



Tennessee's Outcomes-Based Funding Formula



Presentation Overview



- Tennessee overview
- What is the significance of the outcomes-based approach in higher education finance policy?
- Where did the outcomes-based model idea originate?
- How was this accomplished? What was the process?



Presentation Overview

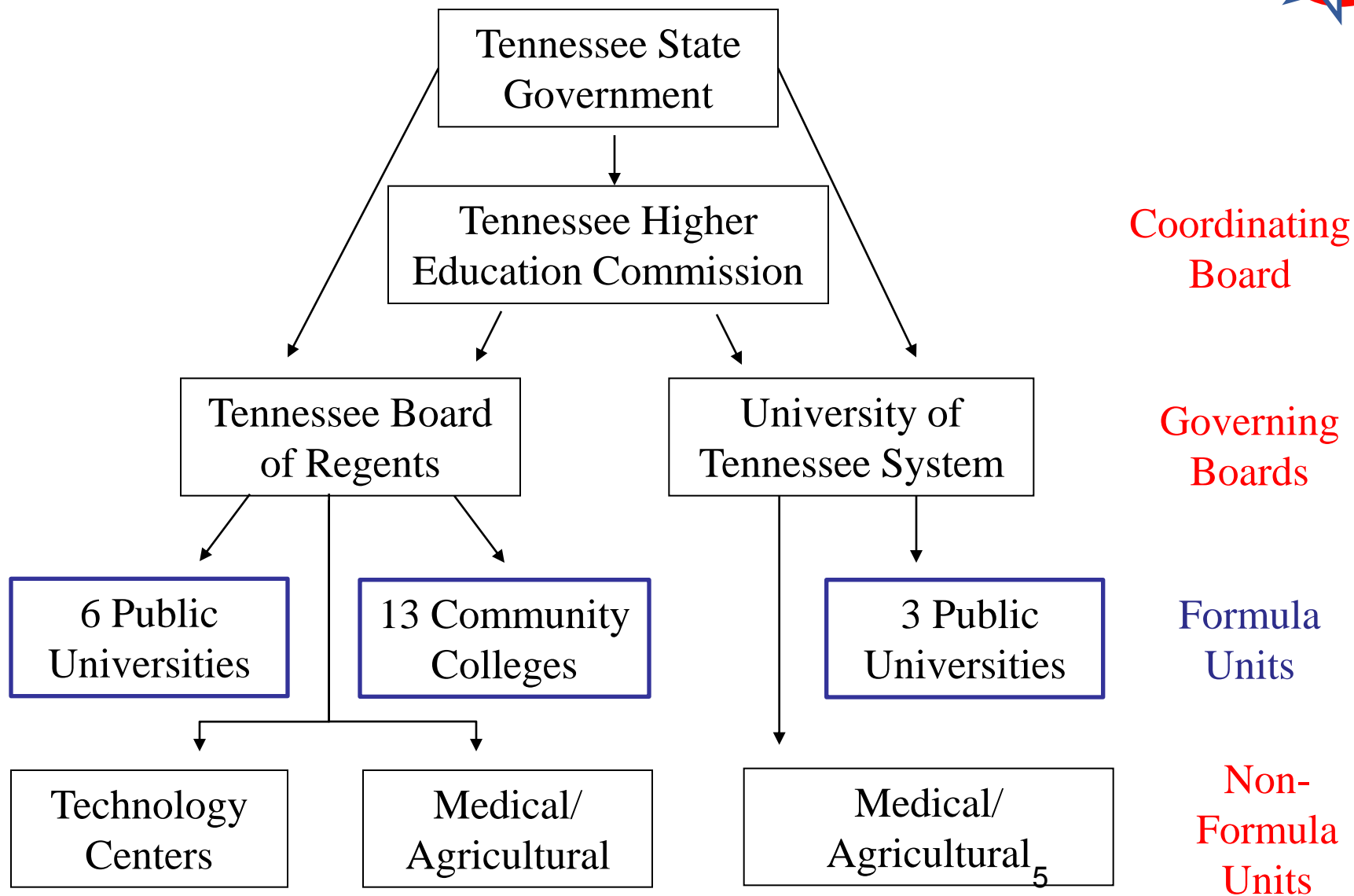


- How does the model work?
- How was it implemented?
- What are its strengths and weaknesses?
- Is it working as intended?



Tennessee Overview

Shared Governance



Enrollment and Funding



Tennessee Enrollment (Fall 2011)

	Headcount	Full-time Equivalent
TBR Universities	96,669	78,453
UT Universities	46,611	40,330
Community Colleges	96,777	61,343
Technology Centers	31,198	12,209

Higher Education Recurring State Funding (in millions)

