



ADEQUACY FOR EXCELLENCE IN KENTUCKY: REPORT 2 (OF 2)

**Presented to the
Council for Better Education**

Tom Shelton, President (Fayette County)
Nannette Johnston, Treasurer (Hardin County)
Ed McNeel, Vice President (Corbin Independent)
Anthony Strong, Vice President (Pendleton County)

2014
(Updated 12-09-2014)

Michael Goetz
Michael Griffith
Allan Odden
Lawrence O. Picus
Anabel Aportela
Adriane Williams

Picus Odden & Associates
August, 2014

ADEQUACY FOR EXCELLENCE

ADVISORY COMMITTEE MEMBERS

The following report was developed in cooperation with a 15 member Advisory Committee, representing various Kentucky stakeholder groups.

Justin Bathon, Assistant Professor, University of Kentucky

Robyn Baxter, KY Department of Education

Andrew Brennan, Senior, PL Dunbar High School

Michael Dailey, Associate Director for Student Achievement, Fayette County Public Schools

Representative Kelly Flood, House District 75, Fayette

Blake Haselton, Dean of School of Education and Human Development, U of Louisville

James Hodge, Lexington Traditional Middle School (LTMS), Fayette County

Mary Minyard, Principal, Young Elementary School, Jefferson County School District

Leon Mooneyhan, Chief Executive Officer, OVEC

Randy Poe, Superintendent, Boone County School District

Tom Richey, Superintendent, Henderson County School District

Matt Robbins, Daviess County Public School District's Asst. Sup of Business and Operations

Jack Rose, Professor, Department of Educational Studies, Murray State University

Joanna Howerton Stevens, Mathematics Lead Teacher, Lincoln County High School

Henry Webb, Superintendent of Floyd County Schools

CONTENTS

Contents	2
Executive Summary	3
Evidence-Based Adequacy Model.....	5
Evidence-Based Methodology	12
Compensation Levels.....	12
Regional Cost Adjustments.....	14
Key Findings.....	15
Conclusion	17
Appendix A: ky Comparable wage index (2005-06).....	19
Appendix B: District Comparisons between EB Model and 2012-13 SEEK Revenues	20
Appendix C: Technical Aspects and Functionality of EB Excel-based model	26
Technological specifications.....	26
Functionality to Alter Model Parameters.....	26
Functionality to View Data.....	27
References.....	28

EXECUTIVE SUMMARY
ADEQUACY FOR EXCELLENCE IN KENTUCKY
Picus Odden & Associates
August 2014

This document describes Picus Odden & Associate’s findings from a contemporary, independent review of Kentucky’s school finance system. It draws on our work with many states to develop student outcome-focused, adequacy-based funding systems. We are confident our approach to reviewing and evaluating school funding systems will meet Kentucky policymakers’ expectations for assessing the state’s need to find resource allocation strategies that will lead to improved student outcomes. The evidence used to support the allocations in this report can be found in Adequacy for Excellence: Report 1. Recommendations combine scholarly evidence and teacher and school business officials’ experiences from across the state (the latter referred to as “Stakeholder Panels”), as well as an Advisory Committee, which made final decisions about how the components of the Evidence-Based Model (EB) will apply to Kentucky.

The EB approach to school finance adequacy takes into consideration the primary aspects of the learning process—those that lead directly to student academic growth. In the case of Kentucky, there exists a difference between what the EB approach suggests is a way to reach high academic standards, such as those in indicated by the Common Core Academic Standards, and the funds expended by KY school districts in 2012-13.

In 2012-13 KY education revenues reached \$7.83 billion, including \$5.91 billion at the district level, as well as \$1.10 billion in On-Behalf benefit payments, \$20.95 million for Kentucky Department of Education, and \$16.13 million for Kentucky schools for the Blind and Deaf at the state level.

During the 2012-13 school year, the EB model suggests that all districts could reach adequacy with roughly \$9.40 billion in the education system, or approximately \$2.44 billion (25.98 percent) over the expenditures in the system. This \$9.40 billion equates to \$13,130 per pupil (ADM).

The difference between current school district revenues and our projection of adequate funding varies across the state’s 174 school districts ranging from \$9,285 per-pupil below the adequacy model to \$3,721 per-pupil above the adequacy model estimate. Only one district (Anchorage Independent) spent above the adequacy level. This study does not determine from what source (i.e. local, state, or federal), resources are necessary to bring all districts to an adequate level.¹ All data exclude resources received from federal programs. Therefore, when policymakers determine adequacy, they must also consider that additional federal resources may be available (and were received in 2012-13) and are outside of the adequacy model purview.

¹ Note that in this model health, retirement, and technology “On-Behalf” expenditures have been brought from the state level to the district level to more accurately estimate the revenues of a school and district.

This report may be used in conjunction with Adequacy for Excellence Report 1 and the Excel-based model, KY EB Model.xls, to determine resources to bring Kentucky's system of school funding to adequate levels.²

² To use the functionality available in KY EB Model.xls, see Appendix C.

AN EVIDENCE-BASED ADEQUACY MODEL

The Evidence-Based (EB) approach to estimating school finance adequacy identifies a cohesive set of school-level resources, or elements, required to deliver a comprehensive and high-quality instructional program powerful enough to educate students to proficiency in state standards. Each recommendation is supported by research evidence on programmatic effectiveness. To determine the costs of the EB approach in Kentucky, each formula and ratio has been applied to the appropriate school level pupil counts in each district. To determine an estimated cost, a price is then placed on each element (e.g., an appropriate salary and benefits level for personnel). School resources are aggregated to the district level, at which point central office staff and maintenance and operations resources are added, along with other expenditures that are not modeled in the Evidence-Based Approach (e.g., transportation and debt service). The final step involves aggregating the cost of all school- and district-level elements, and adding state level expenditures, to arrive at a total statewide cost and comparing that cost with the 2012-13 SEEK revenues.

The tables that follow provide examples of how school level resources would be provided to prototypical schools, and include models used for small districts (i.e., districts with 390 or fewer students). These tables match resource components in Report 1, with more fiscal data exhibited.

- **Table 1.1 Kentucky Prototypical Elementary, Middle and High School Models** provides a summary of various school-level components of the EB approach, identified within three prototypical schools—elementary, middle, and high.
- **Table 1.2 EB School Staffing and Resource Models for K-12 English Learners, Low Income students, Special Education and Career and Technical Education (CTE) Programs** provides a summary of the resources available for students who need additional resources to achieve proficiency.
- **Table 1.3 EB Model Resources for PK Programs** provides a summary of the resources for a prototypical pre-kindergarten program.
- **Table 1.4 EB Model for Small Districts** provides staffing levels for districts that are smaller than a typical linear path allows for providing sufficient staff and resources to provide an adequate education.
- **Table 1.5 Kentucky Prototypical Central Office** provides staffing levels for a Central Office serving 3900 students.

Table 1.1
Kentucky Prototypical Elementary, Middle and High School Models

School Element	Elementary Schools	Middle Schools	High Schools
School Configuration	K-5	6-8	9-12
Prototypical school size	450	450	600
Class size	K-3: 15; 4-5: 25	6-8: 25	9-12: 25
Full-day kindergarten	Yes	NA	NA
Length of Teacher Contract	192 days: Instruction: 174, Holiday: 4 Open/Close Schools & Parent Conferences: 4 Professional Dev.: 10 (total includes 6 additional PD days)		
Personnel Resources			
Core Content Teachers	26	18	24
Specialist Teachers	20% more 5.2	20% more 3.6	33.33% more assuming a 90 minute block schedule; teachers teach 3 blocks daily: 8.0
Instructional Coaches	1 per 200 students: 2.25	1 per 200 students: 2.25	1 per 200 students: 3.0
Total Core Content Specialist and Coaches	33.45	23.85	35.0
Tutors (non-FRPL)	1.0	1.0	1.0
Substitute Teachers	5% extra core content, specialist, SPED, Tutors & instructional coaches: 1.72	5% extra core content, specialist, SPED, Tutors & instructional coaches: 1.24	5% extra core content, specialist, SPED, Tutors & instructional coaches: 1.80
Counselors	1.0	1.0 /250 students 1.8	1.0 /250 students 2.4
Nurses	1/750 students 0.6	1/750 students 0.6	1/750 students 0.8
Instructional Aides	0	0	0
Supervisory Aides	2.0	2.0	3.0

Table 1.1 (continued)
Kentucky Prototypical Elementary, Middle and High School Models

School Element	Elementary Schools	Middle Schools	High Schools
Librarian	1.0	1.0	1.0
Principal	1.0	1.0	1.0
Asst. Principal/ Program Coordinator	0.0	0.0	1.0
School Site Secretary	2.0	2.0	3.0
Dollar per Pupil Resources			
Additional Professional development	; \$100/student, in addition to extra PD days and Inst. Coach resources, above		
Technology Equipment	\$250/student	\$250/student	\$250/student
Instructional Materials including Library Resources	\$140/student	\$140/student	\$175/student
Short Cycle Formative Assessments	\$25/student	\$25/student	\$25/student
Student Activities	\$250/student	\$250/student	\$250/student
Gifted/talented students	\$25/student (based on total school students)	\$25/student (based on total school students)	\$25/student (based on total school students)

Table 1.2

EB School Staffing and Resource Models for K-12 English Learners, Low Income Students, Special Education, and Career and Technical Education (CTE) Programs

School Element	Resources
English Learners	
EL Teachers	1 teacher for every 100 EL students
Substitutes	5 percent of teacher positions
Professional Development	As with all teachers, 6 additional PD days for each certified EL position
Instructional Materials	\$10 per EL student beyond what each generates through the core model
Low Income	
Tutors	1 teacher for every 125 FRPL students
Extended Day	3.33 teachers for every 125 FRPL students, times 0.25
Summer School	3.33 teachers for every 125 FRPL students, times 0.25
Additional Pupil Support	1 teacher support position for every 100 FRPL students
Substitutes	5 percent of tutor positions
Professional Development	As with all teachers, 6 additional PD days for each certified Pupil Support position
Instructional Materials	\$10 per FRPL pupil for each of 4 programs (tutors, extended day, summer school and pupil support)
Students with Mild and Moderate Disabilities*	
Special Education – mild and moderate disabilities	1.0 teacher and 1.0 aide for every 150 regular students (to be used to provide special education services)
Substitute	5 percent of teacher and tutor positions
Professional Development	As with all teachers, 6 additional PD days for each certified SPED position
Instructional Materials	\$10 for every regular student to be used to provide special education services
Career and Technical Education	
Equipment Resources	\$9,000 per CTE teacher FTE

*Special Education for students with severe and profound disabilities is 100% state funded with a state-level aid program.

