RESEARCH BRIEF

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A Value-Added Approach to Benchmarking NOVA:
Findings from the Brookings Institution

In April 2015 the Brookings Institution published a report that used a **value-added approach** to assessing two- and four-year colleges (Rothwell & Kulkarni, 2015). The authors extracted data from multiple government and public sources to analyze the economic outcomes of college graduates. The methodology the authors employed attempted to isolate the effects that colleges themselves have on student outcomes, thus going beyond what students' backgrounds would predict (Rothwell & Kulkarni, 2015).

Rothwell and Kulkarni (2015) theorized that economic outcomes of graduates are affected by student characteristics, the type of college they attend, the location of the college, and various aspects of college quality[1]. Based on these variables they developed a predictive model for student outcomes. They then compared predicted outcomes to actual outcomes to calculate the value-added regarding **mid-career salary**, **occupational earnings power**, and **loan repayment rates**.

This Brief compiles the findings of Rothwell and Kulkarni (2015) pertaining to Northern Virginia Community College (NOVA) and select peer and competitor institutions[2].

Summary of Findings

- The actual median **mid-career earnings** of NOVA graduates was $569 less than the amount predicted by the model, leading to a **negative one percent value-added** in terms of mid-career earnings.
- The actual **occupational earning power** of NOVA graduates was $628 greater than the amount predicted by the model, estimating a **one percent value-added** in terms of occupational earnings power of NOVA graduates.
- Although the model predicted an 86.62 percent **three-year loan repayment rate** for NOVA graduates, NOVA actually attained a repayment rate of 87.18, **a value-added of 0.56 percentage points**.

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[1]See Research Brief #29-15 for data comparing NOVA to peer institutions on College quality factors.
[2]These institutions include the College of Southern Maryland, Frederick Community College, Prince George's Community College, and Montgomery College (competitor institutions all located in the District of Columbia-Maryland-Virginia area); and J. Sargeant Reynolds Community College and Tidewater Community College, the next two largest Virginia Community College System institutions after NOVA.

Mid-Career Salary

Alumni mid-career salary indicates median total earnings by college for full-time workers with at least 10 years of experience. The data were collected from PayScale.com, a website that allows graduates to enter their information online in exchange for a free salary report.

College value-added with respect to alumni mid-career salary is the percentage increase or decrease in mid-career salary above or below what is predicted based on student and school characteristics. The comparison is the average institution, so that a negative score means alumni are earning below the average institution with similar student and institutional characteristics.

Prince George's Community College alumni attained the highest **actual mid-career earnings** ($63,800), followed by NOVA ($59,900). Tidewater Community College graduates attained the lowest median earnings ($43,300). Regarding all institutions, there was a $6,497 difference between the highest and lowest values predicted for mid-career earnings. Prince George's Community College scored the highest **value-added** (9 percent) in terms of mid-career earnings. Tidewater Community College scored the lowest (-22 percent). NOVA's value-added was negative one percent, indicating that NOVA alumni are earning slightly less than alumni of the average comparative institution.

Table 1. Actual Mid-Career Earnings, Predicted Mid-Career Earnings, and Value-Added by Institution

Institution	Mid-Career Earnings		Value-Added
	Actual*	Predicted	
J. Sargeant Reynolds Community College	$49,200	$54,345	-10%
Montgomery College	$53,200	$58,985	-10%
NOVA	$59,900	$60,469	-1%
Prince George's Community College	$63,800	$58,072	9%
Tidewater Community College	$43,300	$53,972	-22%

No data was provided for the College of Southern Maryland and Frederick Community College.

*Source: Payscale.com (using data from alumni with bachelor's only or associate's only, depending on which college award type is more commonly granted by institution).

