

2021



EXPERIENCE STUDY



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Office of the State Actuary

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Letter of Introduction Guaranteed Education Tuition Program 2021 Experience Study

July 2021

This report documents the results of an experience study on the assumptions and methods we use to perform actuarial analysis on the Guaranteed Education Tuition (GET) program. The primary purpose of this experience study is to compare the current economic, demographic, and behavioral assumptions to the actual experience of the GET program and determine if any changes or adjustments are required to ensure our assumptions and methods remain reasonable.

This report is organized in the following sections:

- ❖ Executive Summary.
- ❖ Actuarial Certification.
- ❖ Development of Assumptions.
- ❖ Appendices.

The **Executive Summary** provides the key results for this experience study, and the **Actuarial Certification** shares critical disclosures. The **Development of Assumptions** and **Appendices** provide detailed information for each item studied. For each assumption, we briefly discuss how it is used, the updated best estimate assumption determined in this study, and the data, assumptions, and methods we used to set the updated assumption. Please see the forthcoming *2021 GET Actuarial Valuation Report* (GAVR) for the impact on program liabilities and unit price setting analysis resulting from this experience study.

We encourage you to submit any questions you might have concerning this report to our mailing address or our e-mail address at state.actuary@leg.wa.gov. We also invite you to visit WA529's [website](#) for further information regarding Washington's GET program.

Sincerely,

Matthew M. Smith, FCA, EA, MAAA
State Actuary

EXECUTIVE SUMMARY



The Office of the State Actuary prepared this actuarial experience study on the GET Program at the request of the Washington Student Achievement Council. This experience study covers plan experience primarily through 2020 and includes an analysis of assumptions used to develop the annual actuarial valuation results and unit price setting analysis. The study does not consider impacts to assumptions from the COVID-19 health crisis. These impacts may be relatively short-term in nature, and this study sets assumptions that are reasonable over a longer time frame. However, for all measurements that rely on these assumptions, we will consider if assumption adjustments are necessary to reflect potential COVID-19 impacts.

We summarize the result of our analysis by assumption below.

Tuition Growth

The Tuition Growth assumption is an economic assumption used for the actuarial valuation of the GET program and the unit price setting analysis. Based on the results of this study, we decreased our long-term Tuition Growth assumption from 5.00 to 4.00 percent.

We also created a new framework for enacted and expected tuition growth rates consistent with current law tuition policy to help assist with setting annual Tuition Growth assumptions. Under this framework, we set the first three to four years of assumed tuition growth rates (depending on the biennial budget cycle) consistent with the enacted budget and the current tuition policy. Beyond that period, we set rates that consist of our long-term assumed growth rate plus an adjustment for past differences between higher education inflationary costs and historical higher education budget growth.

New Unit Sales Profile

The New Unit Sales Profile assumption estimates the length of time a newly purchased unit is held before redemption. This assumption is used in conjunction with the Redemption Rate assumption in the annual price setting analysis to model the time between unit purchase and redemption to determine future program obligations. As a result of this study, we simplified our assumption format. We also updated the assumption based on unit sales data during the study. As a result of this update, the average expected holding period until first unit use declined by 1.5 years from 13.7 years to 12.2 years.

Redemption Rate

To determine future program obligations, we set a Redemption Rate assumption. This assumption estimates when beneficiaries will start redeeming their units after their self-reported first benefit use year and for how long they will redeem their units. It is used for the actuarial valuation of the GET program and the unit price setting analysis. We determined our prior assumption of 20 percent of total units redeemed each year remained reasonable. However, based on a review of actual versus self-reported use year data for previously redeemed units, we added a half year delay to the self-reported use year for contracts that have not initiated redemption.

Miscellaneous Unit Change

The Miscellaneous Unit Change assumptions represent a set of assumptions corresponding to annual unit distributions and unit losses of outstanding units for reasons other than qualified unit redemption. It includes account changes due to refunds, rollovers into other 529 programs, and changes to custom monthly contract agreements. We reviewed these items for materiality to the funded status results and chose not to include these assumptions or the required additional modelling complexity in our valuation. These assumptions may be material to other measurements. For example, the pricing of a program change related to non-qualified unit redemptions. We will continue to assess these assumptions in future experience studies.

Removed Assumptions

We removed multiple assumptions from our study that were included in the *2015 GET Experience Study* that are no longer in use or reviewed as part of the annual actuarial valuation cycle. We provide a full list of the **Removed Assumptions** in the **Appendix**.

ACTUARIAL CERTIFICATION LETTER





Office of the State Actuary

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Actuarial Certification Letter Guaranteed Education Tuition Program Experience Study

July 2021

This report documents the results of an experience study on the Guaranteed Education Tuition (GET) program defined under [Chapter 28B.95](#) of the Revised Code of Washington (RCW). The primary purpose of this study is to compare current economic and demographic assumptions to the actual experience of GET for the applicable experience study period, review data and trends that provide insight for future expectations, and apply this information to determine economic and demographic assumptions for future actuarial analysis on GET. This analysis should not be used for other purposes.