**Table 1.3
EB Model Resources for Pre-K Programs**

School Element	Pre-K Programs
Program Configuration	Pre-K
Prototypical Program Size	150
Class size	15
Length of Teacher Contract	192 days: Instruction: 174, Holiday: 4 Open/Close Schools & Parent Conferences: 4, Prof. Dev.: 10 (total includes 6 additional PD days)
Personnel Resources	
Core Content Teachers	10
Specialist Teachers	20% more 2.0
Instructional Coaches	1 per 200 students: 0.75
Total Core Content, Specialist, and Coach Teachers	12.75
Pupil Support	1 FTE support position for every 100 FRPL students 1.5
Special Education – mild and moderate disabilities*	1.0 Teacher and 1.0 Aide for every 150 regular students (to be used to provide special education services) 1.0 Teacher, 1.0 Aide
Substitute Teachers	5% extra classroom, specialist, SPED & instructional coaches: 0.78
Instructional Aides	1 per classroom: 10
Supervisory Aides	0.75
Assistant Principal/ Program Coordinator	1.0
Program Site Secretary	1.0
Dollar per Pupil	
Professional development	\$100/student
Technology/equipment	\$250/student
Instructional Materials including Library Resources	\$140/student
Short Cycle formative Assessments	\$25/student

*Special Education for students with severe and profound disabilities is 100% state funded.

**Table 1.4
EB Model for Small Districts**

	District 390			District 195			District 97.5		
	390 Students			195 Students			97.5 Students		
	Resource	Unit Cost	Total Cost	Resource	Unit Cost	Total Cost	Resource	Unit Cost	Total Cost
Personnel Resources									
Core Teachers (K-8)	14.00	\$66,956	\$937,389	0.00	\$66,956	\$0	0.00	\$66,956	\$0
Core & Spec Teachers (K-8)	0.00	\$66,956	\$0	6.00	\$66,956	\$401,738	0.00	\$66,956	\$0
Elective Teachers (K-8)	3.00	\$66,956	\$200,869	0.00	\$66,956	\$0	0.00	\$66,956	\$0
Core Teachers (9-12)	5.00	\$66,956	\$334,782	0.00	\$66,956	\$0	0.00	\$66,956	\$0
Core & Spec Teachers (6-8)	0.00	\$66,956	\$0	7.00	\$66,956	\$468,695	0.00	\$66,956	\$0
Elective Teachers (9-12)	2.00	\$66,956	\$133,913	0.00	\$66,956	\$0	0.00	\$66,956	\$0
Staff (K-12)	0.00	\$66,956	\$0	0.00	\$66,956	\$0	13.93	\$66,956	\$932,606
Instructional Facilitators	2.00	\$66,956	\$133,913	1.00	\$66,956	\$66,956	0.00	\$66,956	\$0
SPED Census Teachers	2.60	\$66,956	\$174,087	1.30	\$66,956	\$87,043	0.65	\$66,956	\$43,522
SPED Census Aides	2.60	\$24,993	\$64,983	1.30	\$24,993	\$32,491	0.65	\$24,993	\$16,246
Tutors (non-FRPL)	1.00	\$66,956	\$66,956	0.50	\$66,956	\$33,478	0.00	\$66,956	\$0
Substitute Teachers	1.30	\$66,956	\$87,043	0.70	\$66,956	\$46,869	0.00	\$66,956	\$0
Counselors/Nurse	2.00	\$48,770	\$97,540	1.00	\$48,770	\$48,770	0.00	\$48,770	\$0
Supervisory Aides	2.00	\$24,993	\$49,987	1.00	\$24,993	\$24,993	0.00	\$24,993	\$0
Librarians	1.00	\$42,906	\$42,906	0.50	\$42,906	\$21,453	0.00	\$42,906	\$0
Principals	1.00	\$75,819	\$75,819	1.00	\$75,819	\$75,819	0.00	\$75,819	\$0
Assistant Principals	1.00	\$74,366	\$74,366	0.00	\$74,366	\$0	1.00	\$74,366	\$74,366
School Secretary	2.00	\$37,355	\$74,709	1.00	\$37,355	\$37,355	0.00	\$37,355	\$0
Dollar per Pupil Resources									
PD Resources	390	\$100	\$39,000	195	\$100	\$19,500	98	\$100	\$9,750
Technology/Equipment	390	\$250	\$97,500	195	\$250	\$48,750	98	\$250	\$24,375
Instructional Materials and	390	\$152	\$59,150	195	\$152	\$29,575	98	\$152	\$14,788
Formative Assessments	390	\$25	\$9,750	195	\$25	\$4,875	98	\$25	\$2,438
Student Activities	390	\$250	\$97,500	195	\$250	\$48,750	98	\$250	\$24,375
Gifted Funds	390	\$25	\$9,750	195	\$25	\$4,875	98	\$25	\$2,438
Central Office									
Professional Staff	2.00	\$77,074	\$154,148	1.00	\$77,074	\$77,074	1.00	\$77,074	\$77,074
Support Staff	2.00	\$37,355	\$74,709	1.00	\$37,355	\$37,355	1.00	\$37,355	\$37,355
Misc. and Communication	390.00	\$350	\$136,500	195.00	\$350	\$68,250	97.50	\$350	\$34,125
M&O									
Custodians	2.00	\$38,208	\$76,417	1.00	\$38,208	\$38,208	0.50	\$38,208	\$19,104
Maintenance	1.00	\$53,246	\$53,246	0.50	\$53,246	\$26,623	0.25	\$53,246	\$13,312
Groundskeepers	1.00	\$46,157	\$46,157	0.50	\$46,157	\$23,079	0.25	\$46,157	\$11,539
Utilities	390	\$197	\$76,668	195	\$197	\$38,334	97.5	\$197	\$19,167
Supplies	37,029	\$0.07	\$2,592	37,029	\$0.07	\$2,592	37,029	\$0.07	\$2,592
Total Per Pupil Cost			\$8,929			\$9,300			\$13,940

**Table 4.5
Central Office Prototype**

Central Office			
Students	3900		
	Resources	Unit Cost	Total Cost
Superintendents Office			
Superintendent	1.0	\$157,848	\$157,848
Secretary	1.0	\$37,355	\$37,355
Business Office			
Business Manager	1.0	\$73,369	\$73,369
Director of Human Resources	1.0	\$73,369	\$73,369
Accounting Clerk	1.0	\$48,838	\$48,838
Accounts Payable	1.0	\$59,905	\$59,905
Secretary	1.0	\$38,339	\$38,339
Curriculum and Support			
Asst. Superintendent	1.0	\$77,074	\$77,074
Director of Pupil Services	1.0	\$73,369	\$73,369
Director of SPED	1.0	\$73,369	\$73,369
Director of Assessment and Evaluation	1.0	\$73,369	\$73,369
Secretary	3.0	\$37,355	\$112,064
Technology			
Director of Technology	1.0	\$73,369	\$73,369
Computer Technician	1.0	\$66,956	\$66,956
Secretary	1.0	\$37,355	\$37,355
Operations and Maintenance			
Director of M&O	1.0	\$73,369	\$73,369
Secretary	1.0	\$37,355	\$37,355
Other Expenses			
Misc. (communication, purch services, insurance, supplies, legal, audit, association fees, elections, technology, etc.)	3900	\$350	\$1,365,000
Central Office Cost			
			\$2,551,672
Per Student			
			\$654

EVIDENCE-BASED METHODOLOGY

The KY EB Model is built beginning at the school level and subsequently aggregated to the district and state levels. At each of these levels, prototypes of schools, districts, and the state are used to produce the cost of education. Additionally, for those components not included in the EB Model, expenditures are “carried forward.” Reliable, comparable revenues data are only available at the district and state levels in the current KY data collection, so estimates of differences are made at these two levels.

The two situations in which school level characteristics influence district level outputs are in the cases of a school designated as an alternative school or a necessarily small, remote school. In these cases we use a different formula from the prototypical school.³ Regardless of whether a school is designated small or alternative, the resources for each school are aggregated up to the district, where additional small district prototypes exist, and then to the state level to compare the EB resources to the SEEK revenues. The intent is that, at the appropriate level (district and state), actual 2012-13 revenues may be compared to what the EB Model would have produced in the same 2012-13 school year, hence a difference in costs of KY education towards adequacy. Additional funds are in the system due to some districts expending more funding than deemed necessary by the EB model. These funds are not recaptured.

