



## Investing in Single Mothers' Higher Education in Tennessee:

Costs and Benefits to Individuals, Families, and Society

**In Tennessee, 23 percent of all undergraduates, or 68,494 students, are parents and 30,093 college students are single mothers.<sup>1</sup>**

Ensuring that these single mothers complete their degrees will improve their families' well-being and economic security and bring important benefits to the Tennessee economy. College graduates have higher earnings, higher rates of employment, and lower poverty rates than those without degrees.<sup>2</sup> Their children also reap important benefits, such as improved behavioral and academic outcomes and an increased likelihood of going to college themselves.<sup>3</sup>

Despite the substantial benefits experienced by single mothers who earn college degrees, they are some of the least likely students to earn them: just eight percent of single mother undergraduates in the United States earn an associate or bachelor's degree within six years of enrolling in college, compared with nearly half (49 percent) of women in college who are not mothers.<sup>4</sup>

Taking steps to improve single mothers' college success also has important implications for racial and ethnic equity in higher education. Among female college students nationally, 31 percent of

Black women, 23 percent of Native American/Alaska Native women, 17 percent of women of two or more races, and 16 percent of Latina women are single mothers, compared with 13 percent of White and seven percent of Asian/Pacific Islander women.<sup>5</sup>

### Single mothers in Tennessee who graduate with an A.A.:

- Are **45 percent** less likely to live in poverty than a high school graduate.
- Earn **\$272,449** more over their lifetime than what they would have earned with only a high school education.
- Save Tennessee **\$25,748** in public assistance spending over their lifetime.
- Contribute **\$65,871** more in lifetime taxes than a single mother with only a high school diploma.

To analyze and document the economic benefits of single mothers' college education, the Institute for Women's Policy Research (IWPR) estimated the economic returns to college for single mothers and their families, and for the economy more broadly, for every U.S. state and the District of Columbia. This fact sheet presents the costs and benefits of single mothers' degree attainment for Tennessee and provides recommendations to help single mothers succeed in college through improved policy and practice. (IWPR also estimated the returns to single mothers who earn some college education, but not a degree; these findings by state and for the United States are presented in a summative briefing paper published separately.)<sup>6</sup>

Postsecondary institutions and state and federal policymakers can take a number of steps to understand and address the needs of single mother college students. Colleges and state data systems should collect information on students who are parents, for example, and track their outcomes over time. Very few colleges today know how many of their students are raising children.

Applying a "single-mother lens" to campus practices related to financial aid, classroom attendance and makeup policies, and state-level public policies—such as child care assistance eligibility rules for parents in education and training—would improve single mothers' chances of success and lead to important benefits for families and the economy.

## Substantial Returns to Single Mothers' College Attainment

Earning a college degree leads to significant declines in single mothers' likelihood of living in poverty and substantial annual and lifetime earnings gains.

## College Cuts Poverty Dramatically

While single mothers overall are more likely to live in poverty than other women at every educational level, the more education single mothers have, the lower their poverty rate.<sup>7</sup>

- In Tennessee, the poverty rate for single mothers with associate degrees is 27 percent. The rate among their high school-level peers is 49 percent.
- Just 15 percent of single mothers in Tennessee with a bachelor's degree live in poverty.

### Single mothers in Tennessee who graduate with a B.A.:

- Are **70 percent** less likely to live in poverty than a high school graduate.
- Earn **\$498,288** more over their lifetime than what they would have earned with only a high school education.
- Save Tennessee **\$43,560** in public assistance spending over their lifetime.
- Contribute **\$174,012** more in lifetime taxes than a single mother with only high school.

## Single Mothers with College Degrees Have Higher Earnings

Earning a degree leads to substantial annual earnings gains for single mothers in Tennessee above what they would have earned with just a high school diploma:

**“For me, college is my way out of poverty. It is...freedom. It is how I can be there for my daughter.”**

**- Single mother student**

- With an associate degree, single mothers earn on average \$6,509 more annually than single mothers with only a high school education.<sup>8</sup>
- With a bachelor’s degree, they earn \$16,815 more annually than their high school-educated counterparts.

These annual gains lead to significant increases in lifetime earnings (Appendix 1):

- Single mothers graduating with an associate degree earn a total of \$667,080 over their lifetimes, \$272,449 more than single mothers with only a high school education.
- Single mothers with a bachelor’s degree earn \$892,919 in total lifetime earnings, \$498,288 more than their peers with only a high school education.