This analysis will become outdated with the release of our next experience study report. Please replace this report with our next report when available.

An experience study involves comparing actual experience with the assumptions we made for applicable experience study periods. We also review other relevant data to form expectations for the future. The analysis concludes with the selection of updated assumptions for future actuarial analysis. Standards of practice that specifically apply to prepaid tuition programs have not been defined within the actuarial profession. We use Actuarial Standard of Practice Number 27 ([ASOP 27](#)), titled *Selection of Economic Assumptions for Measuring Pension Obligations*, and [ASOP 35](#), titled *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, to guide our work in this area. Unless otherwise noted, we relied on participant and historical data provided to us by GET Program staff through June 30, 2020.

We checked the data for reasonableness as appropriate based on the purpose of this study. An audit of the data was not performed. We relied on all the information provided as complete and accurate. In our opinions, this information is adequate and substantially complete for purposes of this study.

No members of the GET Committee or their respective staff attempted to bias our work product. We are not aware of any matters that impacted the independence and objectivity of our work.

Consistent with the Code of Professional Conduct that applies to actuaries, I (Michael T. Harbour) must disclose any potential conflict of interest as required under Precept 7. I purchased and have unredeemed units in GET; however, this does not impair my ability to

act fairly. I performed all analysis without bias or influence. The Legislature mandated the Office of the State Actuary to perform actuarial services for GET and Matthew M. Smith supervised the actuarial analysis.

We advise readers of this report to seek professional guidance as to its content and interpretation, and not to rely upon this communication without such guidance. Please read the analysis shown in this report as a whole. Distribution of, or reliance on, only parts of this report could result in its misuse and may mislead others.

The updated assumptions in this experience study involve the interpretation of many factors and the application of professional judgment. We believe that the data, assumptions, and methods used in the underlying experience study are reasonable and appropriate for the primary purpose stated above. The use of another set of data, assumptions, and methods, however, could also be reasonable and could produce materially different results. Another actuary may review the results of this analysis and reach different conclusions.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this report is intended to be complete, we are available to offer extra advice and explanations as needed.

Sincerely,

The image shows two handwritten signatures in black ink. The first signature is for Matthew M. Smith, and the second is for Michael T. Harbour. The signature for Michael T. Harbour is written in a cursive style and includes the name "Michael Harbour".

Matthew M. Smith, FCA, EA, MAAA
State Actuary

Michael T. Harbour, ASA, MAAA
Actuary

DEVELOPMENT OF ASSUMPTIONS



Tuition Growth

What Is the Assumption and How Do We Use It?

The Tuition Growth assumption represents the expected future growth in the payout value of a GET unit. Typically, this payout value follows the growth in the resident undergraduate annual tuition rate at the University of Washington (UW). We rely on information from UW, current law tuition policy, and underlying economic factors to study and shape the analysis for this assumption.

We use the Tuition Growth assumption to model the anticipated future GET unit payout value for valuation and unit price setting purposes. The assumption is a key component in projecting the state's expected GET unit obligation for current contract holders in the GAVR. For new unit purchasers, we base the new unit price analysis on the average expected future payout of a single unit, which is based on the Tuition Growth assumption.

High Level Takeaways

We reviewed our old approach to setting annual tuition growth and found it to be too prescriptive and inconsistent with recent history. As part of our review, we considered historical growth in the Cost Of Instruction (COI) at UW and tuition growth rates enacted in recent years. We also updated our methodology for setting the annual Tuition Growth assumption which now consists of a framework that relies on:

1. The long-term Tuition Growth assumption, and;
2. Enacted and expected tuition growth rates consistent with current law tuition policy.

We further define and set these components in the **Tuition Growth Appendix**.

We used a building block approach to set the first component, which decreased from 5.00 percent to 4.00 percent as a result of this study. We rely on current tuition policy and enacted budgets to overlay the second component.

Data and Assumptions

To study the long-term Tuition Growth assumption, we relied on a variety of information sources, listed below.

- ❖ **Short-Term National Inflation Forecast** – We relied on economic projections from the Congressional Budget Office, a survey of professional forecasters from the Philadelphia Federal Reserve, price-inflation assumptions from the Social Security Administration's Trustee Report, and the economic forecasts from the Washington State Economic and Revenue Forecast Council.
- ❖ **Bureau of Labor Statistics** – We relied on historical Consumer Price Index for All Urban Consumers (CPI-U) figures (national and Seattle-Tacoma-Bellevue [STB] indices) to study national and regional COI inflation. We relied on historical median wage growth to support our analysis of current tuition growth policy.

DEVELOPMENT OF ASSUMPTIONS – Tuition Growth

- ❖ **Commonfund** – We used the Higher Education Price Index (HEPI) to assess higher education inflation relative to CPI figures.
- ❖ **UW Office of Planning and Budget** – We relied on historical core operating budgets and tuition data that UW provided to study both of these factors.
- ❖ **UW Profiles** – We relied on historical student Full-Time Equivalent (FTE) data to study utilization of higher education services.
- ❖ **Office of Financial Management (OFM)** – We used Washington State population forecasts as contextual information to support our higher education utilization growth rate estimate.