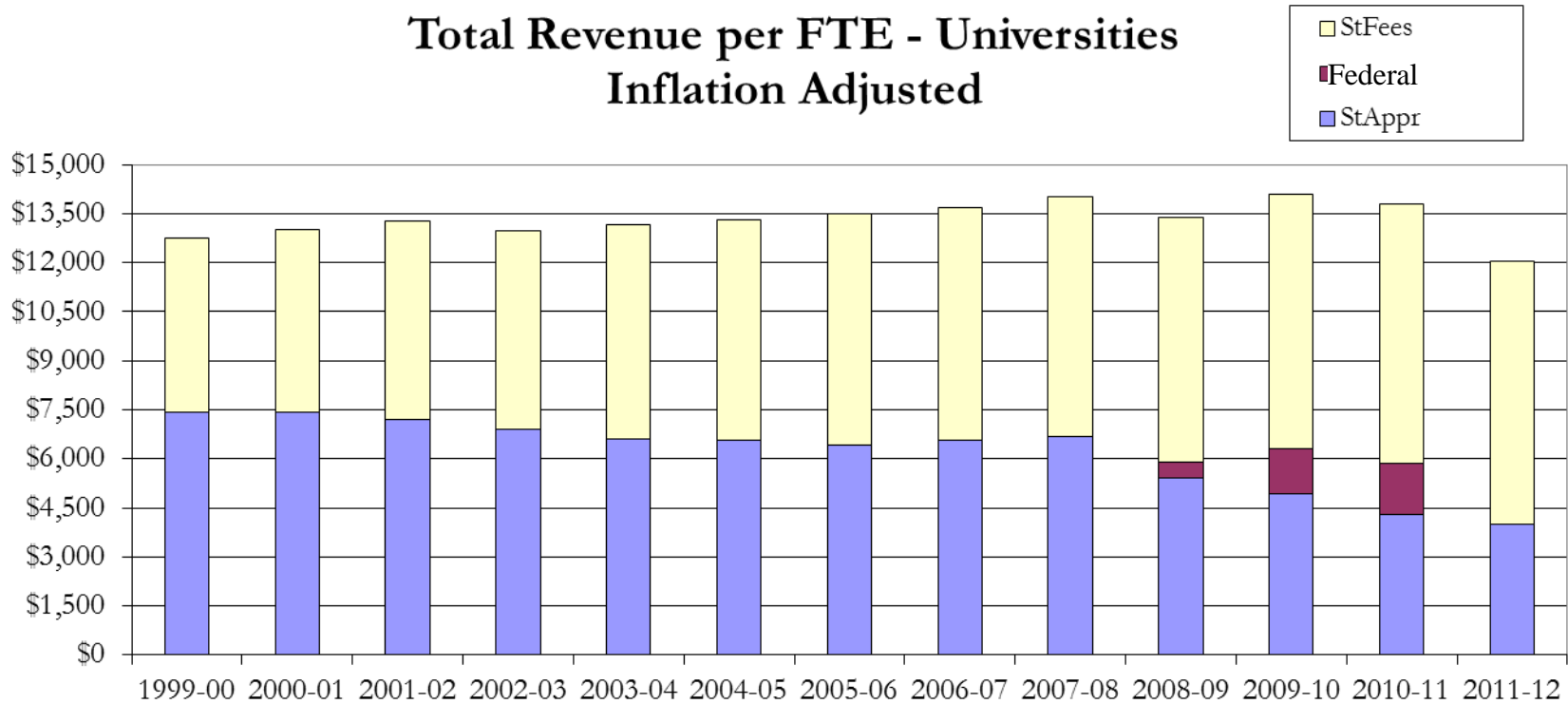
	2008-09	2009-10	2010-11	2011-12	2012-13
TBR Universities	\$379	\$318	\$299	\$293	\$307
UT Universities	\$251	\$214	\$201	\$202	\$213
Community Colleges	\$218	\$196	\$185	\$185	\$194
Total Higher Education	\$1,256	\$1,119	\$1,066	\$1,070	\$1,127



