

Appendix B:

Kentucky Family Child Care Cost Model

Summary

The Kentucky Family Child Care Cost Model was created by Opportunities Exchange while conducting research and analysis for the report *Staffed Family Child Care Networks: An Opportunity to Reimagine the Kentucky Child Care Landscape*. The report, and cost model, was requested by the Prichard Committee for Academic Excellence to assist the Committee's efforts to expand high-quality family child care in Kentucky. This cost model, crafted to include inputs and assumptions relevant to Kentucky, helps demonstrate the essential need to fundamentally rethink the path forward.

Opportunities Exchange's (OppEx) cost model is an Excel interactive tool to demonstrate a variety of fiscal scenarios. The tool allows users to modify several data points but also includes default data (embedded in formulas) to simplify the process of estimating costs and revenues.

This summary discusses the layout of the tool as well as the data assumptions. Additional guidance on how to adjust the tool, if needed, to reflect alternate assumptions about quality and cost is provided.

COST MODELING BACKGROUND:

Early childhood program cost modeling, a nationally recognized methodology, is designed to estimate the likely cost of early childhood education programming under various conditions.¹ By creating hypothetical budgets informed by licensing and quality rating system standards, industry norms, relevant survey data, and aspirational objectives, policy makers as well as providers can explore the impact of variables such as ages and numbers of children, ratios, services, compensation, enrollment levels, bad debt rates, and other cost drivers associated with quality and fiscal viability. Cost modeling can also demonstrate the impact of funding from multiple sources.

OppEx developed the Kentucky Family Child Care (KFCC) Cost Model interactive Excel² tool to examine the cost of delivering family child care services in three regions in Kentucky (East, West and Central) at each of the five levels of Kentucky's All Stars quality rating system for either of two FCC licensing categories. The tool is based on an approach used by the Prichard Committee in 2017 to estimate costs in center-based care with some minor variations to account for differences in how home-based programs operate. The key findings from this model informed recommendations to improve the structural, financial, and quality objectives for family child care in Kentucky.

Data used in the KFCC Cost Model came from a range of sources, including: Kentucky Child Care Assistance Program (KCCAP) subsidy and market tuition rates; Child and Adult Care Food Program (CACFP) rates; compensation and wage data; licensing standards; and, quality awards aligned with Kentucky's quality rating system. Its design allows ease in modeling an infinite number of scenarios to examine the impacts of assumptions. For instance, a key data point derived is a "cost- quality gap" (net revenue/deficit) amount that depicts financial sustainability for a FCC home.



COST MODEL LAYOUT

Several worksheets included in the Kentucky Family Child Care (FCC) Cost Model document are described below. Note that users have the option to change any of the preset data to model results based on different costs, wages, benefits, and revenue assumptions.

RESULTS WORKSHEET:

The *Results* worksheet sets variables for creating cost model scenarios. It also serves as the summary or “roll up” of the key data for cost and revenue (found in the Budget worksheet). From the Results worksheet the user has the option to choose desired parameters for the cost estimate scenarios:

1. Select Kentucky FCC licensure types from a drop-down menu: Certified or Type II.
2. Select one of three regions from a drop-down menu: East, West and Central.
3. Select Wage for FCC Owner: The tool includes two default salary levels—proposed and higher. While many home-based child care providers may take an “owners draw” on revenue rather than establish a salary, deduct payroll taxes and write themselves a paycheck each week or month, the tool includes a salary for the Family Home Lead Teacher/Director (who is typically also the business owner).
4. Select percent of children receiving Kentucky Child Care Assistance Program vs. private tuition (be sure it equals 100%).³
5. Select percent of children eligible for Child and Adult Care Food Program (CACFP) by Federal Poverty Tier levels (be sure it equals 100%).
6. Select a percent of bad debt efficiency: Ideally bad debt should be no more than 3-5% however many FCC providers carry significant bad debt. Thus, the default is set at 15% bad debt.
7. Select a percent of enrollment capacity efficiency: The industry standard for enrollment is 85%. Thus, the default is set for 15%.

