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### **What is the return on state investments to higher education? Relating spending to the value of degrees and certificates**

The Delta Cost Project today released a white paper—*The Dreaded P Word: An Examination of Productivity in Public Postsecondary Education*—that presents a new market-based methodology for estimating productivity in state public higher education systems, and compares results across the states. The new measure relates state and student spending on higher education to the market value of degrees and credentials produced.

The market-based productivity estimates show that the costs per credential are lowest in the states of Florida, Colorado, Washington, Utah and North Dakota; these states convert resources into credentials that have value in their marketplaces. The least productive states – those with the highest costs per credential – are Alaska, Wyoming, Delaware, Rhode Island and Connecticut.

The market-based methodology uses data on state median earnings by education level to weight each state's certificate and degree production so it reflects the market value of the credential. The weighted certificate and degree awards are then compared to state and student spending on higher education, producing a market-based productivity estimate (spending per credential). The methodology was developed by Patrick Kelly, Senior Associate at the National Center for Higher Education Management Systems (NCHEMS), and author of the report (available at [www.deltacostproject.org/resources/pdf/Kelly07-09\\_WP.pdf](http://www.deltacostproject.org/resources/pdf/Kelly07-09_WP.pdf)).

An example of the methodology is presented in Figure 1 (using data for the state of Alabama). The cost per degree/certificate using reported awards is \$59,380, while the weighted cost (factoring in the value of the credentials on the market) is \$56,280. The difference arises because after weighting the completion data, a smaller share of all awards are accounted for at the sub-baccalaureate level (21 percent) than when using the reported share of certificates and associate's degrees (28 percent). Thus, the "productivity" of Alabama's public higher education system is higher (i.e., the cost of completion is lower) than would be expected looking at degree/certificate production alone.

**Figure 1: Calculating Higher Education Productivity  
Alabama (2006-2007)**

<b>Total funding</b> .....		\$2,394,572,347
(state and local appropriations and tuition revenues for public higher education)		
<b>Total awards</b> .....	<i>Reported</i>	<i>Weighted</i>
	40,326	42,548
(annual degrees and certificates awarded in public institutions)		

<b>Certificates/degree level</b>	<b>Median earnings</b>	<b>Earnings indexed to bachelor's degrees</b>	<b>Reported awards</b>	<b>Weighted awards</b>
Certificates	\$27,423	0.68	3,682	2,485
Certificates STEM	\$44,690	1.10	250	275
Associate's	\$32,502	0.80	6,977	5,582
Associates' STEM	\$47,737	1.18	466	548
Bachelor's	\$40,627	1.00	15,590	15,590
Bachelor's STEM	\$67,035	1.65	2,909	4,800
Master's	\$44,893	1.11	8,270	9,138
Master's STEM	\$76,176	1.88	825	1,547
Doctoral	\$66,019	1.63	485	788
Doctoral STEM	\$71,097	1.75	200	350
First professional	\$87,348	2.15	672	1,445
<b>Total</b>	---	---	<b>40,326</b>	<b>42,548</b>

<b>Productivity</b> .....	<i>Reported</i>	<i>Weighted</i>
	\$59,380	\$56,280
(spending per credential)		

Although this measure of productivity does not capture more granular measures of institutional production costs, the benefit is that it is relatively simple to use and policy makers don't need to wait for data and measurement issues to be resolved to evaluate performance. It will be particularly helpful to policy makers wanting to measure productivity but lacking the unit cost data necessary to look at the production costs of different degrees and credentials.

“When trying to gauge productivity in postsecondary education, the complexities of the enterprise and the lack of publicly available data and information have created a maze that has never been completely navigated” said Patrick Kelly. “The framework for measuring productivity presented here charts a new course. Even though it does not reach the finish line, it may go as far toward it as any other approach, but with fewer twists and turns.”

The market-based methodology is useful at a state-policy level both to look at spending against the market value of the degrees and credentials produced, and to compare overall productivity to the performance of postsecondary education in other states. Unlike other measures, this new method also takes the two-and four-year transfer mission into account; a state that has a successful transfer function will show higher productivity in the production of bachelor's degrees. It can also be adapted to be used at a system level, or for individual institutions.

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*The Delta Project on Postsecondary Costs, Productivity and Accountability is a non-profit, non-partisan research and policy organization focusing on spending in higher education. The white papers are designed to present ideas about ways to measure costs and improve productivity. For more information, please visit the Delta Project website, at: <http://www.deltacostproject.org>*