages (Borghans et al 2006).
- (w) Value of a year's work experience (Goldsmith et al 1997).
- (x) Difference in income during first two years after emancipation (Dworsky 2006).
- (y) Based on average monthly benefit*5 year limit (Illinois Dept. of Human Services 2006).
- (z) Based on average monthly benefit*3/36 month limit (USDA ERS 2006, MDRC 2006).

Table 4: Net Present Value of Adoption: Baseline Estimates

	3 Year Old (a)	8 Year Old (b)	Delayed (c)
<u>Net Present Value of Government Savings</u>			
Child Welfare	143,302	167,581	146,581
Crime	86,383	43,192	43,192
Other	4,833	397	397
<i>Subtotal</i>	<i>234,518</i>	<i>211,169</i>	<i>190,169</i>
<u>Net Present Value of Private Costs</u>			
Health & Education	(8,747)	(4,526)	(4,526)
<u>Net Present Value of Private Benefits</u>			
Incarceration	23,623	13,693	13,693
Income	125,427	74,883	74,883
<i>Subtotal</i>	<i>149,050</i>	<i>88,576</i>	<i>88,576</i>
Total	374,821	302,418	281,418

Discount rate=3%.

In constant 2000 dollars.

(a) Child adopted at earliest possible time after entering care at median age of 3.

(b) Child adopted at earliest possible time after entering care at age 8. Benefits reduced by half. Costs and benefits realized 5 years earlier.

(c) Child enters care at 3 but is not adopted until age 8. Additional direct costs of foster care incurred.

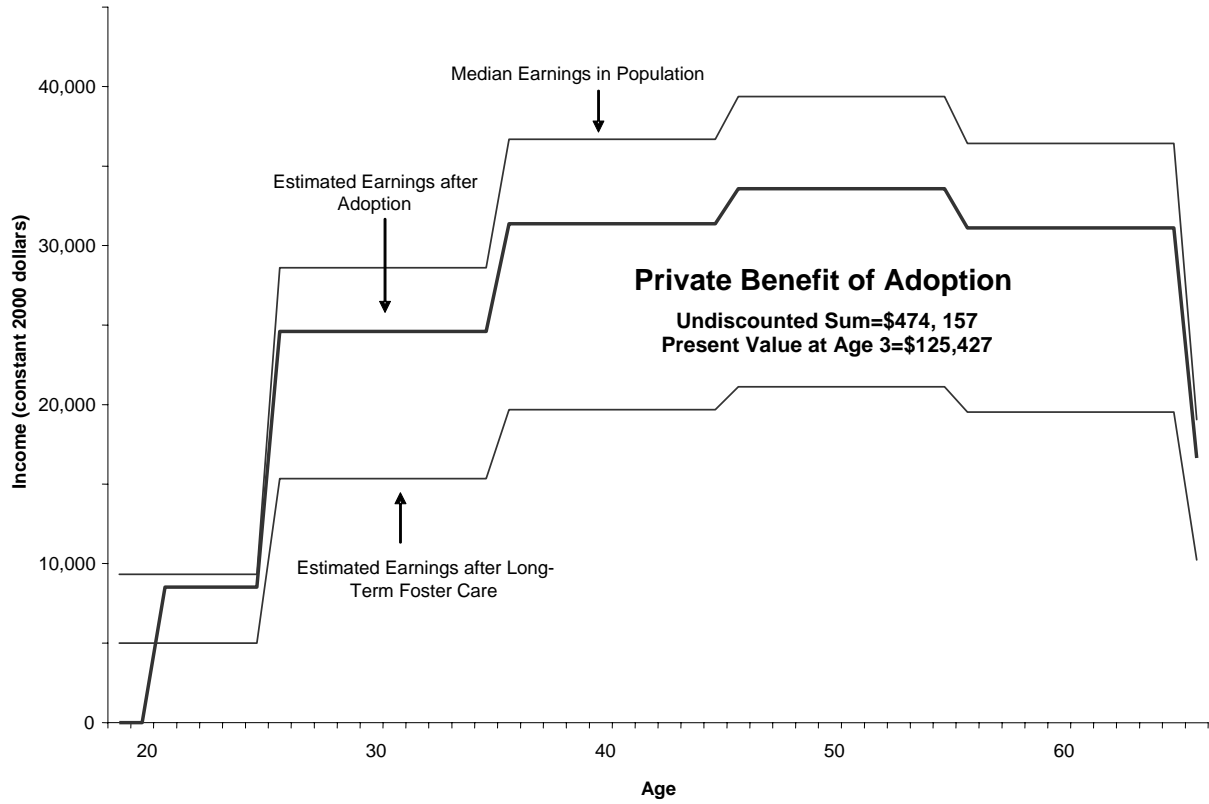
Table 5: Net Present Value of Adoption: Sensitivity Analysis