## Single Mothers See a Significant Return on Their Investment in College

Increased annual and lifetime earnings for single mother college graduates in Tennessee lead to significant returns on their investment in college.

To earn a college degree in Tennessee, single mothers must cover a wide variety of costs, including child care and adjusting to lower earnings from work (as a result of reduced work hours while they are enrolled), in addition to paying for tuition and fees. When adding up costs, including the costs of tuition and fees, books and supplies, transportation, and other school expenses; the cost of providing for their family’s basic needs, including food, housing, and child care; and the opportunity cost of not working or reducing their work hours for the time they are enrolled, single mothers in Tennessee spend an average of \$59,358 getting an associate degree and

\$118,178 on a bachelor’s degree.

To calculate the economic return on single mothers’ investment in college, IWPR looked just at the total costs associated with earning an associate or a bachelor’s degree—not including expenses that single mothers would have even if they were not in college, such as housing or food.

Based on what single mothers in Tennessee earn over their lifetime and the amount they invest in getting a degree, single mother graduates receive a significant economic return:<sup>9</sup>

- Single mothers see a 1,159 percent return over their lifetime after graduating with an associate degree. In other words, for every dollar spent on earning an associate degree, single mothers get back \$11.59.
- Earning a bachelor’s degree leads to a return of 662 percent, meaning that for every dollar spent on a bachelor’s degree, single mothers get back \$6.62.

## Single Mothers with Degrees Make Substantial Economic Contributions to the Economy

### Single Mother College Graduates Contribute Much More in Taxes than Those without Degrees

Tennessee stands to benefit substantially when single mothers graduate from college, since single mother graduates contribute more in taxes than those without degrees (Appendix 2).

- Over their lifetime, single mothers with an associate degree in Tennessee will contribute a total of \$129,295 in taxes on average, \$65,871 more than if they only had a high school diploma.
- With a bachelor’s degree, they will contribute a total of \$237,436 in taxes over their lifetime, \$174,012 more than if they only had a high school diploma.
- Of the cohort of single mothers enrolled in Tennessee during the 2015-16 academic year, those expected to graduate with an associate degree within six years of enrolling in college are estimated to pay a total of \$250,100,339 in taxes over their lifetimes. For those who graduate with bachelor’s degrees, that amount is \$128,299,539.
- Of the cohort of single mothers enrolled in Tennessee during the 2015-16 academic year, those expected to graduate with an associate degree within six years of enrolling in college are estimated to save the state a total of \$49,805,560 in public assistance receipt, compared with how much they would have received if they had not earned a degree; for a cohort of single mother bachelor’s degree graduates, they save \$23,537,981.

### College Graduates Use Fewer Public Benefits

When single mothers earn college degrees, the associated earnings gains lead to lower poverty rates and a reduced need for public assistance. Public assistance savings stem from reductions in the use of programs like Temporary Assistance for Needy Families (TANF) also known as cash assistance, Supplemental Nutrition Assistance Program (SNAP) or food stamps, and Section 8 housing assistance (Table 1).

- In Tennessee, single mothers who graduate with an associate degree save society roughly \$25,748 each in reduced lifetime public benefits receipt, compared with what they would have received with only a high school diploma. Single mother graduates with bachelor’s degrees save \$43,560 (Appendix 3).

**Table 1. Lifetime Public Assistance Savings When Single Mothers in Tennessee Earn Associate and Bachelor’s Degrees**

Public Assistance Program	Savings from an A.A.	Savings from a B.A.
TANF	\$2,384	\$2,346
SNAP	\$16,104	\$26,586
Section 8 Housing	\$7,260	\$14,628
<b>Total</b>	<b>\$25,748</b>	<b>\$43,560</b>

Note: Public assistance savings figures are in comparison to public assistance receipt among single mothers whose highest level of educational attainment is high school.

### The Costs and Benefits of Investing in Supports for Single Mother College Students

Investing in targeted supportive services to help single mother students meet their financial, caregiving, and time demands has the potential to improve their chances of persistence and completion, resulting in a range of benefits to Tennessee families and society. Research suggests that enhanced financial assistance and access to intensive case management can increase college completion for students who have similar characteristics as student parents.<sup>10</sup>

**“When I couldn’t afford to pay my tuition, I made the impossible possible. If I had to sell the couch I sat on, I would.”**

**- Single mother student**

Access to convenient, affordable, and high-quality child care has also been shown to play a significant role in student parents' ability to graduate successfully.<sup>11</sup> Unfortunately, campus child care is declining around the country. Nationally, just 45 percent of all public institutions had a campus child care center as of 2017, compared with 53 percent in 2007. In Tennessee, 20 percent of all public institutions—including eight four-year and two two-year schools—had a campus child care center in 2017.<sup>12</sup>