BUDGET WORKSHEET

The *Budget* worksheet details all projected expenses and revenue under the desired enrollment scenario, based on data from other worksheets. Details in this budget roll up into the Results budget.

Enrollment

Enrollment is expressed for each age group at the top of the budget worksheet. The number of children enrolled must correlate with licensing requirements and need only be entered in the Star 1 column (other cells will automatically populate). Attendance is set, as a default, at 250 days and 52 weeks.

The models for the Kentucky Issue Brief Report were based on

six children: two infants, two toddlers, two 3-year-old preschoolers (full enrollment under KY FCC Certified licensing). Two additional school age children (before and after school) are included as well, as permitted by Kentucky child care licensing regulations (**Table 1**).

Users have the option to increase or decrease the numbers of children by age under any of the scenarios. When child numbers are changed, the revenue will calculate accordingly. However, the staffing calculations will not change unless the child count reaches 12. It is assumed that a Type II Provider will be aiming to serve the maximum of 12 given the expense of an added teaching assistant required to serve six or more children.

TABLE 1

Kentucky Family Child Care Definitions

Certified Family Child Care Home is a private home that provides full- or part-time care for up to four related children, in addition to six unrelated children, for a maximum of 10 hours at any one time.

Licensed Type II Child Care is a child care center located in the primary residence of the licensee in which child care is regularly provided for at least seven, but not more than twelve children, including the licensee's own children.

EXPENSES PERSONNEL

Staffing Patterns

There are two staff positions in the model: Family Home Lead Teacher/Director and Assistant Teacher. When the count of Full-Time Equivalent (FTE) children under age five exceeds six, an Assistant Teacher must be added. The tool is set to calculate a full-time Assistant Teacher when the child (under age 5) count reaches 12 (as is case for Type II).⁴ A substitute to cover 65 hours annually for staff training and vacation/sick leave is also included, at the KY minimum wage (\$8.20) for Star 1; and, increasing incrementally at higher star levels.

It should be noted that, on average, a FCC owner/teacher works 60-68 hours a week between direct care and business tasks.⁵ Their time does not fluctuate with enrollment. There is no floater to relieve for lunch or breaks. Thus, the hourly wage expressed in the model is likely higher than what is received when all work hours are accounted for.

Compensation

The base (proposed) and higher salary categories included in the model are based on 2019 data from the US Bureau of Labor Statistics (BLS), and gradually increase by 6% for each star level. Unfortunately, the BLS does not include a wage category for FCC. Thus, our proposed Star 1 Family Home Lead Teacher/Director (owner) salary (\$14.55) represents the mid-point between two BLS wage categories: Child Care Worker and Education & Childcare Administrators, Preschool & Daycare. (Under the assumption

that FCC providers are both teacher and director.) The higher wage-earning option is set at the BLS Preschool Teacher mean wage of \$16.70. The Assistant Teacher is paid at state minimum wage of \$8.20 for Star 1.

Table 2 below shows the association between BLS job categories and the staff positions and default salary data used in the model for “proposed” and “higher” scenario.

The model includes a self-employment tax rate of 15.3% (12.4% for Social Security and 2.9% for Medicare).⁶

No health insurance is factored. However, a modification could be made to include purchase of health insurance using rates from the state or federal health exchange.

Non-personnel program expenses:

The direct business expenses in the cost model are based on the defaults in the Provider Cost of Quality Calculator (PCQC) (See **Table 3**, page 4).⁷ Child assessment costs are included as a separate line in the budget worksheet. Additional non-personnel expenses include shared business use of home, based on a time-space calculation typically used when preparing income taxes applied to data from the PCQC. See the **Table 3** on page 4, as

well as the [PCQC User Manual](#), for more detail on these calculations.⁸

Revenue:

The revenue section of the *Budget* worksheet calculates four categories of revenue and requires no user input: Kentucky Child Care Program (KCCAP), Private Tuition, CACFP, and Non-tuition Revenue. Each category calculates the enrollment efficiency and bad debt efficiency factors that are set on the *Results* worksheet which hosts the current state rates and data from the child care market rate survey. The KCCAP and Private Tuition revenue is sourced from the *Tuition Revenue* worksheet. The CACFP worksheet hosts current federal rates for family home reimbursement. The *Results* worksheet sets the percentage of children who receive each revenue source.