Tennessee Higher Education Revenues



**Total Revenue per FTE - Universities
Inflation Adjusted**



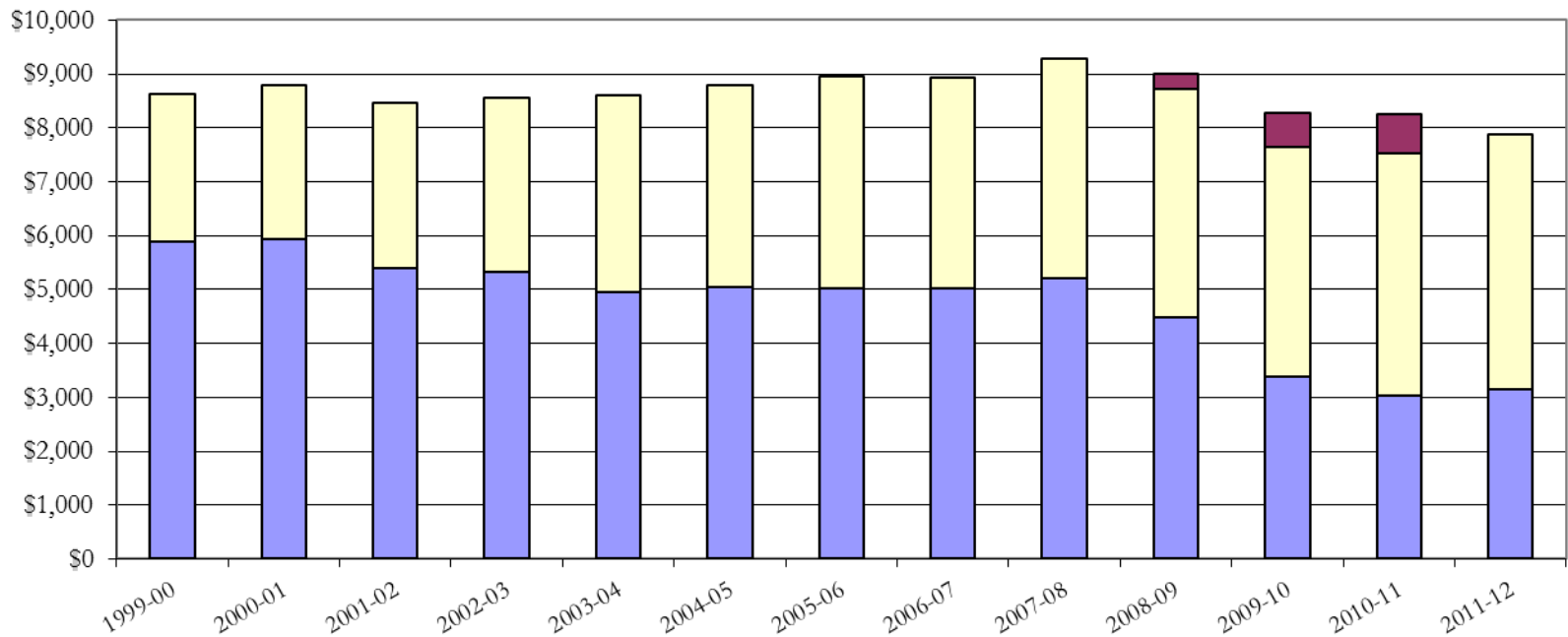
Source: Tennessee Higher Education Commission Budget Data



Tennessee Higher Education Revenues



**Total Revenue per FTE
Community Colleges**
Inflation Adjusted (2011 Dollars)



Source: Tennessee Higher Education Commission Budget Data



Performance Funding



- Assessment incentive for public institutions
- In place for over 30 years
- Institutions can increase their appropriations request by as much as 5.45%
- Measures include:
 - program review and accreditation results,
 - general education and major field tests,
 - licensure rates,
 - job placement rates





What is the significance of the outcomes-based approach in higher education finance policy?



Funding Formula Policy



- Previously, TN used an enrollment based model, much like other states.
- In the 1970s, TN incorporated performance funding in the model, but it was still heavily weighted towards enrollment.
- These models provided incentive for enrollment growth rather than for excellence or productivity.



Funding Formula Policy



- Other states have made significant progress in incorporating outcomes into their formula models.
- However, TN is the only state to jettison its enrollment based model in favor of an outcomes model.
- The TN design, utilizing outcomes and an institution-specific weighting structure, is unique in higher education finance policy.



Funding Formula Policy



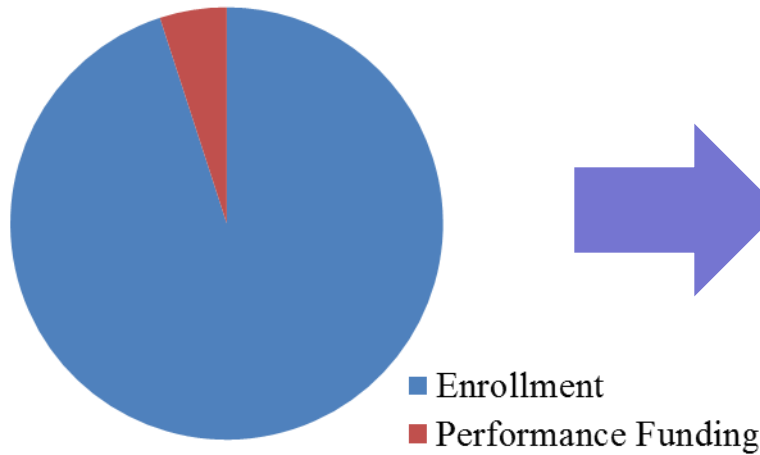
- This is not a reform to the long-standing Performance Funding program.
- The outcomes-based model *completely replaces* the enrollment-based model.
- There is no enrollment-based allocation in TN.
- This methodology is not for the allocation of any *new* state funding, but for *all* state funding.



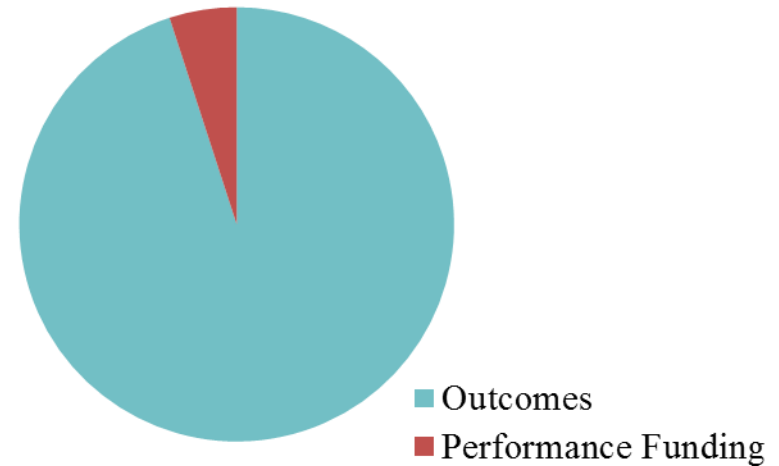
Tennessee Overview



2010-11



2011-12





Where did the outcomes-based
model idea originate?