Investing in the supports that can improve single mothers' ability to graduate would more than pay off based on what they would contribute in lifetime tax payments and reduced public assistance receipt. IWPR estimated the return on investments in three evidence-based supports that would be likely to improve single mothers' completion rate—child care, case management, and financial assistance—for the duration of single mothers' enrollment in college (Table 2).<sup>13</sup>

**Table 2. Investments in Supportive Services for Single Mother Students in Tennessee Result in a Significant Economic Return**

<b>Average per Student Cost for Total Time Enrolled in College</b>	
Child Care for Children 0-4	\$8,385
Case Management	\$7,003
Additional Financial Aid	\$7,409
<b>Estimated Graduation Effect</b>	
Child Care	21.0%
Case Management	47.1%
Financial Aid	2.8%
<b>Average Lifetime Economic Gains per Student</b>	
Increase in Lifetime Tax Payments	\$24,829
Reduction in Lifetime Public Assistance Receipt	\$12,191
<b>State Returns on Investment in All Enrolled Single Mothers</b>	
Returns to Child Care	\$3.07
Returns to Case Management	\$3.86
Returns to Financial Aid	\$3.52

Note: All dollar values presented in this table are undiscounted for ease of interpretation, but are discounted to their present value in the return on investment calculation. Child care costs are adjusted for the estimated time that single mothers spend in class, commuting, or attending office hours or study groups, and for estimated full- and part-time care needs; costs vary by educational level. The return on investment estimates assume that the investment will be made in all single mothers attending college, even the ones that will not graduate

Source: Median cost of child care calculated using data from Child Care Aware (2018). Child care need estimated using analysis of data from NPSAS:16 and IPEDS; the 2015-17 ACS; and Fosnacht et al. (2018). Average cost of case management is from Evans et al. (2017) and cost of additional financial assistance from Franke (2014).

**“Financial aid just wasn’t enough to fix life’s little emergencies.”**

**- Single mother student**

Investments in child care, case management, and additional financial assistance for all single mother undergraduate students in Tennessee, including those who do not graduate, for the duration of their enrollment, would result in a return of 307 percent, or \$3.07 for every dollar spent on child care; 386 percent, or \$3.86 for every dollar spent on case management; and 352 percent, or \$3.52 for every dollar spent on financial assistance (Table 2). These returns would stem from the increase in the number of single mothers earning associate and bachelor's degrees as the result of receiving each support, and the associated increases in their lifetime tax payments and reductions in public assistance receipt.<sup>14</sup>

In other words, if Tennessee wanted to serve 10 percent of its single mother student population (roughly 3,009 students) through case management services, for example, it would spend \$21 million over the course of their enrollment, increasing graduation rates by an estimated 47 percent, for a total lifetime societal return of \$122 million as a result of the additional taxes paid and reductions in public assistance received by single mothers receiving the service.<sup>15</sup> Though not estimated for this study, these returns would be further augmented by the second generation benefits experienced by the children of single mother graduates, who will be more likely to succeed and attend college in adulthood as a result of their mothers' educational attainment.

## **Moving the Needle for Single Mothers' Postsecondary Success**

Single mother college graduates contribute significantly to Tennessee and to U.S. society more broadly. Their economic contributions, in the form of increased tax payments and reduced public

assistance receipt, in combination with all the additional and multigenerational benefits of higher education for individuals and families, means that investing in interventions to improve single mothers' college attainment has powerful implications for Tennessee over the long term. To capitalize on the many benefits of single mothers' higher educational success, institutions and states should consider the following recommendations:

### **Institutions should:**

- Invest in supportive services—such as affordable, campus-based child care services, holistic case management, and programs that provide targeted support and information to students with children—that can help single mothers persist in and complete college.
- Remove obstacles to single mothers' educational progress in college policies, such as allowing makeups for absences due to child illness and building campus environments that embrace and acknowledge student families.
- Inform students that child care is an allowable college expense that can be considered in calculating financial aid and assist them in applying for the dependent care allowance.
- Collect and report data on students' parent status and educational outcomes to inform the design and implementation of interventions to increase completion rates among student parents.