Non-Tuition revenue includes registration, late and field trip fees as well as Kentucky All-Star awards.

Finally, the *Budget* worksheet calculates an overall *Net Revenue/Deficit* projection (see **Table 4** on page 4), a per child net revenue/deficit and a daily tuition surplus/gap per child. All models result in losses that increase by star level.

TABLE 2

Association between BLS Job Categories + Staff Positions + Default Salary Data

SOC Number	BLS Area Occupation Title		Annual Mean Wage								Annual & Hourly Mean Wage	Proposed Wage for Model
			Lexington-Fayette	Central	South Central	Western	Louisville-Jefferson	Cincinnati	Eastern	Bowling Green		
39-9011	Child Care Workers	Annual	\$22,450	\$22,980	\$20,920	\$21,100	\$22,350	\$24,310	\$19,800	\$19,300	\$20,690	
		Hourly	\$10.79	\$11.05	\$10.06	\$10.15	\$10.74	\$11.69	\$9.52	\$9.28	\$9.95	
Proposed KY FCC Livable Earnings											\$30,265	
Mid-Point between 39-901 and 11-9031											\$14.55	
11-9031	Education & Childcare Administrators, Preschool & Daycare	Annual	\$36,370	n/a	\$38,640	n/a	\$40,580	\$46,410	\$31,400	N/a	\$39,840	
		Hourly	\$17.48	n/a	\$18.58	n/a	\$19.51	\$22.31	\$15.10	N/a	\$19.15	
25-2011	Preschool Teachers, Except Special Education	Annual	\$35,980	\$35,970	\$37,370	\$34,320	\$30,090	\$33,320	\$32,600	\$33,270	\$34,730	
		Hourly	\$17.30	\$17.29	\$17.97	\$16.50	\$14.47	\$16.02	\$15.68	\$15.99	\$16.70	

TABLE 3
Family Child Care Non-personnel Expenses—Annual Program Expenses⁹

NON-PERSONNEL BUDGET		
Line Items (Exclusively for Business Use)	6	# of Children
	Per Child/Program	Cost
Advertising	\$25	\$150
Classroom (repairs + maintenance)	\$265	\$265
Depreciation	\$330	\$330
Classroom Supplies (arts + crafts, toys, books, games, consumables)	\$85	\$510
Education Supplies	\$85	\$510
Food (+ food-related supplies)	\$1,182	\$7,089
Insurance (liability, accident, etc.)	\$80	\$480
Interest + Business Debt	\$130	\$130
Legal + Professional Fees (accounting)	\$660	\$660
License + Permit Fees	\$110	\$110
Office Supplies/Equipment	\$200	\$200
Professional Membership Dues + Subscriptions (NAFCC)	\$110	\$110
Telephone + Internet	\$1,000	\$1,000
Training + Professional Development	\$250	\$250
Vehicle Expenses	\$275	\$275
TOTALS		\$12,069
SHARED BUSINESS USE OF HOME		
Either: Mortgage interest & property taxes & depreciation or: Rent/lease		\$13,180
Home owners/ Renters Insurance		\$740
Repairs and maintenance		\$550
Utilities (heat, lights, water, sanitation, security, snow removal, yard service)		\$1,980
Supplies (household supplies, paper products, cleaning supplies)		\$265
TOTALS		\$16,715
TIME-SPACE PERCENT (APPLIED TO SHARED EXPENSES)		
Hours worked per week		68
Hours in a week		168
Time Percent		40%
Space in home used for child care (sq. feet)		1200
Total space in home (sq. feet)		2400
Space Percent		50%
Time Space Percent		20%
Total Shared Business Use of Home		\$3,383
TOTAL NON-PERSONNEL EXPENSE		\$15,452