	3 Year Old	8 Year Old	Delayed
Discount rate of 6%	311,481	275,576	254,576
Benefit of adoption overstated 50 percent	302,253	256,595	235,595
Contribution of benefit to income overstated by 50 percent	291,633	260,715	239,715
Discount rate of 6% & Benefit of adoption overstated	270,583	243,174	222,174
Discount rate of 6% & Contribution to income overstate	267,921	253,718	232,718
Discount rate of 6% & Benefit of adoption overstated & Contribution to income overstated	258,765	234,823	213,823

Constant 2000 dollars.

Figure 1

Estimated Earnings and Private Benefit of Adoption



APPENDIX 1: Measured Effects of Adoption

Outcome Measure	Adopted	Foster Care	Single Parent	Population/ Comparison Group	Age at time of study	Time	Location	Source	Notes
Cognitive or Educational Outcome									
Good developmental outcome	>25%	<15%		20%	11-15	Registered in 1991	Sample of Preschool Children on English Child Protection Registers	Gibbons et al 1995	Comparison is reported abused/neglected but never in out-of-home care.
IQ	higher			lower	meta	analysis	varied	van Ijendoorn et al 2005	Comparison is peers "left behind" (i.e. unadopted). Includes Romanian & English adoption study.
IQ	no diff.			no diff.	meta	analysis	varied	van Ijendoorn et al 2005	Comparison is peers in adoptive families (i.e. siblings).
Below grade level in reading		74%			18-20	1995-6	WI	Courtney et al 2001	
Elementary school reading level	average		low	average	7	1991	National Child Development Study (UK)	Maughan et al 1998	Males. Comparison is raised by married birth parents.
Elementary school reading level	average		average	average	7	1991	National Child Development Study (UK)	Maughan et al 1998	Females. Comparison is raised by married birth parents.
General academic ability	average		low	average	11	1991	National Child Development Study (UK)	Maughan et al 1998	Comparison is raised by married birth parents.
Grades/academic achievement	higher			lower	meta	analysis	varied	van Ijendoorn et al 2005	Comparison is peers "left behind" (i.e. unadopted).
Grades/academic achievement	lower			higher	meta	analysis	varied	van Ijendoorn	Comparison is peers "left behind" (i.e.

								et al 2005	unadopted)
In lower half of class	56%		31%	38%	under 17	1998	National Health Interview Survey	Zill 1995	Comparison is living with two birth parents. Living with grandparents=31%.
Linguistic test scores	5.18	4.52	4.86	5.15	18	born mid-1950s	Stockholm, Sweden	Bohman & Sigvardsson 1990	Male. Tests at military enlistment.
Logic test score	5.24	4.44	4.87	5.46	18	born mid-1950s	Stockholm, Sweden	Bohman & Sigvardsson 1990	Male. Tests at military enlistment.
Repeated a grade	16%		60%	13%	under 17	1998	National Health Interview Survey	Zill 1995	Comparison is living with two birth parents. Living with grandparents=59%.
Repeated a grade	7%		26%	12%	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted in first year of life.
Repeated a grade	30%			12%	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted after first year of life.
Satisfactory high school progress		63%		84%	about 16	1980 base year	High School & Beyond	Blome 1997	Comparison is national sample.
Satisfactory high school progress		64%			17+	1992-93	MO	McMillan & Tucker 1999	
Spatial test scores	5.53	4.77	5.34	5.30	18	born mid-1950s	Stockholm, Sweden	Bohman & Sigvardsson 1990	Male. Tests at military enlistment.
Technical test scores	4.96	4.22	4.40	4.91	18	born mid-1950s	Stockholm, Sweden	Bohman & Sigvardsson 1990	Male. Tests at military enlistment.
Ever had special education placement		37%			18-20	1995-6	WI	Courtney et al 2001	
Special education referral	+19%				meta	analysis	varied	van Ijendoorn et al 2005	Comparison is peers in adoptive families (i.e. siblings).