## Tennessee should:

- Invest in making quality child care accessible and affordable for student parents, by providing or increasing funding for child care for college students, removing barriers to students' eligibility for state child care assistance, and incentivizing greater collaboration between the early and higher education systems.
- Require and provide technical assistance to colleges to collect data on students' parent status and educational outcomes.
- Leverage federal programs, such as TANF, SNAP Education & Training, Head Start, and the Workforce Innovation and Opportunity Act, to support parents with low incomes to pursue higher education.



**“When we invest in education today, we invest in future generations as well.”  
- Single mother student**

## Methodology Note

IWPR's work to quantify the individual and societal costs and benefits of single mothers' attainment of college degrees draws on existing literature and new calculations using an array of data sources. IWPR estimated the lifetime earnings and public assistance receipt at the baseline (single mothers with high school only) and evaluated the effects of three levels of educational attainment (some college education, but no degree; associate degrees; and bachelor's degrees) on these outcomes. These effects were estimated using regressions and linear probability models that control for demographic and socioeconomic characteristics, and which utilized data from the 2015-17 American Community Survey (ACS) and the 2014-18 Current Population Survey (CPS).

The estimated age-earnings profile for each level of college education and the baseline is applied to 2017 federal and state tax rate structures, as well as Earned Income Tax Credit (EITC) and Child Tax Credit benefit levels and take-up rates, to estimate total lifetime tax payments. This assumes the tax system will remain unchanged over an extended period of time, which is unlikely. To the extent that any changes impact single mothers of different levels of education in a similar way, however, the effect on differences in tax contributions may be minimal.

IWPR estimated the cost of college for single mothers for each of the three educational levels using data from the 2015-16 National Postsecondary Student Aid Survey (NPSAS) and the ACS. The total cost estimates include tuition and fees, books and supplies, the opportunity cost of reducing work hours, and child care costs when in college. Costs based on regional data from the NPSAS are adjusted for state-level variation by using differences in average tuition rates and cost of living by state. Aggregate benefits and costs by state are adjusted for estimates of single mother enrollment, six-year graduation rates from the 2003-09 Beginning Postsecondary Students Longitudinal Study (BPS), and estimated individual costs and benefits.

Estimates of the return on investments in supportive services use published cost data from Child Care Aware of America and Evans et al. (2017); the financial aid investment of \$2,000 per academic year was set by IWPR based on the average amount found to increase attainment in the literature. Using evidence on the effect of these specific supports on student attainment from the literature, IWPR estimated the effect of providing them to single mother students on their graduation rates, and subsequent individual-level earnings, public assistance receipt, and tax payments. The estimated rate of return assumes that investments are made in all single mother students, including those who do not graduate. Benefits to single mothers with some college, no degree, are included, given the extensive evidence showing the value of some college relative to a high school diploma.

For a detailed description of the methodology used in this work, see "National and State Estimates of the Costs and Benefits of Single Mothers' Educational Attainment to Individuals, Families, and Society: Methodological Appendix" published separately on IWPR's website, [iwpr.org](http://iwpr.org).



**Appendix Table 1. Individual Single Mothers' Lifetime Earnings and Earnings Gains as the Result of Educational Attainment in Tennessee**

<b>Education Level</b>	<b>Total Lifetime Earnings</b>	<b>Earnings Gains Over Single Mothers with Only High School</b>
High school	\$394,632	\$0
Some college, no degree	\$483,325	\$88,693
Associate degree	\$667,080	\$272,449
Bachelor's degree	\$892,919	\$498,288

Note: All dollar values presented in this table are undiscounted for ease of interpretation, but are discounted to their present value in the return on investment calculation. Lifetime calculations begin at age 35 and end at age 64.

**Appendix Table 2. Individual Single Mothers' Lifetime Tax Contributions and Additional Contributions as the Result of Educational Attainment in Tennessee**

<b>Education Level</b>	<b>Total Lifetime Tax Contributions</b>	<b>Additional Tax Contributions Over Single Mothers with Only High School</b>
High school	\$63,425	\$0
Some college, no degree	\$82,461	\$19,036
Associate degree	\$129,295	\$65,871
Bachelor's degree	\$237,436	\$174,012

Note: All dollar values presented in this table are undiscounted for ease of interpretation, but are discounted to their present value in the return on investment calculation. Lifetime calculations begin at age 35 and end at age 64.