TABLE 4
Sample Net Revenue/Deficit Lines at End of Budget

Net Revenue/ (Deficit)	(\$19,977)	(\$22,018)	(\$22,644)	(\$23,898)	(\$25,146)
Per Child Net Revenue/ (Deficit)	(\$3,330)	(\$3,670)	(\$3,774)	(\$3,983)	(\$4,191)
Daily Tuition Surplus/Gap per Child	(\$13.32)	(\$14.68)	(\$15.10)	(\$15.93)	(\$16.76)

Results Worksheet:

The *Costs by Quality Level* section in the *Results* worksheet rolls up all costs—per child and per program—from the *Budget* worksheet. While providers may charge different rates to families based on the age of the child, the tool does not estimate costs by age of child.

Chart Worksheets

These tabs include charts developed for the OppEx KY FCC Issue Brief. We left them in place for the user.

Key Findings

Finding #1: FCC providers in every Star level, in every region, lose money, with a funding gaps that range from \$10,000 to \$25,000 annually.

Table 5 and Charts A-C below (and page 5) depict FCC Certified Provider per child cost for three Kentucky All Star levels in the East, West and Central regions of the State, including revenue from: Kentucky Child Care Assistance, private tuition, and Child and Adult Care Food Program reimbursement. Assumptions are included below.

TABLE 5
Scenario—Certified FCC

Certified FCC Type	Y
Proposed Wage Family Director/Owner	\$14.55
Bad Debt	15%
Enrollment Capacity Average	85%
% KY CCAP Subsidy Enrollment	50%
Private Tuition at Market Price (75th percentile)	50%
% Child and Adult Care Food Program (Tier 1)	100%
Total Children— (mix of infants to three-year olds attending full time)	6
# of part time (.33 FTE) SACC children (do not increase ratio but increase revenue)	2
Includes tax burdens and deductions	Y