Tennessee Finance Policy Reform



- For several years, THEC staff had been contemplating funding formula redesigns that would incorporate two key aspects: inclusion of productivity metrics and recognition of institutional mission.
- In late 2009 THEC proposed to then Governor Phil Bredesen a new incentive structure – an outcomes-based model that would replace the enrollment based model.



Tennessee Finance Policy Reform



- Gov. Bredesen included THEC's idea of an outcomes-based model in a proposal for higher education reforms that he made to the Legislature.
- The Tennessee legislature debated these reforms, which included other policy issues, in January 2010.



Tennessee Finance Policy Reform



- In January 2010, Tennessee passed the “Complete College Tennessee Act.”
- The legislation called for reforms in several areas:
 - student transfer
 - research collaboration
 - funding formula policy



Complete College Tennessee Act



- *“Develop, after consultation with the Board of Regents and the University of Tennessee Board of Trustees, policies and formulae or guidelines for fair and equitable distribution and use of public funds ... that are consistent with and further the goals of the statewide master plan. The policies and formulae or guidelines shall result in an outcomes-based model.”*





How was this accomplished?
What was the process?



Developing a New Formula Model



- THEC convened a Formula Review Committee to discuss and debate the new formula design.
- The Committee included representatives from higher education and state government.
- Meetings each month in spring and summer 2010.
- Throughout the process, THEC consulted outside experts.



Formula Review Committee (FRC)



- Broad membership
- Multiple formal FRC meetings
- Explicit institutional feedback and input
- Regional town halls
- Staff background briefings with UT, TBR, Constitutional officers and legislative members
- External consultant input



Tennessee Finance Policy Reform



- Institutions played a key role in the process.
- Selected campus presidents, CFOs and provosts were members of the Formula Review Committee.
- Presidents/chancellors were queried for their suggestions on what outcomes to include and the priority of the outcome.



Developing a New Formula Model



- Each committee meeting dealt with a different issue of formula design.
- The committee included people with vastly different views on higher education.
- Broad consensus on the philosophy and principles of new outcomes-based formula model.
- Most government and higher education officials agreed that funding on outcomes was better than enrollment.



Developing a New Formula Model



- Institutional mission is a critical component of the CCTA and the outcomes-based formula.
- Some institutions do not focus on research and doctoral degrees, while others do.
- Some institutions focus on student access and are less selective in admissions.
- A major feature of the outcomes model design solved this issue for the committee.

Developing a New Formula Model



- THEC recommended that the outcomes-based model “weight” outcomes differently by institution.
- For instance, as research has a larger role in institutional mission, it gets weighted more heavily in the model.
- This weighting feature allowed the model to be designed specifically to an institution’s mission.



Developing a New Formula Model



- THEC staff back-tested model designs by simulating the formula calculations for three prior years.
- This provided comfort that the new design was stable and that the new model's behavior was properly understood.
- Once the outcomes model was finalized, THEC staff developed a projection tool, a Dynamic Formula Model, that allowed the user to simulate the effect of future changes in productivity.





How does the model work?

Developing a New Formula Model



- The exclusive use of outcomes, rather than beginning or end of term enrollment, and the inclusion of a unique weight for each outcome for each campus, are the two primary innovations introduced by Tennessee into higher education finance policy.
- Enrollment, beginning or end of term, simply no longer factors into TN higher education state funding.



TN Outcomes-Based Formula



University of Tennessee Knoxville

Outcome
Student Progression: 24 Credit Hours
Student Progression: 48 Credit Hours
Student Progression: 72 Credit Hours
Bachelors Degrees
Masters Degrees
Doctoral/Law Degrees
Research/Grant Funding
Student Transfers
Degrees per 100 FTE
Graduation Rate

Step 1: Identify university
outcomes for the formula model.



TN Outcomes-Based Formula



University of Tennessee Knoxville

Outcome	Data
Student Progression: 24 Credit Hours	4,179
Student Progression: 48 Credit Hours	4,687
Student Progression: 72 Credit Hours	4,759
Bachelors Degrees	3,946
Masters Degrees	1,573
Doctoral/Law Degrees	477
Research/Grant Funding	\$128.1M
Student Transfers	822
Degrees per 100 FTE	20
Graduation Rate	66%

Step 2: Collect actual data from an entire academic year on the various outcomes. For example, UTK produced 3,946 bachelors degrees.

TN Outcomes-Based Formula



University of Tennessee Knoxville

Outcome	Data
Student Progression: 24 Credit Hours	4,619
Student Progression: 48 Credit Hours	5,200
Student Progression: 72 Credit Hours	5,385
Bachelors Degrees	4,593
Masters Degrees	1,573
Doctoral/Law Degrees	477
Research/Grant Funding	\$128.1M
Student Transfers	822
Degrees per 100 FTE	20
Graduation Rate	66%

If 100 adult students get a bachelors degree, the model acts as if 140 degrees were produced.