Special education referral	-55%%			meta analysis	varied	van Ijendoorn et al 2005	Comparison is peers left behind (i.e. unadopted).	
Graduated high school/GED	58%			mean of 23	1993-94	Baltimore, MD	Benedict et al 1996	
Graduated high school/GED	77%	93%		about 16	1980 base year	High School & Beyond	Blome 1997	Comparison is national sample.
Graduated high school/GED	48%	85%		age out	1980s	US National	Cook 1991	Comparison is population average.
Graduated high school/GED	63%			18-20	1995-6	WI	Courtney et al 2001	
Graduated high school/GED	60%	90%		19	2002-04	Midwest	Courtney et al 2005	Comparison is national sample.
Graduated high school/GED	7%	32%		aveage 27.8	left care 1972-84	France, agency-based study	Dumaret et al 1997	Comparison is "national norms".
Graduated high school/GED	69%			mean of 20	late 1990s	NV	Reilly 2003	
Left school with no qualifications	2.90%	17%	9%	33	1991	National Child Development Study (UK)	Maughan et al 1998	Male. Comparison is raised by married birth parents.
Left school with no qualifications	3.40%	24%	14%	33	1991	National Child Development Study (UK)	Maughan et al 1998	Female. Comparison is raised by married birth parents.
Left school with no qualifications	40%	29%		30	2000	1970 British Birth Cohort Sutdy	Viner & Taylor 2005	Male. Comparison is sample of children with no history of public care.
Left school with no qualifications	35%	25%		30	2000	1970 British Birth Cohort Sutdy	Viner & Taylor 2005	Female. Comparison is sample of children with no history of public care.
Less than high school	62%	52%		22-25	1979	NYC	Festinger 1983	Comparison is national sample.
College attendence	9%			18-20	1995-6	WI	Courtney et al 2001	

College attendance	18%		62%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Ever attended college	30%			20	late 1990s	NV	Reilly 2003	
High attainment (≥ 2 A levels or degree/diploma)	24%	10%	25%	33	1991	National Child Development Study (UK)	Maughan et al 1998	Male. Comparison is raised by married birth parents.
High attainment (≥ 2 A levels or degree/diploma)	15%		32%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Male. Comparison is sample of children with no history of public care.
High attainment (≥ 2 A levels or degree/diploma)	26%		33%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Female. Comparison is sample of children with no history of public care.
High attainment (≥ 2 A levels or degree/diploma)	28%	13%	24%	33	1991	National Child Development Study (UK)	Maughan et al 1998	Female. Comparison is raised by married birth parents.
Completed years of education	+1.8			born circa 1939	1957-1992	WI Longitudinal Survey	Plug & Vijverberg 2003	Comparison is sample raised by birth parents
Completed years of education	+0.4	-1.7	-1.3	mean of 25	1980s	NLSY	Prosser 1997	Single parent group includes kinship care.
Health Outcome								
Self-reported "excellent" health	56%	41	55%	under 17	1998	National Health Interview Survey on Child Health	Zill 1995	Comparison is living with two birth parents. Living with grandparents=39%
Self-reported healthy	78%			mean of 23	1993-94	Baltimore	Benedict et al 1996	
Self-reported healthy	54%			mean of 20	late 1990s	NV	Reilly 2003	
Self-reported healthy	78%		85%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Male. Comparison is sample of kids with no history of public care.