Figure 1. Value-Added: Mid-Career Earnings by Institution
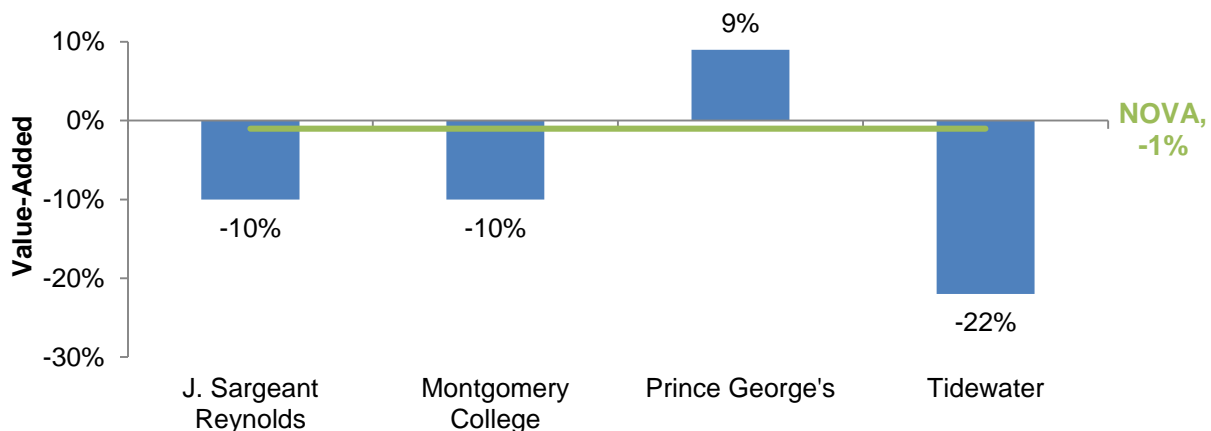
Occupational Earnings Power

Occupational earnings power assesses all graduates, including those who continued on to earn a four-year degree. The actual occupational earnings power indicates the average market value of the careers for which a college presumably prepared its graduates.

College value-added with respect to occupational earnings power is the percentage increase or decrease in the average salary of the occupations in which alumni work above or below what is predicted based on student and school characteristics.

Montgomery College graduates had the highest **actual occupational earnings power** ($62,529), followed by NOVA ($62,014). J. Sargeant Reynolds Community College had the lowest occupational earnings power ($60,431) and was the only institution with an actual occupational earnings power below the value predicted by the model. Looking at all institutions, there was an $853 difference between the highest and the lowest predicted values for occupational earnings power. NOVA scored a positive **value-added with respect to occupational earnings power** (one percent), tied with Frederick Community College and Prince George's Community College (see Figure 2, next page). Montgomery College attained the highest value-added (two percent).

Table 2. Actual Occupational Earnings Power, Predicted Occupational Earnings Power, and Value-Added by Institution

Institution	Occupational Earnings Power		Value-Added
	Actual*	Predicted	
College of Southern Maryland	$61,263	$61,002	0%
Frederick Community College	$61,478	$60,767	1%
J. Sargeant Reynolds Community College	$60,431	$61,065	-1%
Montgomery College	$62,529	$61,592	2%
NOVA	$62,014	$61,386	1%
Prince George's Community College	$61,411	$60,739	1%
Tidewater Community College	$61,205	$60,951	0%

*Source: LinkedIn used to weight earnings data (national wages by occupation) from the Bureau of Labor Statistics Occupational Employment Survey to arrive at an average salary figure. All alumni contribute to the final value.

Figure 2. Value-Added: Occupational Earnings Power by Institution
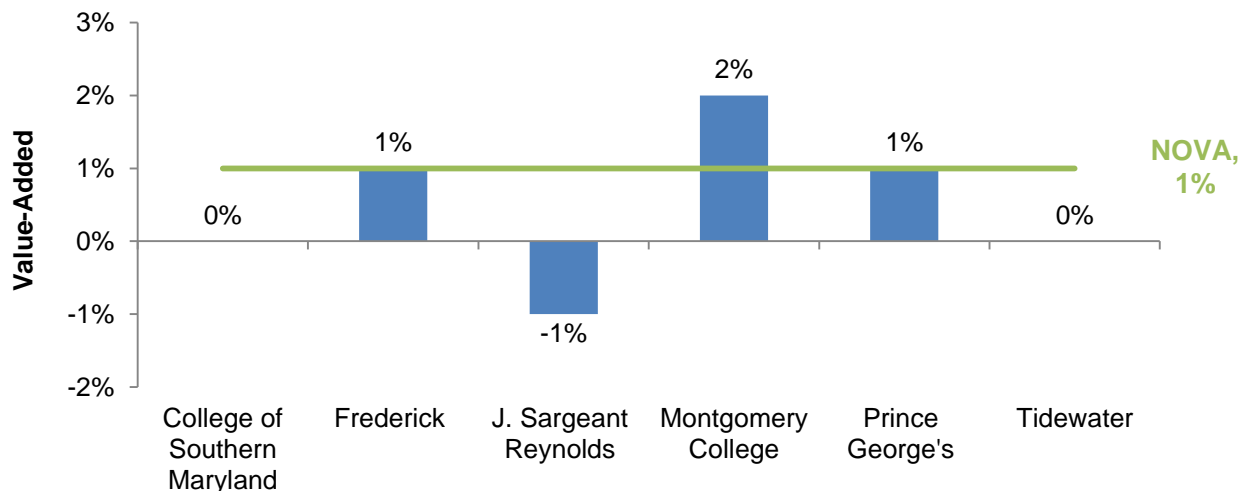
Loan Repayment Rates