Step 3: Award a 40% premium for the production of certain outcomes by a low-income or adult student.



TN Outcomes-Based Formula



University of Tennessee Knoxville

Outcome	Data		Scale Factor		Scaled Data
Student Progression: 24 Credit Hours	4,619	/	1	=	4,619
Student Progression: 48 Credit Hours	5,200	/	1	=	5,200
Student Progression: 72 Credit Hours	5,385	/	1	=	5,385
Bachelors Degrees	4,593	/	1	=	4,593
Masters Degrees	1,573	/	0.30	=	5,244
Doctoral/Law Degrees	477	/	0.05	=	9,540
Research/Grant Funding	\$128.1M	/	20,000	=	6,404
Student Transfers	822	/	1	=	822
Degrees per 100 FTE	20	/	0.02	=	989
Graduation Rate	66%	/	0.04	=	1,641

Step 4: Rescale the data, if necessary, so it is somewhat comparable across variables. Sometimes data is scaled up, sometimes down.

TN Outcomes-Based Formula



University of Tennessee Knoxville

Outcome	Data	Scaled Data
Student Progression: 24 Credit Hours	4,619	4,619
Student Progression: 48 Credit Hours	5,200	5,200
Student Progression: 72 Credit Hours	5,385	5,385
Bachelors Degrees	4,593	4,593
Masters Degrees	1,573	5,244
Doctoral/Law Degrees	477	9,540
Research/Grant Funding	\$128.1M	6,404
Student Transfers	822	822
Degrees per 100 FTE	20	989
Graduation Rate	66%	1,641

Step 4: Rescale the data, if necessary, so it is somewhat comparable across variables. Sometimes data is scaled up, sometimes down.

TN Outcomes-Based Formula



University of Tennessee Knoxville

Outcome	Data	Scaled Data	Weight
Student Progression: 24 Credit Hours	4,619	4,619	2%
Student Progression: 48 Credit Hours	5,200	5,200	3%
Student Progression: 72 Credit Hours	5,385	5,385	5%
Bachelors Degrees	4,593	4,593	15%
Masters Degrees	1,573	5,244	15%
Doctoral/Law Degrees	477	9,540	10%
Research/Grant Funding	\$128.1M	6,404	15%
Student Transfers	822	822	5%
Degrees per 100 FTE	20	989	10%
Graduation Rate	66%	1,641	20%

Step 5: Apply a weight to each outcome that reflects the priority of the outcome and the mission of the institution.

TN Outcomes-Based Formula

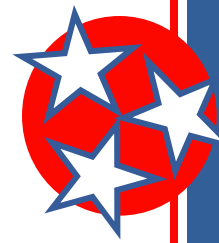


University of Tennessee Knoxville

Outcome	Data	Scaled Data		Weight		Weighted Outcome
Student Progression: 24 Credit Hours	4,619	4,619	x	2%	=	92
Student Progression: 48 Credit Hours	5,200	5,200	x	3%	=	156
Student Progression: 72 Credit Hours	5,385	5,385	x	5%	=	269
Bachelors Degrees	4,593	4,593	x	15%	=	689
Masters Degrees	1,573	5,244	x	15%	=	787
Doctoral/Law Degrees	477	9,540	x	10%	=	954
Research/Grant Funding	\$128.1M	6,404	x	15%	=	961
Student Transfers	822	822	x	5%	=	41
Degrees per 100 FTE	20	989	x	10%	=	99
Graduation Rate	66%	1,641	x	20%	=	328
				Total		4,376

Step 6: Multiply and sum the Scaled Data times the Weight to produce the “Weighted Outcomes.”

TN Outcomes-Based Formula



University of Tennessee Knoxville

Outcome	Data	Scaled Data		Weight		Weighted Outcome
Student Progression: 24 Credit Hours	4,619	4,619	x	2%	=	92
Student Progression: 48 Credit Hours	5,200	5,200	x	3%	=	156
Student Progression: 72 Credit Hours	5,385	5,385	x	5%	=	269
Bachelors Degrees	4,593	4,593	x	15%	=	689
Masters Degrees	1,573	5,244	x	15%	=	787
Doctoral/Law Degrees	477	9,540	x	10%	=	954
Research/Grant Funding	\$128.1M	6,404	x	15%	=	961
Student Transfers	822	822	x	5%	=	41
Degrees per 100 FTE	20	989	x	10%	=	99
Graduation Rate	66%	1,641	x	20%	=	328
				Total		4,376

All steps are identical at each university. The only difference is the weight factor applied to each university.



Developing a New Formula Model



- The weighted outcomes are then monetized with an average SREB faculty salary multiplier.
- Final adjustments are made for selected fixed cost elements, such as infrastructure size and major equipment inventory.
- Finally, the Performance Funding or Quality Assurance program is added, which includes elements such as program accreditation, student satisfaction, licensure exam pass rates, etc.