**Appendix Table 3. Individual Single Mothers' Lifetime Public Assistance Receipt and Reduction in Receipt as the Result of Educational Attainment in Tennessee**

<b>Education Level</b>	<b>Lifetime Public Assistance Receipt</b>	<b>Reduction in Receipt Compared with Single Mothers with Only High School</b>
High school	\$86,716	\$0
Some college, no degree	\$76,089	\$10,628
Associate degree	\$60,968	\$25,748
Bachelor's degree	\$43,156	\$43,560

Note: All dollar values presented in this table are undiscounted for ease of interpretation, but are discounted to their present value in the return on investment calculation. Lifetime calculations begin at age 35 and end at age 64.

## Endnotes

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- <sup>1</sup> Because there are no state-level representative data on students with children, IWPR estimates the number of student parents and single mothers by state by multiplying IPEDS enrollment numbers by state with regional percentages of single mothers from the NPSAS. Institute for Women’s Policy Research. 2019. IWPR analysis of data from the U.S. Department of Education, National Center for Education Statistics, 2015-16 National Postsecondary Student Aid Study (NPSAS:16) and the Integrated Postsecondary Education Data System (IPEDS) Spring 2001 through Spring 2017, Fall Enrollment component.
- <sup>2</sup> Anthony Carnevale, Stephen J. Rose, and Ban Cheah. 2011. *The College Payoff: Education, Occupations, Lifetime Earnings*. Washington, DC: Georgetown University, Center on Education and the Workforce. <<https://cew.georgetown.edu/wpcontent/uploads/2014/11/collegepayoff-complete.pdf>> (accessed March 9, 2016). Michael Hout. 2012. “Social and Economic Returns to College Education in the United States.” *Annual Review of Sociology* 38 (1): 379–400. Dennis Vilorio. 2016. “Education Matters.” *Career Outlook*. <<https://www.bls.gov/careeroutlook/2016/data-on-display/education-matters.htm>> (accessed August 21, 2017).
- <sup>3</sup> Quotes in this fact sheet come from interviews with single mother students from around the country conducted by IWPR. Paul Attewell, and David Lavin. 2007. *Passing the Torch: Does Higher Education for the Disadvantaged Pay Off Across the Generations?* New York, NY: Russell Sage Publishers.
- <sup>4</sup> Barbara Gault, Jessica Milli, and Lindsey Reichlin Cruse. 2018. *Investing in Single Mothers’ Higher Education: Costs and Benefits to Individuals, Families, and Society*. Report, IWPR #C468. Washington, DC: Institute for Women’s Policy Research. <<https://iwpr.org/publications/investing-single-mothers-higher-ed/>> (accessed June 7, 2018).
- <sup>5</sup> Estimates of the share of female college students who are single mothers by race/ethnicity are for undergraduate students enrolled at degree-granting institutions. IWPR. 2019. IWPR analysis of data from the NPSAS:16 and IPEDS.
- <sup>6</sup> Institute for Women’s Policy Research. 2019. *Investing in Single Mothers’ Higher Education: National and State Estimates of the Costs and Benefits of Single Mothers’ Educational Attainment to Individuals, Families, and Society*. Report, #R600. Washington, DC: Institute for Women’s Policy Research. <<https://iwpr.org/publications/investing-in-single-mothers-higher-education-national-state-costs-benefits/>> (accessed December 2, 2019).
- <sup>7</sup> Institute for Women’s Policy Research. 2019. IWPR Analysis of Data from the 2013-17 American Community Survey, Integrated Public Use Microdata Series (Version 9.0).
- <sup>8</sup> All dollar amounts reported in this fact sheet are undiscounted and adjusted to 2017 dollars.
- <sup>9</sup> For the purposes of the cost-benefit calculation, lifetime earnings gains and total costs of attendance are discounted to their present value in order to estimate the rate of return. A discount rate of 3.5 percent is used in the analysis.
- <sup>10</sup> Ray Franke. 2014. “Towards the Education Nation? Revisiting the Impact of Financial Aid, College Experience, and Institutional Context on Baccalaureate Degree Attainment for Low-Income Students.” Philadelphia, PA, April 3-7, 2014. Sara Goldrick-Rab, Robert Kelchen, Douglas N. Harris, and James Benson. 2016. “Reducing Income Inequality in Educational Attainment: Experimental Evidence on the Impact of Financial Aid on College Completion.” *American Journal of Sociology* 121 (6): 1762–1817. Benjamin L. Castleman and Bridget Terry Long. 2013. “Looking Beyond Enrollment: The Causal Effect of Need-Based Grants on College Access, Persistence, and Graduation.” Working Paper. Cambridge, MA: National Bureau of Economic Research. <<http://www.nber.org/papers/w19306>>. William N. Evans, Melissa S. Kearney, Brendan C. Perry, and James X. Sullivan. 2017. “Increasing Community College Completion Rates among Low-Income Students: Evidence from a Randomized Controlled Trial Evaluation of a Case Management Intervention.” Cambridge, MA: National Bureau of Economic Research. <<http://www.nber.org/papers/w24150>> (accessed January 2, 2017). Susan Scrivener, Michael J. Weiss, Alyssa Ratledge, Timothy Rudd, Colleen Sommo, and Hannah Fresques. 2015. *Doubling Graduation Rates: Three-Year Effects of CUNY’s Accelerated Study in Associate Programs (ASAP) for Developmental Education Students*. New York, NY: MDRC. <[https://www.mdrc.org/sites/default/files/doubling\\_graduation\\_rates\\_fr.pdf](https://www.mdrc.org/sites/default/files/doubling_graduation_rates_fr.pdf)> (accessed December 28, 2017).
- <sup>11</sup> Cynthia Hess, Barbara Gault, Sylvia Krohn, Lindsey Reichlin, and Stephanie Roman. 2014. *Securing a Better Future: A Portrait of Female Students in Mississippi’s Community Colleges*. Report, IWPR #C417. Washington, DC: Institute for Women’s Policy Research. <<https://iwpr.org/wp-content/uploads/wpallimport/files/iwpr-export/publications/C417.pdf>>. Jean Johnson, and Jon Rochkind. 2009. *With Their Whole Lives Ahead of Them: Myths and Realities About Why So Many Students Fail to Finish College*. New York, NY: Public