Self-reported healthy		79%	85%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Female. Comparison is sample of kids with no history of public care.
At least one disability	12%		5%	5-17	2000	US Census	Kreider 2003	All adopted children.
Mental disability	10%		4%	5-17	2000	US Census	Kreider 2003	All adopted children.
Health status index (median=50)	51.7	45.4	50.9	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted in first year of life.
Health status index (median=50)	51.5	45.4	50.9	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted after first year of life.
Medical/dental assessments		worse	better	5	1990s	Sacramento, CA	Hansen et al 2004	Comparison is Medicaid-eligible kids not in care.
ER Visits		more	less	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Hospital visits in past year (per 100 children)	2.1	8.2	4.5	under 17	1998	National Health Interview Survey	Zill 1995	Comparison is living with two birth parents. Living with grandparents=39%
Teen fatherhood	13%		6%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Teen motherhood	19%			18-20	1995-6	WI	Courtney et al 2001	
Teen motherhood	32%		12%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Teen motherhood	lower	higher		23	born in 1958	UK National Child Development Study	Maughn & Pickles 1990	
Teen motherhood	50%			17+	1992-93	MO	McMillan & Tucker 1999	
Teen motherhood	70%			mean of 20	late 1990s	NV	Reilly 2003	

Teen motherhood	3%	3%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Comparison is sample of kids with no history of public care.	
Substance abuse/treatment	50%		20s	1980s	National	Cook 1991		
Substance abuse/treatment	7.50%	3%	19	2002-04	Midwest	Courtney et al 2005	Comparison is national sample.	
Substance abuse/treatment	13%		17+	1992-93	MO	McMillan & Tucker 1999		
Used illicit drugs in last year	34%	26%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Male. Comparison is sample of kids with no history of public care.	
Used illicit drugs in last year	15%	13%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Female. Comparison is sample of kids with no history of public care.	
Clinical level of psych. symptoms	13%		mean of 23	1993-94	Baltimore	Benedict et al 1996		
Emotionally disturbed	38%		20s	1980s	National	Cook 1991		
Ever received psych. services	32%	15%	22-25	1979	NYC	Festinger 1983	Comparison is national sample.	
Ever received psych. services	13%	15%	5%	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted in first year of life
Ever received psych. services	42%	15%	5%	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted after first year of life.
Inpatient psych. care	44%		17+	1992-93	MO	McMillan & Tucker 1999		
Internalizing behaviors/disorders	low	low	16	born in 1977	New Zealand	Fergusson et al 1995		
Psychiatric diagnosis	18%		mean of 23	1993-94	Baltimore	Benedict et al 1996		
Psychiatric diagnosis	67%	15%	13-17	1980s	UK	McCann et al 1996	Comparison is matched group with no CPS contact.	

Score for malaise		higher	lower	23&33	born in 1958	UK	Cheung & Buchanan 1997	Comparison is reported abused/neglected but never in out-of-home care.
Score for malaise	lower		higher	23	born in 1958	UK National Child Development Study	Maughn & Pickles 1990	
Score in clinical range for malaise		20%	13%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Male. Comparison is sample of kids with no history of public care.
Score in clinical range for malaise		29%	19%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Female. Comparison is sample of kids with no history of public care.
Self-reported depression scale	higher	lower	inter-mediate	1990-91	Registered in 1991	Sample of Preschool Children on English Child Protection Registers	Gibbons et al 1995	Comparison is reported abused/neglected but never in out-of-home care.
Overall child well-being (index)	no diff.	no diff.		while children	1987-88	Natl Survey Families Households (US)	Borders et al 1998	
Personal well-being (composite score)	better	worse		average of 23	mid 1990s	Casey Family Services (US)	Kerman et al 2002	Exited foster care without extended services. No difference between extended services group and adopted group.
Non-Cognitive or Social Outcome								
Behavior problem index (median=50)	51.3	54.4	48.4	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted in first year of life
Behavior problem index (median=50)	58.6	54.4	48.4	under 17	1998	National Health Interview Survey	Zill 1995	Adolescents adopted after first year of life.