Three-year repayment rates represent the percentage of a college's graduates who defaulted on their federal student loans within the first three years after repayment began. The total number of defaults from 2009 to 2014 was divided by the total number of borrowers during 2009 to 2011 to ensure that defaults only included the same cohorts. Default rates were converted to repayment rates for ease of comparison with positive economic outcomes.

College value-added with respect to federal student loan repayment is the predicted repayment rate subtracted from the actual repayment rate (i.e. the percentage point difference between actual and predicted repayment rates).

Montgomery College attained the highest **repayment rate** (88.53 percent), followed by NOVA (87.18 percent). J. Sargeant Reynolds Community College experienced the lowest repayment rate (81.94 percent). NOVA's **value-added with respect to federal student loan repayment** was positive (0.56) but was the fourth lowest score in the group of institutions presented (Figure 3, next page). Montgomery College scored the highest (2.22) while Frederick Community College scored the lowest (-2.72).

Table 3. Actual Three-Year Repayment Rate, Predicted Three-Year Repayment Rate, and Value-Added by Institution

Institution	3-Year Repayment Rate		Value-Added
	Actual*	Predicted	
College of Southern Maryland	86.10	85.25	0.85
Frederick Community College	85.23	87.95	-2.72
J. Sargeant Reynolds Community College	81.94	84.49	-2.55
Montgomery College	88.53	86.31	2.22
NOVA	87.18	86.62	0.56
Prince George's Community College	85.49	83.74	1.75
Tidewater Community College	83.01	84.13	-1.12

*Source: U.S. Department of Education.

Figure 3. Value-Added: Loan Repayment Rate by Institution
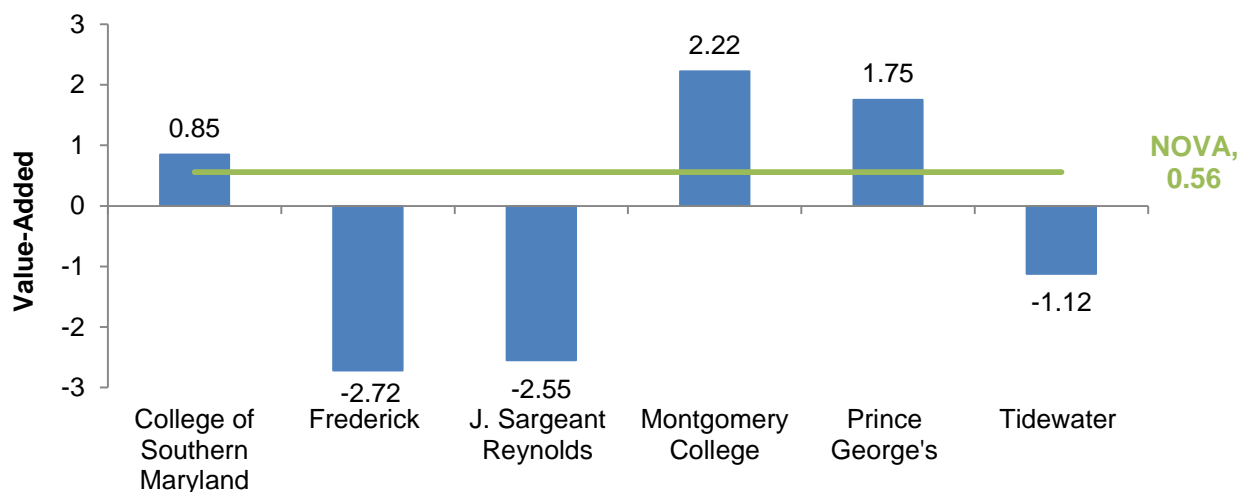
Reference: Rothwell, J., & Kulkarni, S. (2015). *Beyond College Rankings: A Value-Added Approach to Assessing Two- and Four-Year Schools.* Washington, DC: The Brookings Institution.