The excel-based EB Model that accompanies this report is a simulation that may be used to estimate how a change to any formula or ratio or per pupil dollar figure will affect the cost of implementing the model. The model is designed to make multiple policy decisions concurrently, as all input decisions are tied to all aspects of the model. Any individual policy decision will have a fiscal impact, and multiple policy decisions will have a different impact than any individual decision—this allows a better estimate of the overall effect of any and all changes to the model.

Compensation Levels

As personnel Full-Time Equivalent (FTEs) and personnel compensation are the major cost of the education system, Picus Odden & Associates is explicit about the salary and benefit levels used throughout the EB Model. Working with KDE, Legislative Research Council, and district-level Business Officers, average salary levels are used in the model (see Table 1.6, below). All professional compensation, due to model design approved by the Advisory Committee, is adjusted by a Comparable Wage Index to compensate for the ability to attract similar talent to schools and districts in different regions.

³ The small school prototype includes one Assistant Principal and a 1/7 teacher/student ratio in addition to special education and per-student fiscal resources (e.g., activities, professional development, technology and equipment, and materials).

Table 1.7
Salary, Benefit, and Compensation Levels

Position (1)	Salary (2)	Benefits (3)	Compensation (4)
School Level			
Principal	\$57,626	\$18,194	\$75,819
Asst. principal	\$56,521	\$17,845	\$74,366
Teacher	\$50,890	\$16,067	\$66,956
Guidance Counselor	\$58,242	\$18,388	\$76,630
Media Librarian	\$49,305	\$15,566	\$64,871
School Nurse	\$32,610	\$10,296	\$42,906
Secretary/Clerical	\$22,593	\$14,762	\$37,355
Supervisory/Instruct Aide	\$15,116	\$9,877	\$24,993
District Level			
Superintendent	\$119,971	\$37,877	\$157,848
Asst. Superintendent	\$58,579	\$18,495	\$77,074
Directors	\$55,763	\$17,606	\$73,369
Accounting Clerk	\$29,538	\$19,300	\$48,838
Accounts Payable	\$36,232	\$23,673	\$59,905
Secretary/Clerical	\$22,593	\$14,762	\$37,355
Custodian	\$23,109	\$15,099	\$38,208
Groundskeeper	\$27,917	\$18,241	\$46,157
Maintenance	\$32,204	\$21,042	\$53,246

Positions (column 1) indicates the positions used in the model for the prototypes. Salary levels (column 2) are KY’s 2012-13 average salary for these positions, based on salaries of all KY personnel supplied by KDE. Picus Odden & Associates calculated weighted average salary levels for these positions. Note that the salaries of Teacher, Tutor, Guidance Counselor, and Media Librarian each include increases for six additional professional development days added to the school calendar, respectively an increase of \$1,624, \$1,624, \$1,859, and \$1,574, based on a 182 day school year. These salary and contract increases apply to all personnel who work on a teacher salary schedule. Finally, column 3 shows the total compensation for these positions.

Benefit levels are 31.57 percent for certified staff and 65.34 percent for classified staff, a weighted average across these two positions types. The benefit rates are detailed in Table 1.8, using weighted average salaries of certified and classified staff salaries for benefits percentages. What KY generally considers “On Behalf” benefit payments at the state level are brought down to the school and district position levels throughout the model. We use these data as benefit estimates for average compensation levels in the EB Model.

**Table 1.8
Benefit Levels for Certified and Classified Staff**

Position (1)	Benefit (2)	Benefit Rate (3)	Benefit Cost (4)
Certified Staff	Employer Life Insurance (a)	0.12%	\$58
\$50,047	Medicare	1.45%	\$726
	Unemployment (d)	0.12%	\$60
	Worker's Comp (c)	0.23%	\$115
	KTRS-Local Board	1.00%	\$500
	KTRS-State Level	14.11%	\$7,059
	Health Insurance (\$7,206) (b)	14.40%	\$7,206
	State Admin Fee (e)	0.15%	\$76
	Total Benefits--Certified	31.57%	\$15,801
Classified Staff	Employer Life Insurance (a)	0.17%	\$32
\$19,454	FICA	6.20%	\$1,206
	Medicare	1.45%	\$282
	Unemployment (d)	0.31%	\$60
	Worker's Comp (c)	0.23%	\$45
	CERS	19.55%	\$3,803
	Health Insurance (\$7,206) (b)	37.04%	\$7,206
	State Admin Fee (e)	0.39%	\$76
	Total Benefits--Classified	65.34%	\$12,711

- (a) Employer Provided Life Insurance may vary from district to district. Most districts provide the amount of annual employee salary, (0.84%). Additionally, the State provides a life insurance policy on all full-time employees of \$20,000 total amount per FT employee. (0.032% prof/0.083% support). Both are combined and shown in the percentage reflected in the table above.
- (b) Health insurance—selected based on Single Enhanced Non-Smoking Plan available in 2012-13.
- (c) Worker's Compensation will vary from district to district due to district's unique insurance rating.
- (d) Unemployment is 1% of first \$6,000 of gross wages (\$60.00/year). Forced percentage based on standardized salary levels chosen.
- (e) State Administration Fee for 2012-2013 was \$76.32 for each employee qualifying for benefits. The pro-rate percentages for prof/non-prof shown in the table above.

Regional Cost Adjustments

The Comparable Wage Index (CWI) is applied to professional personnel compensation throughout the model. Essentially, any time professional compensation (certified, not classified personnel), is necessary to determine costs, this compensation is adjusted by an index specifically calculated for school and district staff. In situations in which per-pupil figures are determined from models that include professional staff (e.g. Central Office, PK education, and Small District Adjustments), the proportion of professional staff to model cost is determined, and then we apply the CWI proportionally (Taylor, 2011; Taylor & Fowler, 2006).

The KY CWI ranges from 0.91 to 1.17. Fifteen CWI values exist in the model and each district is assigned one value to apply to its professional staff. This is the method by which compensation is comparable across regions of the state (i.e. the adequate cost to hire similarly qualified people given the amenities and disamenities of any area of Kentucky, known via the labor market demands of similar positions (Taylor, 2013). This CWI also reflects regions that may be a part of labor market across state lines, such as is the case of Boone County and Cincinnati. (See Appendix A for specific cost adjustments applied to compensation across districts).

Carry Forwards

A number of components of the education system are not modeled in the EB Approach. For each of these components, we “carry forward” actual 2012-13 revenues district by district and for the state. So, while these components have no effect on the difference in cost between the EB Model and SEEK revenues, by carrying them forward, we have a more complete picture of the cost of education in KY.

The carry forwards include food service, community services, adult education operations, facilities, debt service, fund transfers, (unprorated) transportation, KDE operations, and KY school for the Blind/Deaf general fund allocation. The value of these carry forwards are detailed in the Results section of this document.

Key Findings

In 2012-13 KY education revenues reached \$7.83 billion, including \$5.91 billion at the district level, as well as \$1.10 billion in On-Behalf benefit payments, \$20.95 million for Kentucky Department of Education, and \$16.13 million for Kentucky schools for the Blind and Deaf at the state level.

During the 2012-13 school year, the EB model suggests that all districts could reach adequacy with roughly \$9.40 billion in the education system, or approximately \$2.44 billion (25.98 percent) over the expenditures in the system. This \$9.40 billion equates to \$13,130 per pupil (ADM).

The difference between current school district revenues and our projection of adequate funding varies across the state’s 174 school districts ranging from \$9,285 per-pupil below the adequacy model to \$3,721 per-pupil above the adequacy model estimate. Only one district (Anchorage Independent) spent above the adequacy level. This study does not determine from what source (i.e. local, state, or federal), resources are necessary to bring all districts to an adequate level.⁴ All data exclude resources received from federal programs. Therefore, when policymakers determine adequacy, they must also consider that additional federal resources may be available (and were received in 2012-13) and are outside of the adequacy model purview.

⁴ Note that in this model health, retirement, and technology “On-Behalf” expenditures have been brought from the state level to the district level to more accurately estimate the revenues of a school and district.

Table 1.9 shows several components of the EB model, including small school and small district adjustments; the EB costs total \$7.25 billion. The table also includes several components of several items not addressed by the EB model and “carried forward” for all districts; the carried forward amounts total \$2.15 billion. When added together these two major items total \$9.40 billion.

Table 1.9
Total EB Model Costs⁵

Total Funding		\$9,400,055,792	
		Students	Resources
Evidence-Based Funding Model	Total K-12	662,864	\$4,338,114,934
	Pre-K	53,080	\$572,235,127
	Special Education	86,018	\$438,158,594
	Low Income	376,295	\$916,697,861
	English Learners	20,211	\$15,474,423
	Small School Adjustment		\$40,434,548
	Small District Adjustment		\$10,703,977
	Central Office		\$433,695,198
	Maintenance & Operations		\$480,412,752
	Total		\$7,245,927,414
Carry Forwards	Food Service		\$347,932,132
	Community Services		\$60,861,322
	Adult Education Operations		\$287,215
	Facilities		\$6,976,259
	Debt Service		\$715,849,097
	Fund Transfers		\$566,478,697
	Transportation		\$418,656,457
	Kentucky Dept of Education Operations		\$20,951,500
	Kentucky School for the Blind /Deaf General Fund Allocation		\$16,135,700
	Total		\$2,154,128,378

⁵ Reliable data on the number of Continuing and Technical Education (CTE) teachers is not available. However, we estimate the filled and unfilled teacher positions to be 450. EB model parameters suggest an additional \$9,000 per CTE FTE, for a cost of about \$4.0 million, which is not included in these models.