Behavior problem index (of 52)	10	7.1	7.1	in childhood/adolescence	1988	National Health Interview Survey	Brand & Brinich 1999	Age 11-17, adopted before 6 months. Comparison is resides with birth parents.
Behavior problem index (of 52)	12	7.1	7.1	in childhood/adolescence	1988	National Health Interview Survey	Brand & Brinich 1999	Age 11-17, adopted after 6 months. Comparison is resides with birth parents.
Behavior problem index (of 56)	10	16.7	7.4	in childhood/adolescence	1988	National Health Interview Survey	Brand & Brinich 1999	Age 5-11, adopted before 6 months. Comparison is resides with birth parents.
Behavior problem index (of 56)	7	16.7	7.4	in childhood/adolescence	1988	National Health Interview Survey	Brand & Brinich 1999	Age 5-11, adopted after 6 months. Comparison is resides with birth parents.
Behavior problems				19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Behavior problems		42%		average of 5	1998-99	Sacramento CA	Hansen et al 2004	
Behavior problems		53%	12%	13-17	1980s	UK	McCann et al 1996	Comparison is matched group with no CPS contact.
Mean number of behavior problems	1.25		1.83	16	born in 1977	New Zealand	Fergusson & Horwood 1998	
Behavior problems		less		7-12	1990-91	San Diego	Taussig et al 2001	
Externalizing behaviors/ disorders	lower		higher	16	born in 1977	New Zealand	Fergusson et al 1995	
Expelled from school		7%	2%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Male. Comparison is sample of kids with no history of public care.
Expelled from school (Female)		4%	1%	30	2000	1970 British Birth Cohort Study	Viner & Taylor 2005	Female. Comparison is sample of kids with no history of public care.
Suspended or expelled from school	6	17	5	under 17	1998	National Health Interview Survey	Zill 1995	Comparison is living with two birth parents.

									Living with grandparents=11%
Appears on criminal or excise board register	18%	29.20%	16.50%	15.50%	23	born mid-1950s	Stockholm, Sweden	Bohman & Sigvardsson 1990	Comparison is population.
Arrests		28%			19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Arrests		22%			22-25	1979	NYC	Festinger 1983	Foster is discharged from foster family home; comparison is discharged from group facility.
Convicted in a court (criminal or civil)		41%		23%	30	2000	1970 British Birth Cohort Sutdy	Viner & Taylor 2005	Male. Comparison is sample of kids with no history of public care.
Convicted in a court (criminal or civil)		9%		4%	30	2000	1970 British Birth Cohort Sutdy	Viner & Taylor 2005	Female. Comparison is sample of kids with no history of public care.
Delinquency		38%			mean of 23	1993-94	Baltimore	Benedict et al 1996	
Delinquency		25%			20s	1980s	National	Cook 1991	
Delinquency		18%			18-20	1995-6	WI	Courtney et al 2001	
Delinquency		8%			17+	1992-93	MO	McMillan & Tucker 1999	
Delinquency		45%			mean of 20	late 1990s	NV	Reilly 2003	
Delinquency		9%			7-12	1990-91	San Diego	Taussig et al 2001	
Pulled a weapon on a person		8%		3%	19	2002-2004	Midwest	Courtney et al 2005	Male. Comparison is national sample.
Pulled a weapon on a person		4%		0.30%	19	1992-93	Midwest	Courtney et al 2005	Female. Comparison is national sample.