TN Outcomes-Based Formula



Outcomes Model Summary - UTK

Outcome	Data	Scaled Data	Weight	Weighted Outcome
Students Accumulating 24 hrs (Scale=1)	4,619	4,619	2%	92
Students Accumulating 48 hrs (Scale=1)	5,200	5,200	3%	156
Students Accumulating 72 hrs (Scale=1)	5,385	5,385	5%	269
Bachelors and Associates (Scale=1)	4,593	4,593	15%	689
Masters/Ed Specialist Degrees (Scale=0.3)	1,573	5,244	15%	787
Doctoral / Law Degrees (Scale=.05)	477	9,540	10%	954
Research and Service (Scale=20,000)	\$128.1M	6,404	15%	961
Transfers Out with 12 hrs (Scale=1)	822	822	5%	41
Degrees per 100 FTE (Scale=.02)	20	989	10%	99
Six-Year Graduation Rate (Scale=.04)	66%	1,641	20%	328
			Total	4,376

Total Weighted Outcomes		Avg SREB Salary		Subtotal	
4,376	x	89,473	=	391,531,000	

*For Illustration
Purposes Only*

M&O, Utilities	+	74,993,000
Equipment	+	19,177,000
Performance Funding	+	22,897,000

Grand Total Calculation	508,598,000
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TN Outcomes-Based Formula



Weights Based on Institutional Mission	UTM	APSU	TTU	UTC	MTSU	ETSU	TSU	UM	UTK
Student Progression: 24 Credit Hours	3%	3%	3%	3%	3%	3%	3%	2%	2%
Student Progression: 48 Credit Hours	5%	5%	5%	5%	5%	5%	5%	3%	3%
Student Progression: 72 Credit Hours	7%	7%	7%	7%	7%	7%	7%	5%	5%
Bachelors Degrees	30%	25%	25%	25%	25%	25%	25%	25%	15%
Masters Degrees	15%	20%	15%	15%	15%	15%	15%	15%	15%
Doctoral/Law Degrees	0%	0%	5%	5%	7.5%	7.5%	7.5%	10%	10%
Research/Grant Funding	10%	10%	10%	10%	12.5%	12.5%	12.5%	12.5%	15%
Student Transfers	10%	10%	10%	10%	5%	5%	5%	5%	5%
Degrees per 100 FTE	15%	10%	10%	10%	10%	10%	10%	7.5%	10%
Graduation Rate	5%	10%	10%	10%	10%	10%	10%	15.0%	20%
	100%	100%	100%	100%	100%	100%	100%	100%	100%

↓
Bachelors degrees; little
research/doctoral degrees

↓
Extensive doctoral degrees
and emphasis on research



TN Outcomes-Based Formula



Weights Based on Institutional Mission	UTM	APSU	TTU	UTC	MTSU	ETSU	TSU	UM	UTK
Student Progression: 24 Credit Hours	3%	3%	3%	3%	3%	3%	3%	2%	2%
Student Progression: 48 Credit Hours	5%	5%	5%	5%	5%	5%	5%	3%	3%
Student Progression: 72 Credit Hours	7%	7%	7%	7%	7%	7%	7%	5%	5%
Bachelors Degrees	30%	25%	25%	25%	25%	25%	25%	25%	15%
Masters Degrees	15%	20%	15%	15%	15%	15%	15%	15%	15%
Doctoral/Law Degrees	0%	0%	5%	5%	7.5%	7.5%	7.5%	10%	10%
Research/Grant Funding	10%	10%	10%	10%	12.5%	12.5%	12.5%	12.5%	15%
Student Transfers	10%	10%	10%	10%	5%	5%	5%	5%	5%
Degrees per 100 FTE	15%	10%	10%	10%	10%	10%	10%	7.5%	10%
Graduation Rate	5%	10%	10%	10%	10%	10%	10%	15.0%	20%
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Bachelors degrees; little
research/doctoral degrees

Extensive doctoral degrees
and emphasis on research



TN Outcomes-Based Formula



Outcomes Model Summary - Nashville State

Outcome	Data	Scaled Data	Weight	Weighted Outcome
Students Accumulating 12 hrs (Scale=2)	4,632	2,316	4%	93
Students Accumulating 24 hrs (Scale=2)	3,231	1,616	5%	81
Students Accumulating 36 hrs (Scale=2)	2,549	1,275	6%	76
Dual Enrollment (Scale=2)	679	340	5%	17
Associates (Scale=1.5)	745	496	20%	99
Certificates (Scale=1.5)	194	129	20%	26
Job Placements (Scale=.5)	279	559	10%	56
Remedial & Developmental Success (Scale=5)	2,076	415	10%	42
Transfers Out with 12 hrs (Scale=2)	606	303	10%	30
Workforce Training (Contact Hours)(Scale=50)	104,684	2,094	5%	105
Awards per 100 FTE (Scale=.05)	14.25	285	5%	14
			Total	639

Total Weighted Outcomes		Avg SREB Salary		Subtotal
639	x	53,129	=	33,932,710

*For Illustration
Purposes Only*

M&O, Utilities	+	4,127,154
Equipment	+	400,565
Performance Funding	+	1,886,484

Grand Total Calculation	40,346,913
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TN Outcomes-Based Formula



Priority Rank	Weight
1	20%
2	20%
3	15%
4	10%
5	10%
6	10%
7	5%
8	5%
9	5%

- The Community College weighting structure is uniform and reflects institutional priority of the various outcomes.



