

Memorandum

To: Student Success & Institutional Collaboration Subcommittee, Oregon Higher Education Coordinating Commission

From: Kelli Smith, Economic Opportunity Institute

Date: June 2, 2014

Re: Oregon Pay It Forward Pilot Program Financial Forecasting: Methods and Assumptions

Introduction

The Oregon Pay It Forward Pilot Program will be a voluntary program offered to a stratified random sample of students that is broadly representative of the Oregon population. Under Pay It Forward, students can elect to take credits without paying upfront tuition. Instead, they agree to contribute a set percentage of their annual income for 20 years, depending on the number of credits they elect to take through the Pay It Forward program. The following memo outlines the details of the program that the workgroup has discussed as well as the assumptions and results of our financial analysis.

Program Assumptions

Contributions

1. Pay It Forward contribution rates are set by credit hour. For Oregon University System (OUS) institutions, contributions are set at 0.022% of AGI per credit, which equals 1% of AGI per 45 credits and 4% per 180 credits, the requirement for most Bachelor's degrees. For community colleges, contributions are set at 0.0167% of income per credit, which equals 0.75% per 45 credits and 1.5% per 90 credits, which is the requirement for most Associate degrees.
2. The contribution period is 20 years, and begins 6 months after graduation or cessation of studies. Cessation is assumed after 6 months of non-enrollment. However, the Workgroup has contemplated an appeal process whereby students may notify the Pay It Forward administrator that they intend to re-enroll after a break from enrollment, for example, for religious or family purposes.
3. Contributions are designed to ensure that taken as a whole, the Pay It Forward funding pool can sustain and gradually increase future enrollment. In this context, the average participant will contribute roughly the same as what would have been paid in tuition, over the totality of her contribution period.

Tuition Levels

1. For program design and contribution rate-setting purposes, annual tuition for OUS institutions is assumed to be \$9,703, equal to full-time tuition and fees at University of Oregon in 2013-14, the highest tuition and fees for a state four-year institution.
2. Tuition for community colleges is assumed to be \$5,193, equal to full-time tuition and fees at Southwestern Oregon Community College in 2013-14, the highest tuition and fees for a state community college.
3. Tuition is assumed to increase at no more than the rate of inflation, if at all, pursuant to legislative intent as stated in House Bill 3472: ". . . the Legislative Assembly now finds that it must halt the decrease in this state's support for public education and, over time, must increase its contribution to the funding of higher education . . ."
4. Using 2012-13 FTE enrollments, the weighted average tuition in the OUS is \$8,499.¹ The average (unweighted) tuition at Oregon Community Colleges is \$4,537.² This means that the pilot program costs have been calculated conservatively, providing a financial buffer.

¹ http://ous.edu/sites/default/files/dept/ir/reports/fb2010/2013_fact_book_web2.pdf.

Income Projections

1. Pay It Forward Pilot Program financial forecasting of contributions is based on projections of average future *incomes* of the Pay It Forward contributing cohort.
2. 'Income' is assumed to be 'total money earnings,' or 'salary income,' as defined by the U.S. Census Bureau: "the total income people receive for work performed as an employee during the income year. This category includes wages, salary, armed forces pay, commissions, tips, piece-rate payments, and cash bonuses earned, before deductions are made for items such as taxes, bonds, pensions, and union dues."³
3. The Pay It Forward Pilot will base actual contributions on "annual income," *a combination of adjusted gross income (AGI) and other income*. Because this definition of "annual income" includes other types of income in addition to salary income, the income series used in these financial projections produce conservative estimates of likely contributions.
4. The income data used in projections are 2011 National Mean Total Money Earnings, taken from the U.S. Census Bureau, Current Population Survey, 2012 Annual Social and Economic Supplement, organized by five-year age ranges and most advanced degree obtained.⁴ Therefore, projections of income for any given number of years after college are based on the age we assume a graduate will be at that point. For all projections, graduation/cessation age is assumed to be 22, and the age of first year of contribution is assumed to be 23. *Note:* While the actual average graduation age is difficult to ascertain, it is almost certainly higher than 22. Because incomes tend to increase with age, we believe setting the first year of contribution at 23 produces conservative income projections.
5. For each age range, the mean earnings raw data point is assigned to the midpoint age. For example, for the 25-29 age range, the mean of \$41,729 for a B.A. holder is assigned to age 27, the midpoint of the range. The remaining incomes are distributed between the bounding data points.
6. Income projections are weighted averages, based on the distribution of the expected level of education attained by Pay It Forward participants, discussed in the following section on graduation rates.