Ever incarcerated		18%		18-20	1995-6	WI	Courtney et al 2001	
Ever incarcerated		41%		mean of 20	late 1990s	NV	Reilly 2003	
Present incarceration rate		7%		mean of 23	1993-94	Baltimore	Benedict et al 1996	
Present incarceration rate		7%		mean of 20	late 1990s	NV	Reilly 2003	
Ever homeless		27%		mean of 23	1993-94	Baltimore	Benedict et al 1996	
Ever homeless		12%		18-20	1995-6	WI	Courtney et al 2001	
Ever homeless		36%		mean of 20	late 1990s	NV	Reilly 2003	
Ability to form relationships/ parent own kids	more able	less able		20s	1970s	Scotland	Triseliotis & Russell 1984	Adopted children placed at age ≥ 3 . Children raised in institutions were less positive than those in foster care.
Ability to form relationships/parent own kids	more able	less able		mena of 18	born mid-1950s	Stockholm, Sweden	Bohman & Sigvardson 1990	
Disconnected (no job, not in school)		31%	12%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Disconnected (no job, not in school)		45%		17+	1993-94	MO	McMillan & Tucker 1999	
Social integration		no diff.		aveage 27.8	1990-92	France, agency-based study	Dumaret et al 1997	Relative to normed scale.

Economic Outcomes

Labor force participation		48%		20s	1980s	National	Cook 1991	
Labor force participation		61%		18	1995-6	WI	Courtney et al 2001	
Labor force participation		40%	58%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Labor force participation		less	more	18+	1990s	CA, IL, SC	Goerge et al 2002	Comparison group is national sample.
Labor force participation		38%		17+	1993-94	MO	McMillan & Tucker 1999	
Labor force participation		63%		mean of 20	late 1990s	NV	Reilly 2003	
Any income from employment in past year		78%	90%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Employed		68%	93%	22-25	1979	NYC	Festinger 1983	Black males. Comparison is national sample.
Employed		53%	74%	22-25	1979	NYC	Festinger 1983	Black males in NYC. Comparison is NYC youth.
Quarters employed during first 2 years after discharge	4.1		3.7	17 at discharge	2000	WI	Dworsky 2005, Dworsky 2006	Single parent is kinship care; foster care is discharged to independent living.
Unemployed >6 months of last 5 years	lower		higher	23	born in 1958	UK National Child Development Study	Maughn & Pickles 1990	
Unemployed, no reported occupation		11%	21%	average of 27.8	1990-92	France, agency-based study	Dumaret et al 1997	Comparison is population average.
Annual earnings 2 years after discharge	\$2,996	\$3,597	\$2,215	17 at discharge	2000	WI	Dworsky 2005, Dworsky 2006	Single parent is kinship care; foster care is discharged to independent living.

Income from employment in past year <\$10,000		90%		79%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Median annual income	\$3,011	\$3,664			17+ at exit	1990s	WI	Dworsky & Courtney 2000	Adopted includes all permanent outcomes. Foster is aged out to independent living.
Median annual income		worse		better	18+	1990s	CA, IL, SC	Goerge et al 2002	Comparison group is national sample.
Median annual income		<\$10,000			mean of 20	late 1990s	NV	Reilly 2003	
Median annual income		\$15,000			mean of 23	1993-94	Baltimore	Benedict et al 1996	
Quarters of food stamps receipt in 2 years after discharge	1.7	3.4	2.4		17 at discharge	2000	WI	Dworsky 2005, Dworsky 2006	Single parent is kinship care; foster care is discharged to independent living.
Quarters of TANF receipt in 2 years after discharge	0.5	1	1		17 at discharge	2000	WI	Dworsky 2005, Dworsky 2006	Single parent is kinship care; foster care is discharged to independent living.
Received food stamps		17%		3%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Welfare program participation		32%			18-20	1995-6	WI	Courtney et al 2001	
Not enough money to pay rent		12%		6%	19	2002-2004	Midwest	Courtney et al 2005	Comparison is national sample.
Self-sufficiency (composite score)	better	worse			average of 23	mid 1990s	Casey Family Services (US)	Kerman et al 2002	Exited foster care without extended services. No difference between extended services group and adopted group.