Table 1.10 shows the FTE and costs of all the staffing components of the EB model, as well as the costs of all the per pupil elements of the EB model. Note that Low Income strategies serve students with free *and reduced* price lunch (as opposed counts of free priced lunch status) and allocates significantly more than the current system at \$2,436 per low income student. English learners receive slightly less at \$765.64 per EL student. Special Education, using the census approach, comes to \$661.01 per every student in a district. The Small School Adjustment (schools under 50 students) provides an additional \$40.43 million. The KY EB Model.xls document includes further breakdowns in these categories at the district as well as the school levels, providing detail of personnel and costs that relate to the EB Adequacy approach to school finance.

CONCLUSION

Based on existing scholarly evidence of program effectiveness and the input of several KY stakeholders, Picus Odden & Associates created a KY school finance model that produces a rationale for providing adequate funding for all KY students. The information in this document, as well as Adequacy and Equity for Excellence: Report 1, guides policymakers towards creating a system that is fiscally adequate. Coupling these reports with the excel-based KY EB Model, a transparent and program-based understanding of adequacy emerges.

The fiscal implications of this work are great. As policymakers determine how and when to implement programs and policies recommended by Picus Odden & Association, in conjunction with KY leaders, the information supplied will be of great use.

**Table 1.10
Core KY EB Model Resources**

Evidence-Based Model Resources			
		FTE	Resources
Core Instruction	Core Classroom Teachers	32,060	\$2,218,565,522
	Substitutes		\$110,928,276
	Total	32,060	\$2,329,493,799
Specialist Teachers	Specialist Teachers	7,429	\$514,117,400
	Substitutes		\$25,705,870
	Total	7,429	539,823,270
Teacher and Pupil Supports	Instructional Facilitators	3,299	\$228,327,998
	Tutors	1,360	\$94,143,496
	Guidance Counselors	2,079	\$164,660,267
	Supervisory Aides	3,039	\$75,947,595
	Librarians	1,360	\$114,620,537
	Substitutes		\$16,123,575
	Total	11,138	\$693,823,467
School Administration	Principals	1,360	\$106,605,077
	Assistant Principals	318	\$24,442,054
	Secreterial/Clerical	3,039	\$113,509,968
	Total	4,717	\$244,557,099
Per Pupil Resources	Materials		\$99,555,686
	Equipment/Technology		\$165,716,005
	Gifted & Talented		\$16,571,601
	Professional Development		\$66,286,402
	Assessments		\$16,571,601
	Student Activities		\$165,716,005
	Total		\$530,417,300
Special Education	Teachers	4,419	\$305,792,088
	Aides	4,419	\$110,448,262
	Substitutes		\$15,289,604
	Materials		\$6,628,640
	Total	8,838	\$438,158,594
Low Income	Pupil Support	3,132	\$214,681,560
	Summer School	3,132	\$214,681,560
	Extended Day	3,132	\$214,681,560
	Tutors	3,132	\$214,681,560
	Substitutes		\$42,936,782
	Materials		\$15,034,840
	Total	12,529	\$916,697,861
English Learners	Teachers	202	\$14,545,451
	Substitutes		\$727,273
	Materials		\$201,700
	Total	202	\$15,474,423
Small School Adjustment	Principals	132	\$9,952,524
	Teachers	428	\$29,030,498
	Substitutes		\$1,451,525
	Total	560	\$40,434,548

APPENDIX A: KY COMPARABLE WAGE INDEX (2005-06)

School District	CWI	School District	CWI	School District	CWI
ADAIR CO SCH DIST	0.88	FRANKFORT IND SCH DIST	1.05	METCALFE CO SCH DIST	0.87
ALLEN CO SCH DIST	0.87	FRANKLIN CO SCH DIST	1.05	MIDDLESBORO IND SCH DIST	0.89
ANCHORAGE IND SCH DIST	1.13	FT THOMAS IND SCH DIST	1.20	MONROE CO SCH DIST	0.87
ANDERSON CO SCH DIST	0.99	FULTON CO SCH DIST	0.98	MONTGOMERY CO SCH DIST	0.93
ASHLAND INDEP SCH DIST	1.10	FULTON INDEP SCH DIST	0.98	MONTICELLO INDEP SCH D	0.88
AUGUSTA INDEP SCH DIST	1.20	GALLATIN CO SCH DIST	1.20	MORGAN CO SCH DIST	0.93
BALLARD CO SCH DIST	0.98	GARRARD CO SCH DIST	0.90	MUHLBERG CO SCH DIST	0.99
BARBOURVILLE IND SCH D	0.89	GLASGOW INDEP SCH DIST	0.87	MURRAY INDEP SCH DIST	0.98
BARDSTOWN IND SCH DIST	1.13	GRANT CO SCH DIST	1.20	NELSON CO SCH DIST	1.13
BARREN CO SCH DIST	0.87	GRAVES CO SCH DIST	0.98	NEWPORT INDEP SCH DIST	1.20
BATH CO SCH DIST	0.93	GRAYSON CO SCH DIST	1.01	NICHOLAS CO SCH DIST	1.05
BEECHWOOD IND SCH DIST	1.20	GREEN CO SCH DIST	0.88	OHIO CO SCH DIST	0.95
BELL CO SCH DIST	0.89	GREENUP CO SCH DIST	1.10	OLDHAM COUNTY SCHOOL DISTRICT	1.13
BELLEVUE INDEP SCH DIST	1.20	HANCOCK CO SCH DIST	0.94	OWEN CO SCH DIST	1.12
BEREA IND SCH DIST	0.90	HARDIN CO SCH DIST	1.06	OWENSBORO IND SCH DIST	0.94
BOONE CO SCHOOL DISTRICT	1.20	HARLAN CO SCH DIST	0.89	OWSLEY CO SCH DIST	0.87
BOURBON CO SCH DIST	1.06	HARLAN INDEP SCH DIST	0.89	PADUCAH IND SCH DIST	0.98
BOWLING GRN IND SCH DIST	0.99	HARRISON CO SCH DIST	1.05	PAINTSVILLE IND SCH DIST	0.92
BOYD CO SCH DIST	1.10	HARRODSBURG IND SCH DIST	0.99	PARIS INDEP SCH DIST	1.06
BOYLE CO SCH DIST	0.99	HART CO SCH DIST	0.87	PENDLETON CO SCH DIST	1.20
BRACKEN CO SCH DIST	1.20	HAZARD IND SCH DIST	0.87	PERRY CO SCH DIST	0.87
BREATHITT CO SCH DIST	0.87	HENDERSON CO SCH DIST	1.09	PIKE CO SCH DIST	0.92
BRECKINRIDGE CO SCH DIST	1.01	HENRY CO SCH DIST	1.13	PIKEVILLE IND SCH DIST	0.92
BULLITT CO SCH DIST	1.13	HICKMAN CO SCH DIST	0.98	PINEVILLE IND SCH DIST	0.89
BURGIN IND SCH DIST	0.99	HOPKINS CO SCH DIST	0.99	POWELL CO SCH DIST	0.90
BUTLER CO SCH DIST	0.99	JACKSON CO SCH DIST	0.95	PROVIDENCE INDEP SCH D	1.09
CALDWELL CO SCH DIST	0.99	JACKSON INDEP SCH DIST	0.87	PULASKI CO SCH DIST	0.88
CALLOWAY CO SCH DIST	0.98	JEFFERSON CO SCH DIST	1.13	RACELAND INDEP SCH DIST	1.10
CAMPBELL CO SCH DIST	1.20	JENKINS IND SCH DIST	0.87	ROBERTSON CO SCH DIST	0.93
CAMPBELLSVILLE IND SCH	0.88	JESSAMINE CO SCH DIST	1.06	ROCKCASTLE CO SCH DIST	0.95
CARLISLE CO SCH DIST	0.98	JOHNSON CO SCH DIST	0.92	ROWAN CO SCH DIST	0.93
CARROLL CO SCH DIST	1.12	KENTON CO SCH DIST	1.20	RUSSELL CO SCH DIST	0.88
CARTER CO SCH DIST	1.10	KNOTT CO SCH DIST	0.87	RUSSELL INDEP SCH DIST	1.10
CASEY CO SCH DIST	0.88	KNOX CO SCH DIST	0.89	RUSSELLVILLE IND SCH D	0.99
CAVERNA INDEP SCH DIST	0.87	LA RUE CO SCH DIST	1.01	SCIENCE HILL IND SCH D	0.88
CHRISTIAN CO SCH DIST	1.12	LAUREL CO SCH DIST	0.95	SCOTT CO SCH DIST	1.06
CLARK CO SCH DIST	1.06	LAWRENCE CO SCH DIST	1.10	SHELBY CO SCH DIST	1.13
CLAY CO SCH DIST	0.95	LEE CO SCH DIST	0.87	SILVER GROVE IND SCH DIS	1.20
CLINTON CO SCH DIST	0.88	LESLIE CO SCH DIST	0.87	SIMPSON CO SCH DIST	0.99
CLOVERPORT IND SCH DIST	1.01	LETCHER CO SCH DIST	0.87	SOMERSET IND SCH DIST	0.88
CORBIN INDEP SCH DIST	0.89	LEWIS CO SCH DIST	0.93	SOUTHGATE IND SCH DIST	1.20
COVINGTON IND SCH DIST	1.20	LINCOLN CO SCH DIST	0.90	SPENCER CO SCH DIST	1.13
CRITTENDEN CO SCH DIST	0.99	LIVINGSTON CO SCH DIST	0.99	TAYLOR CO SCH DIST	0.88
CUMBERLAND CO SCH DIST	0.88	LOGAN CO SCH DIST	0.99	TODD CO SCH DIST	0.93
DANVILLE INDEP SCH DIST	0.99	LUDLOW IND SCH DIST	1.20	TRIGG CO SCH DIST	1.12
DAVISS CO SCH DIST	0.94	LYON CO SCH DIST	0.93	TRIMBLE CO SCH DIST	1.13
DAWSON SPR IND SCH DIST	0.99	MADISON CO SCH DIST	0.90	UNION CO SCH DIST	0.95
DAYTON INDEP SCH DIST	1.20	MAGOFFIN CO SCH DIST	0.92	WALTON VERONA IND SCH D	1.20
EAST BERNSTADT IND SCH DIST	0.95	MARION CO SCH DIST	1.01	WARREN CO SCH DIST	0.99
EDMONSON CO SCH DIST	0.87	MARSHALL CO SCH DIST	0.98	WASHINGTON CO SCH DIST	1.01
ELIZABETHTOWN IND SCH D	1.06	MARTIN CO SCH DIST	0.92	WAYNE CO SCH DIST	0.88
ELLIOTT CO SCH DIST	1.10	MASON CO SCH DIST	0.93	WEBSTER CO SCH DIST	1.09
EMINENCE IND SCH DIST	1.13	MAYFIELD INDEP SCH DIST	0.98	WEST POINT IND SCH DIST	1.06
ERLANGER-ELSMERE IND SCHL DIST	1.20	MCCRACKEN CO SCH DIST	0.98	WHITLEY CO SCH DIST	0.89
ESTILL CO SCH DIST	0.90	MCCREARY CO SCH DIST	0.88	WILLIAMSBURG IND SCHOOL DIST	0.89
FAIRVIEW IND SCH DIST	1.10	MCCLEAN CO SCH DIST	0.94	WILLIAMSTOWN IND SCH D	1.20
FAYETTE CO SCH DIST	1.06	MEADE CO SCH DIST	1.13	WOLFE CO SCH DIST	0.87
FLEMING CO SCH DIST	0.93	MENIFEE CO SCH DIST	0.93	WOODFORD CO SCH DIST	1.06
FLOYD CO SCH DIST	0.92	MERCER CO SCH DIST	0.99		