CHART A
FCC Certified—Total Net Revenue/Deficit vs. Total Expenses: East Region

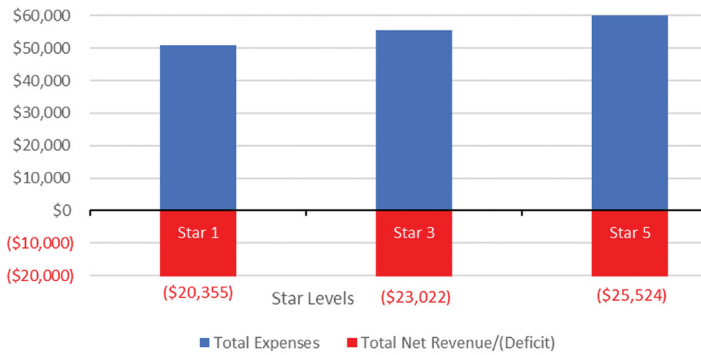


CHART B
FCC Certified—Total Net Revenue/Deficit vs. Total Expenses: West Region

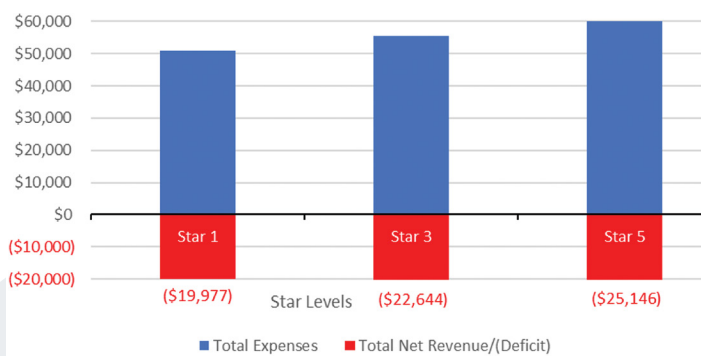
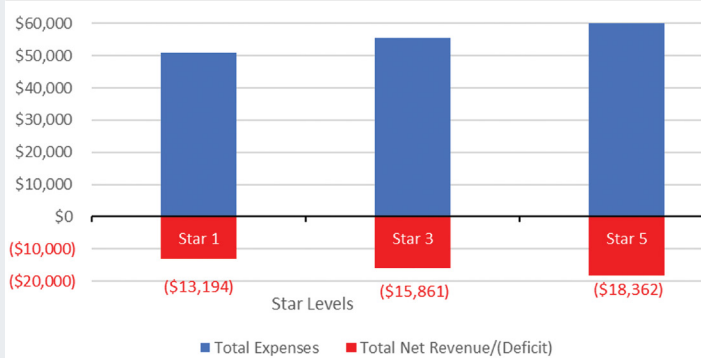


CHART C
FCC Certified—Total Net Revenue/Deficit vs. Total Expenses: Central Region



Finding #2: Neither market prices nor KCCAP rates (which are based on market prices) are high enough to cover the cost of providing family child care. Although market prices (and public rates) are highest in the Central region, a significant funding gap persists.

In short, third party funding to fill the gap between what families can afford to pay and what providers need to earn, is essential.

Charts D-F, below, show the cost vs revenue gap by source of revenue.

CHART D
FCC Certified—Per Child Costs + Revenues: East Region

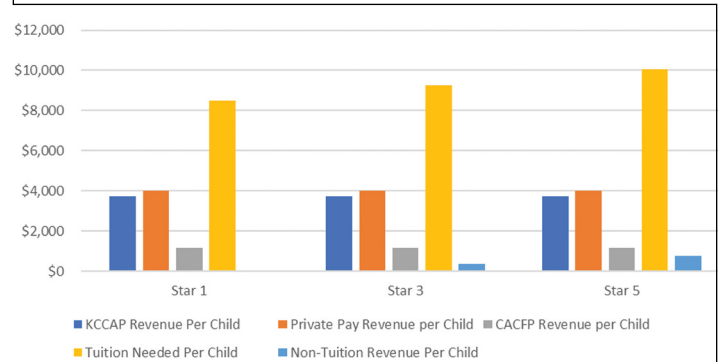


CHART E
FCC Certified—Per Child Costs + Revenues: West Region

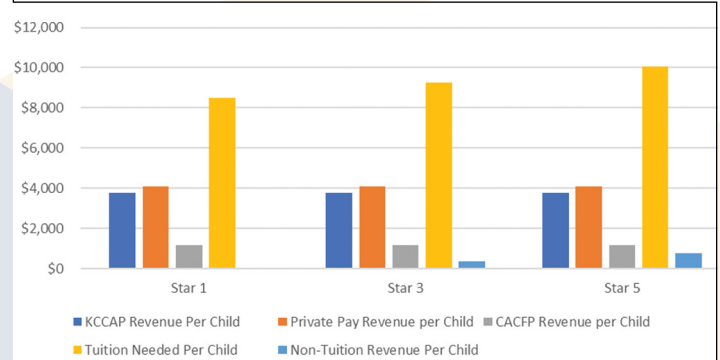
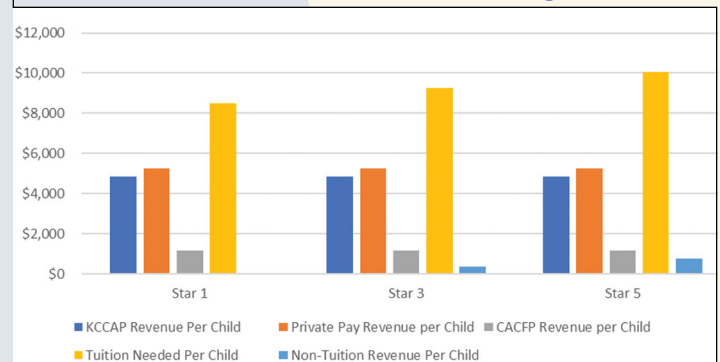


CHART F
FCC Certified—Per Child Costs + Revenues: Central Region



Finding #3: The cost vs. revenue gap is greatest for infant/toddler care at higher star levels.