TN Outcomes-Based Model



- All outcomes, save graduation rate, are counts rather than rates.
- Therefore, the outcomes model does not depend on an initial cohort.
- It includes any outcome achieved by any student at any time (part time, returning students, transfers, etc.).
- If we can locate the outcome, it is counted.

TN Outcomes-Based Model



- Most outcome data are derived from a statewide student information system.
- There are no state-imposed targets or pre-determined goals.
- Each institution's formula calculation is independent of other institutions.



TN Outcomes-Based Model



- However, the allocation of available (limited) state appropriations is competitive.
- The distribution of state appropriations follows a pro-rata share of each institution's formula calculation.
- If the state funds 60% of the overall higher education request, then each institution will receive 60% of its outcomes formula request.



TN Outcomes-Based Formula



- All state funding is back up for grabs every year.
- No institution is entitled to some minimal level of appropriations that is based on prior-year funding.
- State appropriations have to be earned anew each year.
- There is no need to wait on new funding to implement the formula.



TN Outcomes-Based Formula



- Formula has never been and is not now an institutional budgeting tool.
- Outcomes based model does not have targets or goals; it is not large scale Performance Funding.
- Institutional excellence will no longer be overshadowed by enrollment growth.





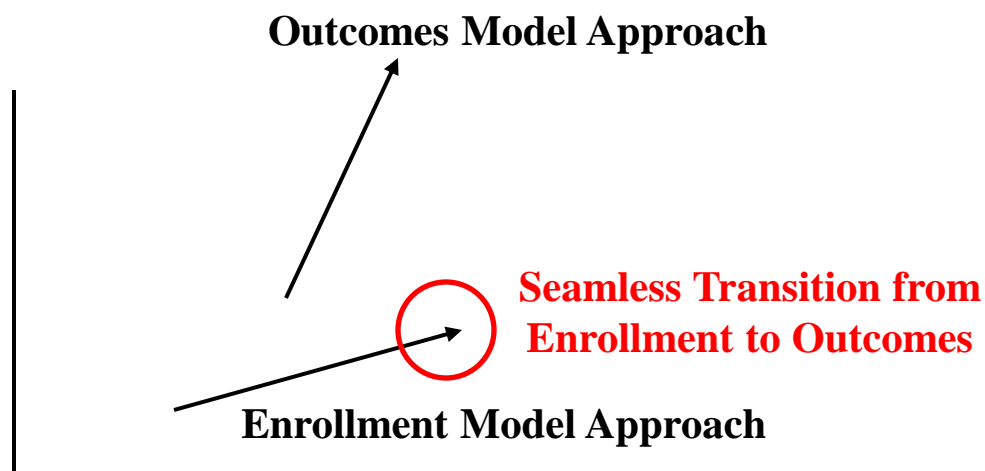
How was the outcomes
model implemented?



Implementation Strategies



- Used to recommend appropriation distribution for FY 11-12.
- The outcomes model begins where the old enrollment model left off.



TN Outcomes-Based Formula



2011-12 State Appropriations Based on Enrollment (Hypothetical) vs. Outcomes (Actual)

University	Enrollment Model	Outcomes Model	Percent
Austin Peay	\$25,017,700	\$25,028,100	0.0%
East Tennessee	\$44,149,100	\$43,971,600	-0.4%
Middle Tennessee	\$70,510,100	\$69,890,400	-0.9%
Tennessee State	\$28,269,900	\$28,096,600	-0.6%
Tennessee Tech	\$35,105,700	\$35,089,500	0.0%
University of Memphis	\$88,517,700	\$88,586,500	0.1%
UT Chattanooga	\$33,031,600	\$32,739,200	-0.9%
UT Knoxville	\$140,503,900	\$140,932,100	0.3%
UT Martin	\$23,373,800	\$23,222,200	-0.6%
Community Colleges	\$181,990,000	\$182,272,700	0.2%





What are the strengths and weaknesses of the outcomes-based formula model?



Outcomes Based Model Advantages



- Multiple measures of productivity, previously unaccounted for, will now be credited to the institution.
- Formula is not prescriptive in how to achieve success and excellence.
- Does not penalize failure to achieve pre-determined goals.



Outcomes Based Model Advantages



- Emphasizes unique institutional mission.
- More flexible. Can accommodate future shifts in mission or desired outcomes.
- More transparent and simpler for state government.
- Increased stability: funding is now a function of 10 variables, rather than a single variable (enrollment).



Outcomes Based Model Advantages



- The outcomes model is linked directly to the educational attainment goals of TN's Public Agenda.
- The outcomes model establishes a framework for government to have an ongoing policy discussion with higher education.
- The model is adjustable to account for new outcomes or a different policy focus (changing the weights).



Outcomes Based Model Advantages



- The structure (outcomes & weights) of the outcomes-based model is the key innovation.
- The specific outcomes and weights that TN chose fit our state's context and current needs.
- Other states could adopt the general design and decide for themselves what outcomes are valuable and how they should be weighted to reflect institutional mission.