APPENDIX B: DISTRICT COMPARISONS BETWEEN EB MODEL AND 2012-13 SEEK REVENUES

District Name	Model Students	Low Income %	EL %	Special Ed %	Evidence Based Model		SEEK District Expenditures		Additional Cost of EB Model	
					Total	Total PP	Total	Total PP	Cost	Cost PP
001 Adair County	2,756	61.32%	1.31%	12.08%	\$43,183,111	\$15,669	\$33,602,840	\$12,193	\$9,580,271	\$3,476
005 Allen County	3,154	54.94%	0.79%	9.67%	\$37,117,923	\$11,768	\$28,195,206	\$8,939	\$8,922,716	\$2,829
006 Anchorage Independent	424	0.71%	0.71%	12.02%	\$5,792,340	\$13,655	\$7,370,671	\$17,376	(\$1,578,331)	(\$3,721)
011 Anderson County	4,131	41.91%	0.85%	11.33%	\$60,252,931	\$14,587	\$44,148,314	\$10,688	\$16,104,617	\$3,899
012 Ashland Independent	3,414	49.65%	0.12%	12.10%	\$43,136,305	\$12,636	\$27,621,082	\$8,091	\$15,515,223	\$4,545
013 Augusta Independent	311	62.97%	0.00%	13.17%	\$5,638,837	\$18,117	\$2,748,867	\$8,832	\$2,889,971	\$9,285
015 Ballard County	1,424	52.33%	0.07%	9.13%	\$18,180,352	\$12,770	\$13,491,322	\$9,477	\$4,689,030	\$3,294
016 Barbourville Independent	683	61.35%	0.15%	8.49%	\$7,693,324	\$11,264	\$5,399,471	\$7,905	\$2,293,853	\$3,358
017 Bardstown Independent	2,721	56.82%	2.35%	12.46%	\$37,243,209	\$13,687	\$26,380,643	\$9,695	\$10,862,566	\$3,992
021 Barren County	5,117	51.18%	0.80%	11.90%	\$64,516,214	\$12,608	\$48,615,661	\$9,500	\$15,900,553	\$3,107
025 Bath County	2,132	68.44%	0.52%	10.84%	\$25,784,644	\$12,096	\$17,482,237	\$8,201	\$8,302,407	\$3,895
026 Beechwood Independent	1,210	16.52%	2.81%	7.52%	\$14,967,234	\$12,366	\$11,677,463	\$9,648	\$3,289,771	\$2,718
031 Bell County	3,162	71.11%	0.00%	15.53%	\$37,866,276	\$11,974	\$27,127,507	\$8,578	\$10,738,769	\$3,396
032 Bellevue Independent	825	70.17%	0.97%	11.88%	\$11,019,960	\$13,355	\$6,899,705	\$8,362	\$4,120,255	\$4,993
034 Berea Independent	1,180	53.81%	1.44%	16.10%	\$13,756,659	\$11,658	\$11,452,921	\$9,706	\$2,303,738	\$1,952
035 Boone County	21,670	31.69%	4.69%	9.98%	\$308,542,237	\$14,238	\$213,014,785	\$9,830	\$95,527,452	\$4,408
041 Bourbon County	2,867	52.73%	4.50%	12.66%	\$37,841,731	\$13,197	\$26,780,089	\$9,339	\$11,061,643	\$3,858
042 Bowling Green Independent	4,266	48.71%	9.12%	10.62%	\$54,814,641	\$12,849	\$39,703,624	\$9,307	\$15,111,017	\$3,542
045 Boyd County	3,493	48.84%	0.26%	13.05%	\$46,484,040	\$13,308	\$34,037,721	\$9,745	\$12,446,320	\$3,563
051 Boyle County	2,831	42.31%	0.60%	14.62%	\$37,992,401	\$13,418	\$29,133,635	\$10,290	\$8,858,766	\$3,129
055 Bracken County	1,307	54.50%	0.00%	11.94%	\$18,283,859	\$13,994	\$10,633,866	\$8,139	\$7,649,993	\$5,855
061 Breathitt County	2,283	70.29%	0.04%	15.11%	\$28,257,696	\$12,375	\$20,699,030	\$9,065	\$7,558,666	\$3,310
065 Breckinridge County	2,962	57.54%	0.41%	10.57%	\$39,490,977	\$13,334	\$26,991,233	\$9,114	\$12,499,744	\$4,221
071 Bullitt County	13,096	47.03%	0.69%	11.84%	\$200,750,201	\$15,329	\$143,588,994	\$10,964	\$57,161,208	\$4,365
072 Burgin Independent	491	39.12%	0.00%	12.63%	\$5,961,340	\$12,145	\$4,402,213	\$8,968	\$1,559,127	\$3,176
075 Butler County	2,297	54.07%	1.87%	13.32%	\$29,374,398	\$12,788	\$19,248,603	\$8,380	\$10,125,795	\$4,408
081 Caldwell County	2,165	52.18%	0.32%	9.05%	\$25,390,008	\$11,725	\$16,835,512	\$7,774	\$8,554,496	\$3,950
085 Calloway County	3,403	52.98%	0.94%	12.78%	\$39,778,055	\$11,688	\$28,888,740	\$8,488	\$10,889,315	\$3,200
091 Campbell County	5,224	37.54%	0.80%	15.35%	\$92,149,103	\$17,639	\$68,045,886	\$13,025	\$24,103,216	\$4,614
092 Campbellsville Independent	1,217	65.50%	1.23%	14.22%	\$14,495,043	\$11,912	\$10,988,318	\$9,030	\$3,506,724	\$2,882
095 Carlisle County	850	48.73%	0.00%	12.01%	\$10,937,238	\$12,874	\$8,164,164	\$9,610	\$2,773,074	\$3,264
101 Carroll County	2,030	59.02%	3.70%	9.95%	\$27,467,862	\$13,533	\$20,710,309	\$10,204	\$6,757,553	\$3,329
105 Carter County	5,022	60.48%	0.86%	13.10%	\$67,972,288	\$13,536	\$42,436,080	\$8,451	\$25,536,208	\$5,085
111 Casey County	2,462	65.80%	1.95%	13.08%	\$29,613,731	\$12,029	\$20,731,879	\$8,421	\$8,881,851	\$3,608
113 Caverna Independent	918	62.96%	0.76%	12.31%	\$10,609,642	\$11,556	\$7,034,272	\$7,662	\$3,575,370	\$3,894
115 Christian County	9,667	62.42%	2.03%	10.39%	\$137,424,370	\$14,215	\$86,152,840	\$8,912	\$51,271,530	\$5,304
121 Clark County	5,934	52.71%	1.48%	11.16%	\$80,237,399	\$13,521	\$51,639,405	\$8,702	\$28,597,994	\$4,819