Charts G, H and I, below and at right, show the daily per mixed age (birth to 3) cost of care in each of the three regions compared with the infant/toddler KCCAP subsidy rate and the market price (at the 75th percentile) for certified provider.

CHART G
Cost vs. CCAP Subsidy vs. Market Rater Per Infant/Toddler: East Region

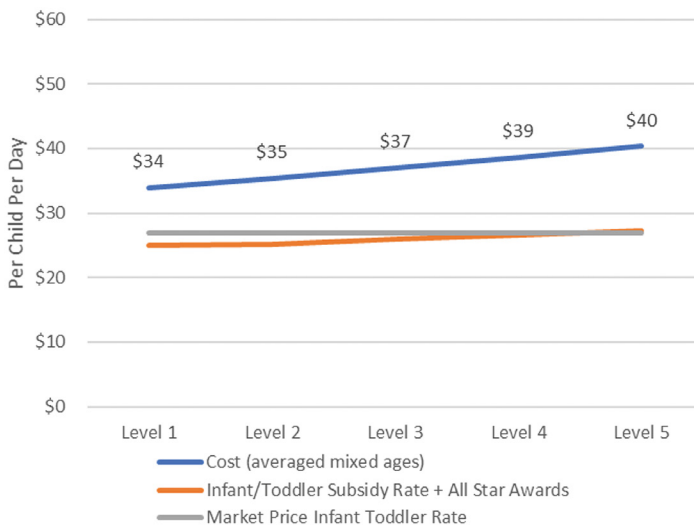


CHART H
Cost vs. CCAP Subsidy vs. Market Rater Per Infant/Toddler: West Region

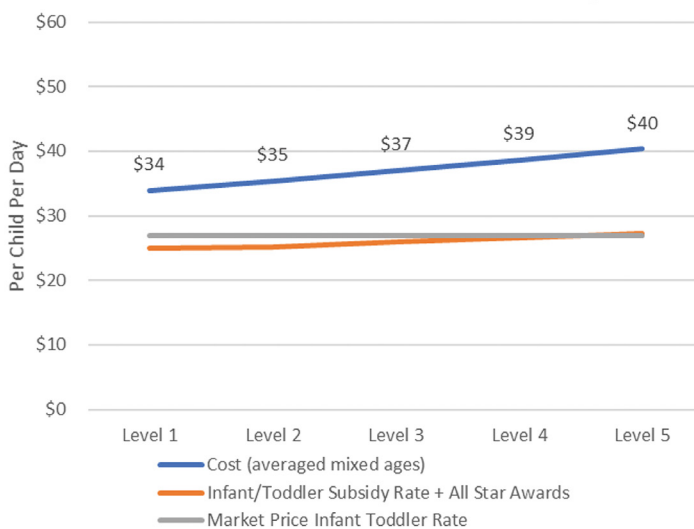
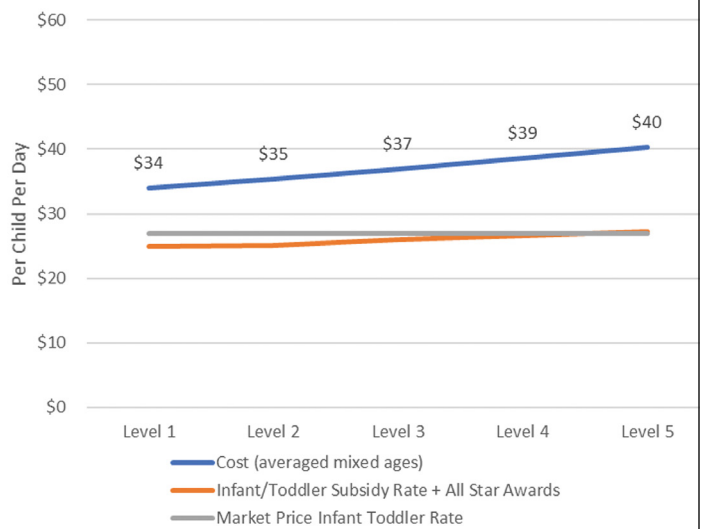