Graduation and Completion Rates

1. Income projections for all Pay It Forward participants rely on income data organized by highest level of education obtained, in the following six categories: some college, no degree; Associate degree; Bachelor's degree; Master's degree; Professional degree; and Doctorate degree.
2. In an effort to account for likely graduation and completion rates, the following assumptions about average income are made:
 - a. For community college Pay It Forward participants:
 - i. 63% of a given cohort will obtain some college, but no degree;
 - ii. 25% will obtain an Associate degree;
 - iii. 12% will obtain a Bachelor's degree; and
 - iv. 0% will obtain a Master's degree, Professional degree, or Doctorate degree.
 - b. For OUS Pay It Forward participants:
 - i. 13% of a given cohort will obtain some college, but no degree;
 - ii. 16% will obtain an Associate degree;
 - iii. 65% will obtain a Bachelor's degree;
 - iv. 4% will obtain a Master's degree;
 - v. 1% will obtain a Professional degree; and

² <http://www.oregon.gov/ccwd/pdf/Tuition/TuitionFees2013-14.pdf>.

³ <http://www.census.gov/cps/about/cpsdef.html>.

⁴ http://www.census.gov/hhes/www/cpstables/032012/perinc/pinc04_000.htm

- vi. 1% will obtain a Doctorate degree.
3. These assumptions are based on the following data:
 - a. In 2010-11, Oregon community colleges had
 - i. 124,988 FTE enrolled;
 - ii. 22.1% AA completion;
 - iii. 14.7% OUS transfer rate;
 - iv. 92.4% nursing completion (not accounted for in AA completions); and
 - v. 7,439 career and technical education completions (not accounted for in AA completions).⁵
 - b. The six-year graduation rate for the 2006 cohort of OUS entering freshmen was 60.5%; that of those who persisted to second year was 72.8%; and that of those who persisted to third year was 81.8%.⁶
 - c. In 2006, the six-year graduation rate for the 2006 cohort of Oregon Community College transfers to OUS institutions who entered with an Associate Degree was 77.8%.⁷

Attrition and Mortality

1. For each program year, the attrition rate reflects nationwide death rates for the given age.
2. In addition, we assume a 4% cohort non-contribution rate over the life of the cohort, based roughly on the student loan default rate for Oregon public four-year universities.⁸ Our forecasting assumes that some portion (about 2%) of the cohort will never make contributions, and some others (about another 2%) will make some contributions, then default over time.

Variables. Length and rate of contributions, length of the grace period, and tuition assumptions may be adjusted as needed. Variables such as changes in real income or tuition, or controlled growth of the cohort can be adjusted, but have not been included in these calculations.

Tuition Changes. Tuition is assumed to remain constant, relative to inflation. The program is designed to work best if tuition is decreased or remains the same. If tuition increases above the rate of inflation, the contribution rates and/or lengths of contribution for each cohort may need to be adjusted upward. Likewise, the cost of the program to the state should be adjusted if tuition increases.

Administrative Costs. The estimated administrative costs provided by OSAC have been included in the forecasting, and are estimated to be less than 1% of overall total program costs.

Enrollment. We assume that 45% of Pay It Forward FTE will attend four-year institutions, and 55% FTE will attend community colleges.⁹

⁵ <http://www.oregon.gov/ccwd/pdf/Profile/ORCCProfile11-12.pdf>.

⁶ http://ous.edu/sites/default/files/dept/ir/reports/fb2010/2013_fact_book_web2.pdf.

⁷ http://ous.edu/sites/default/files/dept/ir/reports/fb2010/2013_fact_book_web2.pdf.

⁸ http://collegemeasures.org/4-year_colleges/institution/.

⁹ In fall 2011, undergrad FTE enrollment at OUS institutions was 68,693 and lower division collegiate and career technical FTE enrollment at Oregon community colleges was 95,413. Assuming a slight bump in university enrollment after removing the upfront cost barrier, this analysis assumes 45% enrollment in universities and 55% enrollment in community colleges. See

http://ous.edu/sites/default/files/dept/ir/reports/fb2010/2011_Facts_and_Figures_0.pdf and <http://www.oregon.gov/ccwd/pdf/Profile/ORCCProfile11-12.pdf>.

Cost and Cash Flow Projections

The transition costs needed from the state are equal to the amount of upfront tuition the state covers on behalf of the Pay It Forward participants, as well as administrative costs, which are factored into the financial forecasting. The Workgroup has developed models for small, medium, and large Pay It Forward programs. Each is described in the two sections below.