From the Perspective of an Institution....



- State government should be clear in its expectations for higher education.
- Institutions should be given wide latitude in organizational, budgetary, programmatic and academic matters.
- State government should provide incentives for achievement, but should not interfere with institutional judgments about how to achieve those goals.



From the Perspective of State Government....



- What is the most effective means of allocating limited state resources among institutions?
- What macro-level information is crucial to making allocation decisions among institutions?
- What type of incentive structure can be created, with minimal operational interference but maximum leverage, to achieve state goals?





Dynamics Model

- The Formula Dynamics Model allows users to see how appropriations would shift if outcomes and overall funding change.
- Located on THEC website (www.tn.gov/thec/)
- Shows that the formula:
 - is relatively stable year to year
 - differentiates by mission





Is the formula working?

Implementation

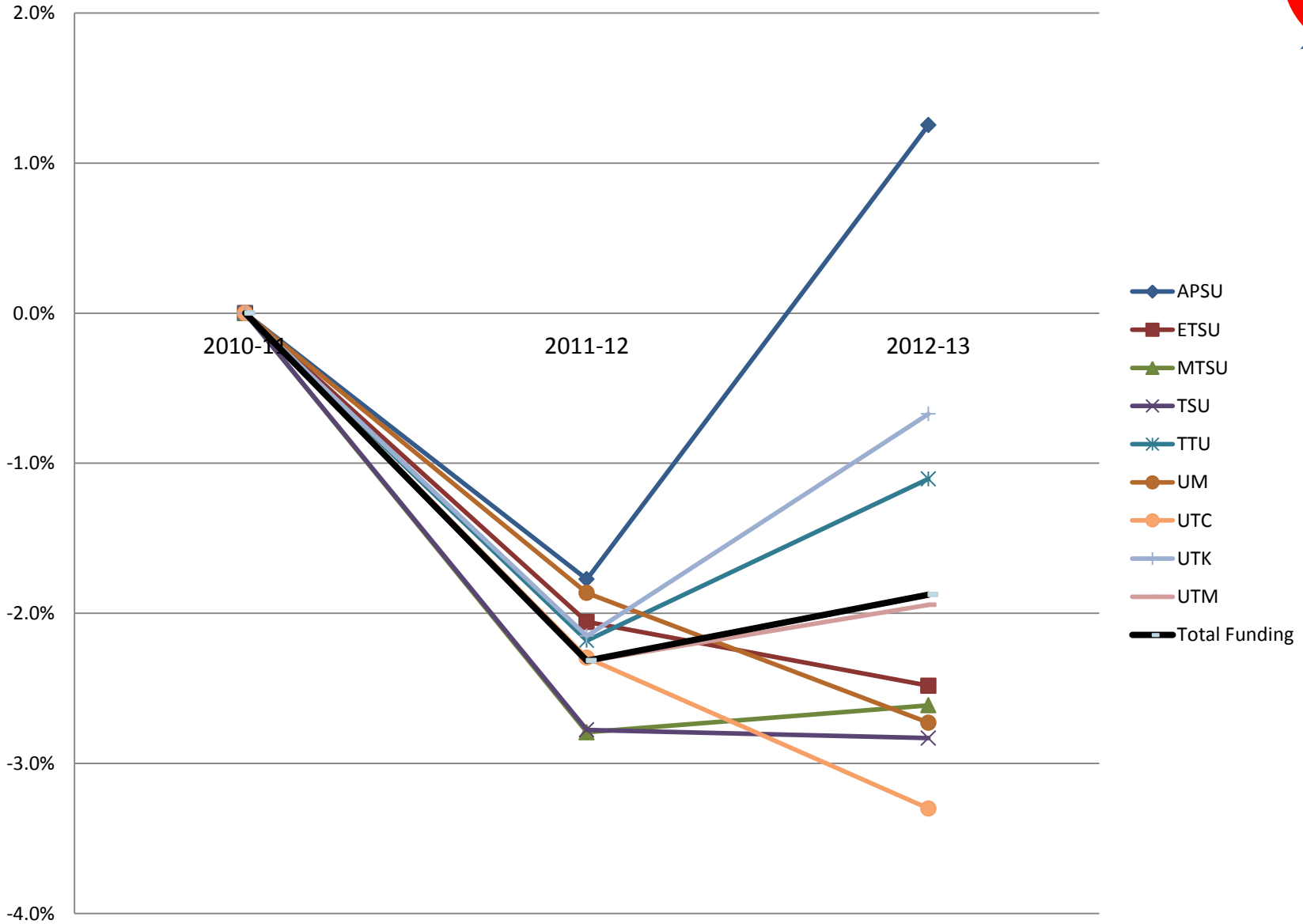


- Used to allocate appropriations in 2011-12 and 2012-13.
- Continued under new Governor of different party.
- Productivity funded in 2012-13.
- Anecdotal evidence.
- Ford Foundation study.





Cumulative Change in Appropriations Due to Formula 2010-11 Baseline



TN Outcomes Formula



- Extensive information, including the formula model, is available on the THEC homepage.
- tn.gov/thec





Tennessee's Outcomes-Based Funding Formula





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