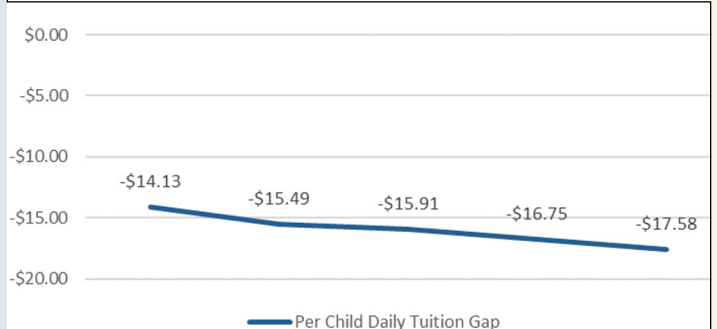
CHART I
Cost vs. CCAP Subsidy vs. Market Rater Per Infant/Toddler: Central Region



Finding #4: In order to break even, FCC homes that serve KCCAP children must charge a 'second co-payment' to cover the gap between the public rate + the required co-payment. This need increases as Star levels rise.

Chart J, below, depicts the per child daily tuition gap in the East Region for a certified FCC provider who serves six children. The West Region is highly similar in its tuition gap (-\$13.97 at Star 1 to -\$17.42 at Star 5) while Central Region shows an improved gap but nonetheless a significant gap (-\$9.64 at Star 1 to -\$13.08 at Star 5).

CHART J
FCC Certified—Per Child Daily Tuition Gap: East Region



Finding #5: Cost models based on Type II providers—who by definition should have greater scale and the capacity to boost earnings—also show significant deficits—except in the Central region at Star 1. This suggests that the standards established for this type of care do not align well with business practices and potential revenue.

The cost model was adjusted for Type II FCC providers using the same assumptions as in the Certified provider scenarios except the number of children was increased to the maximum of 12 and a full-time assistant teacher was added. However, it was not possible to adjust facility costs—which are expressed in the model as a Shared Business Use of the Home—to account for a larger home space. Thus, the costs are underestimated, and deficits are likely higher than those expressed in **Table 6** and **Charts K, L and M** below.

TABLE 6

Scenario—Type II FCC

Type II FCC Type	Y
Proposed Wage Family Director/Owner	\$14.55
Proposed Wage Teacher Assistant	\$8.20
Bad Debt	15%
Enrollment Capacity Average	85%
% KY CCAP Subsidy Enrollment	50%
Private Tuition at Market Price (75th percentile)	50%
% Child and Adult Care Food Program (Tier 1)	100%
Total Children— (mix of infants to three-year olds attending full time)	12
# of part time (.33 FTE) SACC children (do not increase ratio but increase revenue)	2
Includes tax burdens and deductions	Y