Appendix B: District Comparisons between EB Model and 2012-13 SEEK Revenues (cont., pg. 2)

District Name	Low				Special Ed %	Evidence Based Model		SEEK District Expenditures		Additional Cost of EB Model	
	Students	Income %	EL %	EL %		Total	Total PP	Total	Total PP	Cost	Cost PP
125 Clay County	3,686	66.69%	0.33%	15.82%	\$50,088,973	\$13,590	\$37,023,756	\$10,045	\$13,065,216	\$3,545	
131 Clinton County	1,873	66.14%	2.03%	11.26%	\$23,867,580	\$12,741	\$17,569,291	\$9,379	\$6,298,290	\$3,362	
132 Cloverport Independent	407	67.06%	0.00%	15.72%	\$6,434,750	\$15,806	\$3,536,483	\$8,687	\$2,898,266	\$7,119	
133 Corbin Independent	3,091	49.21%	0.39%	8.61%	\$36,403,767	\$11,777	\$24,898,692	\$8,055	\$11,505,074	\$3,722	
134 Covington Independent	4,178	79.67%	3.69%	17.93%	\$60,901,907	\$14,575	\$45,259,578	\$10,832	\$15,642,328	\$3,744	
135 Crittenden County	1,398	62.40%	0.36%	12.59%	\$16,787,091	\$12,012	\$10,897,784	\$7,798	\$5,889,307	\$4,214	
141 Cumberland County	1,087	69.82%	0.37%	12.14%	\$13,518,346	\$12,436	\$9,918,697	\$9,125	\$3,599,650	\$3,311	
143 Danville Independent	1,972	60.80%	3.60%	15.42%	\$24,553,613	\$12,451	\$20,654,729	\$10,474	\$3,898,884	\$1,977	
145 Daviess County	11,846	43.63%	1.83%	12.44%	\$138,321,916	\$11,676	\$113,703,513	\$9,598	\$24,618,403	\$2,078	
146 Dawson Springs Independent	699	60.39%	0.00%	14.88%	\$8,610,104	\$12,321	\$5,709,015	\$8,170	\$2,901,090	\$4,152	
147 Dayton Independent	930	72.01%	0.11%	18.16%	\$12,973,139	\$13,943	\$8,127,601	\$8,735	\$4,845,538	\$5,208	
149 East Bernstadt Independent	554	54.89%	0.00%	16.61%	\$7,666,025	\$13,841	\$4,859,811	\$8,774	\$2,806,214	\$5,067	
151 Edmonson County	2,104	53.00%	0.29%	12.26%	\$23,452,122	\$11,147	\$17,414,301	\$8,277	\$6,037,821	\$2,870	
152 Elizabethtown Independent	2,714	40.16%	1.11%	8.55%	\$36,295,203	\$13,372	\$22,596,823	\$8,325	\$13,698,379	\$5,047	
155 Elliott County	1,168	70.74%	0.00%	12.50%	\$16,213,908	\$13,886	\$9,447,384	\$8,091	\$6,766,524	\$5,795	
156 Eminence Independent	733	50.76%	1.91%	9.01%	\$9,210,780	\$12,568	\$5,740,561	\$7,833	\$3,470,220	\$4,735	
157 Erlanger-Elsmere Independent	2,434	61.06%	5.34%	12.12%	\$33,216,744	\$13,648	\$21,301,995	\$8,752	\$11,914,749	\$4,895	
161 Estill County	2,665	62.33%	0.04%	10.99%	\$32,491,997	\$12,192	\$21,531,760	\$8,079	\$10,960,237	\$4,113	
162 Fairview Independent	907	62.64%	0.00%	8.93%	\$11,891,099	\$13,113	\$7,227,273	\$7,970	\$4,663,827	\$5,143	
165 Fayette County	41,740	45.22%	8.78%	8.56%	\$510,601,771	\$12,233	\$438,390,471	\$10,503	\$72,211,301	\$1,730	
171 Fleming County	2,479	57.48%	0.28%	10.04%	\$30,873,849	\$12,454	\$22,757,824	\$9,180	\$8,116,025	\$3,274	
175 Floyd County	6,676	66.49%	0.00%	15.89%	\$81,439,304	\$12,199	\$53,866,608	\$8,069	\$27,572,696	\$4,130	
176 Fort Thomas Independent	3,053	15.95%	0.88%	6.45%	\$39,360,338	\$12,894	\$29,429,254	\$9,640	\$9,931,084	\$3,253	
177 Frankfort Independent	850	50.49%	0.24%	13.30%	\$10,817,807	\$12,731	\$8,445,883	\$9,939	\$2,371,924	\$2,791	
181 Franklin County	6,694	46.12%	2.30%	10.52%	\$85,514,188	\$12,775	\$57,944,433	\$8,656	\$27,569,755	\$4,119	
185 Fulton County	567	73.35%	0.00%	15.16%	\$7,383,270	\$13,017	\$5,476,819	\$9,656	\$1,906,451	\$3,361	
186 Fulton Independent	401	75.58%	0.00%	20.20%	\$5,773,319	\$14,400	\$4,097,724	\$10,221	\$1,675,595	\$4,179	
191 Gallatin County	1,772	61.19%	4.74%	11.85%	\$25,463,762	\$14,374	\$17,549,305	\$9,906	\$7,914,457	\$4,467	
195 Garrard County	2,695	56.13%	1.30%	12.91%	\$34,049,021	\$12,633	\$25,140,300	\$9,327	\$8,908,721	\$3,305	
197 Glasgow Independent	2,088	55.18%	3.02%	12.31%	\$36,778,986	\$17,615	\$20,049,099	\$9,603	\$16,729,887	\$8,013	
201 Grant County	4,143	58.51%	1.52%	10.67%	\$58,949,271	\$14,230	\$40,051,026	\$9,668	\$18,898,244	\$4,562	
205 Graves County	4,874	51.62%	1.74%	11.67%	\$58,372,265	\$11,975	\$40,426,613	\$8,294	\$17,945,652	\$3,682	
211 Grayson County	4,563	61.39%	0.55%	10.21%	\$56,634,679	\$12,412	\$37,150,364	\$8,142	\$19,484,315	\$4,270	
215 Green County	1,780	61.75%	0.00%	9.21%	\$23,164,511	\$13,015	\$16,310,354	\$9,164	\$6,854,157	\$3,851	

Appendix B: District Comparisons between EB Model and 2012-13 SEEK Revenues (cont., pg. 3)

District Name	Low		Special Ed %	Evidence Based Model		SEEK District Expenditures		Additional Cost of EB Model		
	Students	Income %		EL %	Total	Total PP	Total	Total PP	Cost	Cost PP
221 Greenup County	3,161	56.85%	0.03%	11.36%	\$40,682,464	\$12,871	\$25,881,780	\$8,188	\$14,800,684	\$4,683
225 Hancock County	1,753	38.74%	0.46%	14.15%	\$21,937,237	\$12,515	\$17,254,609	\$9,843	\$4,682,628	\$2,671
231 Hardin County	15,386	47.13%	2.46%	13.62%	\$216,379,589	\$14,064	\$151,513,996	\$9,848	\$64,865,593	\$4,216
235 Harlan County	4,451	72.54%	0.13%	17.81%	\$59,621,242	\$13,394	\$40,376,908	\$9,071	\$19,244,334	\$4,323
236 Harlan Independent	861	49.38%	0.00%	6.51%	\$10,542,576	\$12,250	\$6,556,319	\$7,618	\$3,986,257	\$4,632
241 Harrison County	3,294	52.22%	0.76%	13.21%	\$39,434,669	\$11,972	\$25,278,924	\$7,674	\$14,155,745	\$4,297
245 Hart County	2,500	61.79%	0.64%	14.24%	\$37,966,912	\$15,185	\$31,189,271	\$12,474	\$6,777,640	\$2,711
246 Hazard Independent	1,018	50.88%	0.00%	11.20%	\$12,463,931	\$12,243	\$8,511,418	\$8,361	\$3,952,513	\$3,883
251 Henderson County	7,703	50.33%	1.40%	13.37%	\$100,292,905	\$13,020	\$72,463,476	\$9,407	\$27,829,429	\$3,613
255 Henry County	2,300	51.09%	0.83%	12.87%	\$31,971,607	\$13,900	\$23,859,778	\$10,373	\$8,111,829	\$3,527
261 Hickman County	802	60.08%	0.25%	14.46%	\$10,691,786	\$13,328	\$8,501,063	\$10,597	\$2,190,723	\$2,731
265 Hopkins County	7,503	49.86%	0.67%	14.90%	\$90,945,735	\$12,122	\$63,981,941	\$8,528	\$26,963,793	\$3,594
271 Jackson County	2,374	69.75%	0.04%	18.74%	\$36,332,091	\$15,303	\$26,350,681	\$11,099	\$9,981,410	\$4,204
272 Jackson Independent	439	54.25%	0.46%	10.49%	\$6,359,114	\$14,496	\$4,402,876	\$10,037	\$1,956,238	\$4,459
275 Jefferson County	103,876	57.11%	6.24%	11.39%	\$1,340,045,750	\$12,900	\$1,148,590,014	\$11,057	\$191,455,736	\$1,843
276 Jenkins Independent	587	67.44%	0.00%	18.90%	\$6,768,070	\$11,526	\$5,090,877	\$8,669	\$1,677,193	\$2,856
281 Jessamine County	8,386	47.81%	2.21%	12.53%	\$111,872,223	\$13,340	\$79,552,215	\$9,486	\$32,320,008	\$3,854
285 Johnson County	4,056	61.90%	0.10%	15.90%	\$48,212,892	\$11,886	\$35,178,540	\$8,673	\$13,034,353	\$3,213
291 Kenton County	15,538	34.97%	2.27%	12.02%	\$215,232,058	\$13,852	\$141,406,147	\$9,101	\$73,825,911	\$4,751
295 Knott County	2,664	70.08%	0.04%	15.73%	\$32,297,476	\$12,123	\$22,589,908	\$8,479	\$9,707,567	\$3,644
301 Knox County	4,851	71.06%	0.56%	13.40%	\$56,787,391	\$11,706	\$40,388,575	\$8,326	\$16,398,816	\$3,381
305 LaRue County	2,589	52.46%	1.66%	14.29%	\$37,350,358	\$14,428	\$27,155,663	\$10,490	\$10,194,694	\$3,938
311 Laurel County	10,009	58.34%	0.30%	14.60%	\$123,230,638	\$12,312	\$83,051,334	\$8,298	\$40,179,303	\$4,014
315 Lawrence County	2,642	62.90%	0.08%	13.70%	\$40,098,237	\$15,175	\$26,220,367	\$9,923	\$13,877,870	\$5,252
321 Lee County	1,186	69.20%	0.17%	12.14%	\$15,054,635	\$12,690	\$10,488,611	\$8,841	\$4,566,024	\$3,849
325 Leslie County	2,018	59.41%	0.15%	16.95%	\$24,760,510	\$12,269	\$17,391,470	\$8,618	\$7,369,040	\$3,652
331 Letcher County	3,538	63.73%	0.11%	19.84%	\$41,373,066	\$11,693	\$29,990,739	\$8,476	\$11,382,326	\$3,217
335 Lewis County	2,546	67.82%	0.00%	10.33%	\$31,112,343	\$12,219	\$20,237,477	\$7,948	\$10,874,865	\$4,271
341 Lincoln County	4,291	61.52%	0.82%	13.98%	\$56,616,426	\$13,194	\$42,586,290	\$9,925	\$14,030,136	\$3,270
345 Livingston County	1,310	54.37%	1.15%	12.98%	\$16,484,021	\$12,587	\$12,916,053	\$9,863	\$3,567,968	\$2,725
351 Logan County	3,737	49.13%	0.24%	10.41%	\$47,026,279	\$12,583	\$33,714,601	\$9,021	\$13,311,678	\$3,562