To provide a financial buffer, the Workgroup set contribution rates assuming that every Pay It Forward student's tuition will be equal to that of the highest tuition in the state. For the purpose of cost projections, the financial forecasting assumes current enrollment rates at each institution, and therefore assumes tuition at weighted average levels for OUS and at the average level for community colleges. Based on this, contributions were set based on the Highest-Tuition Model, described below. For the purpose of trust fund and cost projections, the Weighted-Average-Tuition Model is used.

Weighted-Average-Tuition Model

For comparison, this model assumes the weighted average of tuition at the four-year institutions, \$8,499, and the average community college tuition of \$4,537.

1. Cash Flow

- a. The program costs will come to scale by Year 4. For each year thereafter, Pay It Forward contributions will cover increasingly more of the upfront costs for new participants. Therefore, the cost to the state decreases each year until Year 22, when the Pay It Forward trust fund reaches self-sufficiency.
- b. If the state chose to maintain a constant level of funding for Pay It Forward, the contributions from participants would enable a growing cohort of new Pay It Forward participants. This projection varies with tuition, income, and contribution rates and lengths for Pay It Forward participants.

2. Transition Costs

- a. Option 1: Assuming 1,000 new FTE annually: 450 FTE at four-years, and 550 FTE at CCs.
 - i. Year 1 cost: \$6.5 million
 - ii. Year 2 cost: \$12.7 million
 - iii. Year 3 cost: \$16.6 million
 - iv. Year 4 cost: \$20.2 million
- b. Option 2: Assuming 600 new FTE annually: 270 FTE at four-years, and 330 FTE at CCs.
 - i. Year 1 cost: \$4 million
 - ii. Year 2 cost: \$7.7 million
 - iii. Year 3 cost: \$10 million
 - iv. Year 4 cost: \$12.2 million
- c. Option 3: Assuming 400 new FTE annually: 180 FTE at four-years, and 220 FTE at CCs.
 - i. Year 1 cost: \$2.7 million
 - ii. Year 2 cost: \$5.1 million
 - iii. Year 3 cost: \$6.7 million
 - iv. Year 4 cost: \$8.2 million

Highest-Tuition Model

This model assumes the highest tuition in the state for both programs, \$9,703 for four-year institutions, and \$5,193 for community colleges.

1. Cash Flow

- a. The program costs will come to scale by Year 4. For each year thereafter, Pay It Forward contributions will cover increasingly more of the upfront costs for new participants. Therefore, the cost to the state decreases each year until Year 24, when the Pay It Forward trust fund reaches self-sufficiency.
- b. If the state chose to maintain a constant level of funding for Pay It Forward, the contributions from participants would enable a growing cohort of new Pay It Forward participants. This projection varies with tuition, income, and contribution rates and lengths for Pay It Forward participants.

2. Transition Costs

- a. Option 1: Assuming 1,000 new FTE annually: 450 FTE at four-years, and 550 FTE at CCs.
 - i. Year 1: \$7.4 million
 - ii. Year 2: \$14.5 million
 - iii. Year 3: \$18.9 million
 - iv. Year 4: \$23.1 million
- b. Option 2: Assuming 600 new FTE annually: 270 FTE at four-years, and 330 FTE at CCs.
 - i. Year 1: \$4.5 million
 - ii. Year 2: \$8.8 million
 - iii. Year 3: \$11.4 million
 - iv. Year 4: \$13.9 million
- c. Option 3: Assuming 400 new FTE annually: 180 FTE at four-years, and 220 FTE at CCs.
 - i. Year 1 cost: \$3.1 million
 - ii. Year 2 cost: \$5.9 million
 - iii. Year 3 cost: \$7.6 million
 - iv. Year 4 cost: \$9.3 million
 - v. *Note:* Under this size of the highest-tuition model only, assuming OSAC’s administrative costs will remain the same no matter the size of the pilot, the trust fund would not reach self-sufficiency in the 24th year. Instead, it would carry a deficit of about \$4,000 in year 24, decreasing each year thereafter. In Year 49, the deficit would be about \$1,400. Our forecasting does not extend beyond the 50th year.

Summary of Cost Projections

Dollars in millions	1,000 Annual FTE		600 Annual FTE		400 Annual FTE	
	Highest Tuition	Average Tuition	Highest Tuition	Average Tuition	Highest Tuition	Average Tuition
Year 1	\$7.4	\$6.5	\$4.5	\$4	\$3.1	\$2.7
Year 2	\$14.5	\$12.7	\$8.8	\$7.7	\$5.9	\$5.1
Year 3	\$18.9	\$16.6	\$11.4	\$10	\$7.6	\$6.7
Year 4	\$23.1	\$20.2	\$13.8	\$12.2	\$9.3	\$8.2