CHART K

FCC Type II—Total Net Revenue/Deficit vs. Total Expenses: East Region

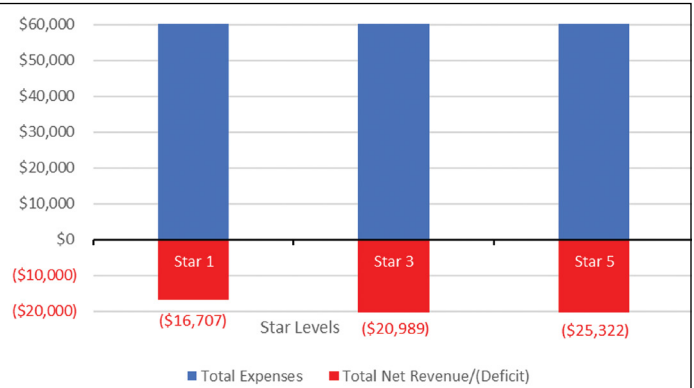


CHART L

FCC Type II—Total Net Revenue/Deficit vs. Total Expenses: West Region

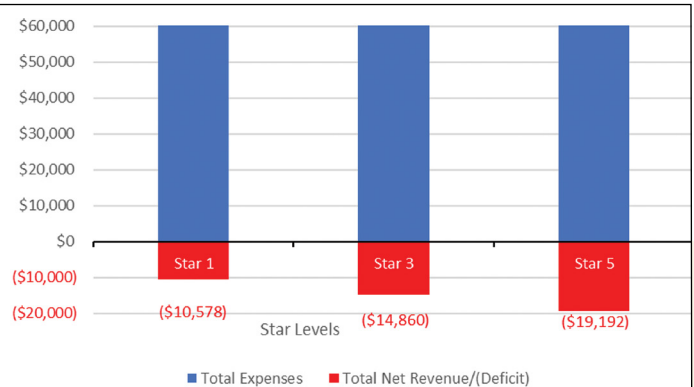
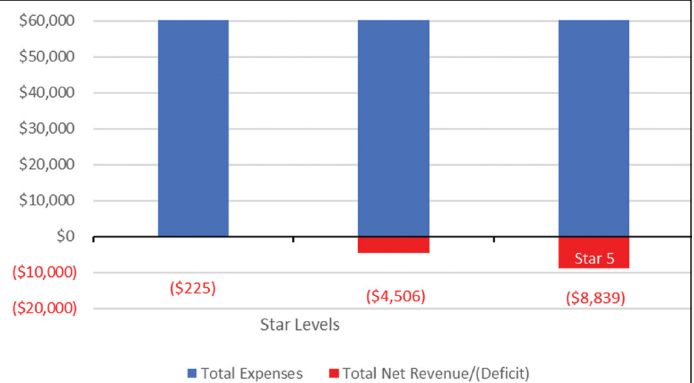


CHART M

FCC Type II—Total Net Revenue/Deficit vs. Total Expenses: Central Region





END NOTES

- ¹ This approach is supported by the reauthorized federal Child Care and Development Block Grant Act of 2014 (Pub.L. 113-186) which gives states the option to use a statistically valid and reliable alternative methodology for setting payment rates, such as a cost estimation model.
- ² The Kentucky Family Child Care Cost Model tool has its roots in the [Federal Provider Cost Quality Calculator](#) (PCQC), coupled with a flexible Excel (Microsoft fiscal software) spreadsheet tool developed by Anne Mitchell for more detailed use, including modeling the impact of quality rating systems.
- ³ To learn more about the CACFP, visit: <https://www.fns.usda.gov/cacfp/child-and-adult-care-food-program>.
- ⁴ School age children are not included in the factor of total children for the purposes of staff calculations.
- ⁵ See User Guide: Provider Cost of Quality Calculator August 2019; National Center on Early Childhood Quality Assurance by the U.S Department of Health and Human Services, Administration for Children and Families, Office of Head Start, Office of Child Care, and Health Resources and Services Administration.
- ⁶ Employment taxes are factored on the total salaries. If the assistant teacher is full-time the mandatory tax rate would be lower than self-employed and thus should be noted in the final calculation.
- ⁷ The PCQC format for entering the FCC expenses is the same as the format on the annual federal income tax returns (Schedule C: Profit or Loss from Business and Form 8829). Source [PCQC User Manual August 2019](#).
- ⁸ The User Manual is accessible within the PCQC tool.
- ⁹ The default values for this category were collected from FCC providers in several states per the [PCQC User Manual](#). Kentucky specific data were not available.