Appendix B: District Comparisons between EB Model and 2012-13 SEEK Revenues (cont., pg. 4)

District Name	Students	Low			Special	Evidence Based Model		SEEK District Expenditures		Additional Cost of EB Model	
		Income %	EL %	Ed %	Total	Total PP	Total	Total PP	Cost	Cost PP	
354 Ludlow Independent	904	60.07%	1.00%	15.60%	\$11,872,768	\$13,134	\$7,793,183	\$8,621	\$4,079,585	\$4,513	
361 Lyon County	963	49.74%	0.52%	8.00%	\$11,452,452	\$11,893	\$8,540,841	\$8,870	\$2,911,611	\$3,024	
365 Madison County	12,188	44.89%	1.67%	11.99%	\$142,091,888	\$11,658	\$105,768,326	\$8,678	\$36,323,562	\$2,980	
371 Magoffin County	2,394	73.82%	0.38%	18.34%	\$30,048,104	\$12,554	\$19,845,951	\$8,291	\$10,202,152	\$4,262	
375 Marion County	3,438	55.79%	0.76%	12.77%	\$47,368,476	\$13,778	\$33,801,763	\$9,832	\$13,566,713	\$3,946	
381 Marshall County	5,056	42.88%	0.30%	9.69%	\$57,617,163	\$11,396	\$44,133,498	\$8,729	\$13,483,666	\$2,667	
385 Martin County	2,272	63.52%	0.00%	16.99%	\$27,762,752	\$12,221	\$18,968,969	\$8,350	\$8,793,783	\$3,871	
391 Mason County	3,049	54.98%	1.02%	11.42%	\$35,793,673	\$11,741	\$24,919,457	\$8,174	\$10,874,216	\$3,567	
392 Mayfield Independent	1,706	70.59%	13.60%	14.31%	\$21,904,876	\$12,843	\$16,269,423	\$9,539	\$5,635,453	\$3,304	
395 McCracken County	7,444	44.20%	0.21%	9.31%	\$86,284,112	\$11,591	\$68,846,466	\$9,249	\$17,437,646	\$2,343	
401 McCreary County	3,218	70.17%	0.00%	16.47%	\$37,833,810	\$11,757	\$26,649,018	\$8,282	\$11,184,792	\$3,476	
405 McLean County	1,727	50.09%	0.52%	13.78%	\$20,217,014	\$11,708	\$14,286,873	\$8,274	\$5,930,141	\$3,434	
411 Meade County	5,354	47.05%	0.28%	10.63%	\$75,237,124	\$14,053	\$46,982,537	\$8,776	\$28,254,588	\$5,278	
415 Menifee County	1,164	63.90%	0.00%	11.94%	\$14,542,911	\$12,491	\$10,295,080	\$8,842	\$4,247,831	\$3,648	
421 Mercer County	3,206	45.63%	1.37%	13.35%	\$43,584,244	\$13,595	\$32,956,737	\$10,280	\$10,627,506	\$3,315	
425 Metcalfe County	1,673	67.37%	0.54%	12.31%	\$21,159,085	\$12,648	\$15,827,514	\$9,461	\$5,331,571	\$3,187	
426 Middlesboro Independent	1,475	66.17%	0.54%	12.88%	\$17,026,741	\$11,543	\$12,328,217	\$8,358	\$4,698,524	\$3,185	
431 Monroe County	1,991	61.67%	2.16%	11.35%	\$23,893,069	\$11,999	\$18,398,112	\$9,240	\$5,494,956	\$2,760	
435 Montgomery County	5,445	51.26%	1.86%	10.29%	\$65,020,025	\$11,942	\$44,259,615	\$8,129	\$20,760,410	\$3,813	
436 Monticello Independent	877	63.54%	9.92%	10.61%	\$11,964,264	\$13,649	\$8,801,559	\$10,041	\$3,162,705	\$3,608	
441 Morgan County	1,913	80.93%	0.05%	14.22%	\$28,184,383	\$14,736	\$18,238,940	\$9,536	\$9,945,443	\$5,200	
445 Muhlenberg County	5,510	51.49%	0.33%	11.60%	\$70,904,917	\$12,868	\$54,179,267	\$9,833	\$16,725,650	\$3,035	
446 Murray Independent	1,601	36.80%	3.19%	10.56%	\$18,954,309	\$11,842	\$14,401,615	\$8,997	\$4,552,694	\$2,844	
451 Nelson County	5,313	43.42%	0.66%	10.52%	\$71,821,788	\$13,517	\$46,071,542	\$8,671	\$25,750,245	\$4,846	
452 Newport Independent	1,912	79.75%	3.24%	10.98%	\$27,631,730	\$14,449	\$20,160,539	\$10,542	\$7,471,192	\$3,907	
455 Nicholas County	1,161	58.22%	0.09%	9.82%	\$15,440,450	\$13,298	\$10,214,230	\$8,797	\$5,226,221	\$4,501	
461 Ohio County	4,434	57.48%	2.35%	8.95%	\$56,156,822	\$12,664	\$37,986,131	\$8,566	\$18,170,691	\$4,098	
465 Oldham County	12,776	18.07%	2.04%	12.14%	\$207,584,159	\$16,248	\$167,769,595	\$13,131	\$39,814,564	\$3,116	
471 Owen County	2,021	50.16%	1.73%	10.93%	\$27,951,115	\$13,827	\$18,001,932	\$8,906	\$9,949,183	\$4,922	
472 Owensboro Independent	4,675	69.82%	2.80%	13.31%	\$57,662,753	\$12,335	\$48,254,833	\$10,322	\$9,407,920	\$2,012	
475 Owsley County	780	87.07%	0.00%	13.08%	\$9,892,731	\$12,686	\$7,744,584	\$9,931	\$2,148,147	\$2,755	
476 Paducah Independent	3,030	65.80%	2.41%	12.51%	\$37,751,149	\$12,458	\$31,573,020	\$10,419	\$6,178,129	\$2,039	
477 Paintsville Independent	868	38.69%	0.35%	10.25%	\$16,534,045	\$19,038	\$14,999,450	\$17,271	\$1,534,595	\$1,767	

Appendix B: District Comparisons between EB Model and 2012-13 SEEK Revenues (cont., pg. 5)