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Agenda. <<http://www.publicagenda.org/files/theirwholivesaheadofthem.pdf>> (accessed April 4, 2018). Mary Ann DeMario 2017. "Outcomes of Monroe Community College Student Parents Who Used the Campus Child Care Center vs. Those Who Didn't, Fall 2006 - Fall 2014. Unpublished Overview of Research Findings." Kevin Miller. 2019. Unpublished analysis of data from Monroe Community College (MCC) and the National Student Clearinghouse (NSC). P. Lindsay Chase-Lansdale, Terri J. Sabol, Teresa Eckrich Sommer, Elise Chor, Allison W. Cooperman, Jeanne Brooks-Gunn, Hirokazu Yoshikawa, Christopher King, and Amanda Morris. 2019. "Effects of a Two-Generation Human Capital Program on Low-Income Parents' Education, Employment, and Psychological Wellbeing." *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)* 33 (4): 433–43. Terri J. Sabol, Teresa E. Sommer, P. Lindsay Chase-Lansdale, Jeanne Brooks-Gunn, Hirokazu Yoshikawa, Christopher T. King, Ummul Kathawalla, Rayane Alamuddin, Celia J. Gomez, and Emily C. Ross. 2015. "Parents' Persistence and Certification in a Two-Generation Education and Training Program." *Children and Youth Services Review* 58 (November): 1–10.

<sup>12</sup> IWPR. 2019. IWPR analysis of data from IPEDS.

<sup>13</sup> Full sources for cost of supportive services: Child Care Aware of America. 2018. "The U.S. and the High Cost of Child Care: Appendices." Arlington, VA: Child Care Aware of America. <<http://usa.childcareaware.org/wp-content/uploads/2018/10/appendices18.pdf?hsCtaTracking=189a8ba7-22d8-476b-aa2e-120483a43702%7Ce7f035de-f88f-4732-8204-a30353610929>> (accessed October 22, 2018). Evans et al. 2017. "Increasing Community College Completion Rates." Franke. 2014. "Towards the Education Nation?" Kevin Fosnacht, Alexander C. McCormick, and Rosemarie Lerma. 2018. "First-Year Students' Time Use in College: A Latent Profile Analysis." *Research in Higher Education* 59 (7): 958–78.

<sup>14</sup> Analysis of the graduation effect of campus child care usage is for students who were enrolled at MCC at least three terms during the study period (fall 2006–fall 2014) and who earned a degree anywhere through summer 2018 (according to records from the NSC) from Miller. 2019. Unpublished analysis of MCC and NSC data. Graduation effects for case management came from Evans et al. 2017. "Increasing Community College Completion Rates," and for financial aid, Franke. 2014. "Towards the Education Nation?"

<sup>15</sup> In Tennessee, average years enrolled to an associate degree for single mother students is 4.5; for a bachelor's degree it is 6.1; and for those that earn some college, but no degree, average years enrolled is 3.6. Time to degree is based on NPSAS:16 regional data.

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