District Name	Low		Special Ed %	Evidence Based Model		SEEK District Expenditures		Additional Cost of EB Model		
	Students	Income %		EL %	Total	Total PP	Total	Total PP	Cost	Cost PP
478 Paris Independent	796	67.70%	4.65%	11.81%	\$10,492,189	\$13,179	\$6,935,183	\$8,711	\$3,557,007	\$4,468
481 Pendleton County	2,677	54.13%	0.30%	11.17%	\$41,359,634	\$15,451	\$26,667,493	\$9,962	\$14,692,141	\$5,489
485 Perry County	4,501	66.34%	0.11%	16.09%	\$54,202,345	\$12,042	\$39,325,572	\$8,737	\$14,876,773	\$3,305
491 Pike County	10,225	60.33%	0.18%	12.50%	\$127,818,441	\$12,501	\$90,504,213	\$8,852	\$37,314,228	\$3,649
492 Pikeville Independent	1,292	32.67%	0.62%	10.30%	\$13,819,461	\$10,699	\$12,263,787	\$9,494	\$1,555,674	\$1,204
493 Pineville Independent	573	63.74%	0.00%	14.15%	\$7,031,039	\$12,279	\$5,326,471	\$9,302	\$1,704,568	\$2,977
495 Powell County	2,621	68.75%	0.08%	14.50%	\$29,978,446	\$11,438	\$20,540,417	\$7,837	\$9,438,029	\$3,601
501 Pulaski County	8,587	61.37%	1.21%	12.05%	\$102,289,436	\$11,911	\$71,867,161	\$8,369	\$30,422,275	\$3,543
502 Raceland Independent	1,101	37.23%	0.00%	6.63%	\$13,397,227	\$12,165	\$8,718,357	\$7,916	\$4,678,869	\$4,248
505 Robertson County	371	65.82%	1.35%	12.68%	\$6,940,615	\$18,721	\$4,218,268	\$11,378	\$2,722,348	\$7,343
511 Rockcastle County	3,104	62.18%	0.10%	17.08%	\$37,548,637	\$12,098	\$26,161,273	\$8,429	\$11,387,364	\$3,669
515 Rowan County	3,415	54.32%	0.76%	11.80%	\$42,329,539	\$12,394	\$30,202,803	\$8,844	\$12,126,736	\$3,551
521 Russell County	3,174	65.21%	2.30%	10.99%	\$44,203,431	\$13,925	\$33,530,865	\$10,563	\$10,672,566	\$3,362
522 Russell Independent	2,377	35.34%	0.38%	11.70%	\$28,379,129	\$11,940	\$19,500,601	\$8,204	\$8,878,528	\$3,735
523 Russellville Independent	1,181	60.90%	4.66%	10.50%	\$14,900,762	\$12,620	\$11,048,525	\$9,358	\$3,852,237	\$3,263
524 Science Hill Independent	564	44.00%	0.00%	7.63%	\$6,627,727	\$11,760	\$4,462,328	\$7,918	\$2,165,399	\$3,842
525 Scott County	9,202	37.30%	3.43%	11.18%	\$147,927,989	\$16,076	\$110,493,458	\$12,008	\$37,434,531	\$4,068
531 Shelby County	7,317	45.86%	8.38%	14.60%	\$96,314,117	\$13,163	\$71,595,890	\$9,785	\$24,718,227	\$3,378
533 Silver Grove Independent	231	68.54%	0.87%	24.29%	\$4,138,882	\$17,953	\$2,622,251	\$11,374	\$1,516,630	\$6,579
535 Simpson County	3,146	53.97%	1.37%	11.95%	\$46,251,248	\$14,701	\$34,406,177	\$10,936	\$11,845,071	\$3,765
536 Somerset Independent	1,700	55.58%	2.76%	11.29%	\$18,631,922	\$10,959	\$14,333,461	\$8,431	\$4,298,461	\$2,528
537 Southgate Independent	229	54.24%	2.19%	22.75%	\$3,609,403	\$15,789	\$2,223,810	\$9,728	\$1,385,593	\$6,061
541 Spencer County	3,027	40.44%	0.66%	12.39%	\$40,333,972	\$13,326	\$26,559,787	\$8,775	\$13,774,185	\$4,551
545 Taylor County	2,824	54.64%	0.92%	9.38%	\$30,767,022	\$10,895	\$21,857,717	\$7,740	\$8,909,305	\$3,155
551 Todd County	2,225	55.23%	2.88%	11.50%	\$30,870,390	\$13,873	\$23,351,556	\$10,494	\$7,518,834	\$3,379
555 Trigg County	2,250	54.54%	0.40%	10.58%	\$30,923,397	\$13,745	\$23,067,853	\$10,254	\$7,855,544	\$3,492
561 Trimble County	1,533	47.29%	0.39%	8.74%	\$21,164,013	\$13,804	\$13,311,782	\$8,683	\$7,852,230	\$5,122
565 Union County	2,496	49.12%	0.12%	12.78%	\$32,143,279	\$12,880	\$25,255,726	\$10,120	\$6,887,553	\$2,760
567 Walton Verona Independent	1,674	34.83%	0.60%	7.95%	\$22,745,595	\$13,589	\$16,612,076	\$9,924	\$6,133,518	\$3,664
571 Warren County	15,468	47.28%	8.63%	10.66%	\$195,376,245	\$12,631	\$133,151,433	\$8,608	\$62,224,812	\$4,023
575 Washington County	1,768	58.44%	2.83%	14.43%	\$23,541,333	\$13,317	\$17,677,600	\$10,000	\$5,863,733	\$3,317
581 Wayne County	2,691	64.54%	0.37%	13.49%	\$33,385,723	\$12,406	\$22,307,991	\$8,289	\$11,077,732	\$4,116
585 Webster County	2,358	55.18%	5.17%	12.64%	\$32,979,868	\$13,988	\$21,107,985	\$8,953	\$11,871,882	\$5,035

Appendix B: District Comparisons between EB Model and 2012-13 SEEK Revenues (cont., pg. 6)

District Name	Students	Low			Special	Evidence Based Model		SEEK District Expenditures		Additional Cost of EB Model	
		Income %	EL %	Ed %	Total	Total PP	Total	Total PP	Cost	Cost PP	
586 West Point Independent	137	87.04%	0.00%	15.36%	\$2,302,937	\$16,844	\$1,330,026	\$9,728	\$972,911	\$7,116	
591 Whitley County	4,736	71.41%	0.13%	15.52%	\$60,670,702	\$12,810	\$41,561,885	\$8,776	\$19,108,817	\$4,035	
592 Williamsburg Independent	869	64.70%	0.35%	12.09%	\$10,358,683	\$11,926	\$7,151,410	\$8,233	\$3,207,273	\$3,692	
593 Williamstown Independent	1,031	41.24%	0.10%	9.51%	\$14,356,640	\$13,930	\$9,305,936	\$9,029	\$5,050,704	\$4,900	
595 Wolfe County	1,422	72.35%	0.00%	19.27%	\$17,379,933	\$12,220	\$11,945,175	\$8,399	\$5,434,758	\$3,821	
601 Woodford County	4,227	37.00%	6.41%	10.38%	\$58,295,131	\$13,790	\$43,214,326	\$10,222	\$15,080,805	\$3,567	

APPENDIX C: TECHNICAL ASPECTS AND FUNCTIONALITY OF EB EXCEL-BASED MODEL

A great deal of functionality exists to alter model parameters and to view data. These functions are discussed below, after the technological specifications are discussed.

TECHNOLOGICAL SPECIFICATIONS

The Evidence-Based Model is built on a PC platform using Excel Professional 2010. Users may experience errors if they attempt to use certain functions of the model on a Mac platform or a different (primarily earlier) version of Excel. Most of the worksheets of KY EB Model.xls are locked so as not to interfere with the Excel programming and data consistency.

To update the model when changing simulation parameters, certain steps must be taken to install the statistical software necessary to run Macros, the programming language of Excel. Simulations will work only if these tasks are performed before simulation attempts:

- 1) Microsoft ToolPak must be enabled
- 2) Microsoft ToolPak-VBA must be enabled
- 3) “Macros” must be enabled
- 4) All files must be “save target as” or similar to your desktop or another drive—no file will work if opened within an internet browser

If you receive error messages when using the ctrl-r (refresh) or other similar functions described below, ensure the previous 4 steps have been taken, then delete any previous versions of your file, and download again the Excel document.

FUNCTIONALITY TO ALTER MODEL PARAMETERS

Most of the components of the Evidence-Based model may be altered by use of the “Inputs” worksheet in the model. These changes range from class sizes to teacher salary levels—most of the policy levers of interest in and surrounding the EB prototypes. When a change is made on the Inputs worksheet, it will permeate the entire model, making changes at the school, district, and state levels.

After a change is made on the Inputs worksheet, the user must press ctrl-r, which will refresh the data and the output worksheets. These updates are made behind the model through Macro. As output worksheets contain many tables to update, this process may take a couple of minutes, depending on the speed of the computer in use.

FUNCTIONALITY TO VIEW DATA

Whether changing a parameter to determine its affect at the school, district, or state level or to simply view data at these levels, three interactive worksheets allow the user in-depth personnel and cost data at these levels. State Summary Table, District Summary Tables, and School Summary Tables allow access to all output, which is based on the parameters of the Inputs worksheet, which default to the parameters decided upon by the Advisory Committee of this project.

Again, these parameters may be changed. After the user presses ctrl-r, these tables will update with new personnel and cost data.

REFERENCES

Taylor, Lori L. (2011). *A Comparative Wage Index*. Retrieved on 6/24/2014 at http://bush.tamu.edu/research/faculty/taylor_CWI/.

Taylor, Lori L., & Fowler, William J. (2006). *A comparative wage approach to geographic cost adjustment*. Washington, DC: National Center for Education Statistics.