General Methodology

We created the new Tuition Growth assumption framework based on a set of considerations, such as the current law higher education tuition growth policy, enacted tuition growth rates set by the Legislature, our long-term Tuition Growth assumption, and adjustments based on models used to assess growth in UW's core budget in relation to higher education inflation. Under our new framework, if the growth of UW's core budget is faster/slower than higher education inflation, we assume lower/higher long-term tuition growth.

Using the framework, we set the first three to four years of assumed tuition growth rates (depending on the biennial budget cycle) consistent with the enacted budget and the current tuition policy. Beyond that period, we set rates that consist of our long-term assumed growth rate plus an adjustment for past differences between higher education inflationary costs and historical UW budget growth.

The primary focus of our new analysis is COI inflationary growth. This growth is comprised of price inflation and utilization. For price inflation, we factor in regional and higher education inflation. To study utilization growth, we observed the growth in the student FTE at UW (all campuses). With both price inflation and utilization, we also considered expectations for the future.

When setting the long-term growth assumption, we explicitly separated these considerations into four distinct building blocks:

- i. National inflation forecasts.
- ii. Regional factors based on national and regional CPI.
- iii. Higher education factors based on national and regional HEPI.
- iv. Utilization growth rate of higher education services at UW.

Our old assumption setting approach relied on enacted tuition growth rates set by the Legislature and information about the level of COI General Fund-State (GF-S) funding at UW. As part of this experience study, we reviewed our old approach and found that it consistently estimated higher tuition growth than actual experience. This review helped inform the approach we took to the new assumption-setting framework, in which we no longer

forecast changes to the assumed level of COI funding that come from the GF-S or any other source aside from tuition growth. Under our new approach, any changes made to the assumed level of state funding will be included in the enacted tuition growth rates when those changes are enacted by the Legislature.

The methodology used to study and set the long-term Tuition Growth assumption is detailed further in the **Tuition Growth Appendix**.

Additional Considerations

Below, we discuss several considerations we used to set the annual tuition growth framework and the long-term Tuition Growth assumption.

(1) Cost of Instruction

At a high level, we define the COI, which is the basis for our long-term Tuition Growth assumption, as the annual cost to fund the university enterprise. We consider the COI to generally follow inflation with added costs associated with higher education and the change in utilization rates of those costs. Over the long term, we assume the inflationary growth in the COI is a proxy for long-term tuition growth. As such, the COI changes over time and is influenced by economic business cycles.

We also considered recent, historical UW budget information and its relationship to the HEPI. We compared growth in UW's Core Budget to the growth in the HEPI. In our comparison, we looked at years since the current tuition policy was enacted in 2015 through fiscal year 2021. We considered the overall growth during this period of both sources and any significant difference in growth between the two sources as a basis for a potential upward or downward adjustment to the long-term Tuition Growth rate assumption. At the time of this study we did not observe significant deviation between UW's Core Budget and HEPI growth. For this reason, we will make no adjustment to our long-term Tuition Growth assumption in our 2020 GAVR and 2021-22 unit price setting analysis but will continue to monitor this assumption annually.

See the **General Methodology** section for further details.

(2) Current Law Tuition Growth Policy

Under [Senate Bill \(SB\) 5954](#) (Chapter 36, Laws of 2015), annual growth in the resident undergraduate tuition is limited by the growth in the median hourly wage of Washington State. More specifically, tuition growth is tied to the average annual growth over the previous 14-year period. Since this policy has taken effect, actual growth in tuition rates have remained consistent with the policy.

Our models and expectations for the future are meant for the medium- and long-term. When setting our Tuition Growth assumption, we overlay enacted tuition growth rates set by the Legislature in the enacted biennial state budget. With consideration for the balanced budget requirement ([RCW 43.88.055](#)), which requires a four-year balanced budget, we extend expected tuition rates under current tuition policy for an additional two years. Put differently, we set the first three to four years of our prospective assumption, depending on the applicable year within

DEVELOPMENT OF ASSUMPTIONS – Tuition Growth

the biennial budget cycle, consistent with tuition growth policy. The first one to two years of this three to four year set aligns with the enacted growth rates¹ in the most recent state budget.

Results

(1) Long-Term Tuition Growth

Based on our review of the old long-term Tuition Growth assumption and the analysis presented in this study, we updated our long-term assumption. Our analysis considered historical changes in the COI, current tuition policy and its impacts, and our expectations for future tuition growth.

The following table shows our old and new assumption for long-term tuition growth along with the building block estimates that make up the new assumption.

Long-Term Tuition Growth Building Blocks		
Price Inflation		
Block (i)	National Inflation Forecast	2.25%
Block (ii)	Regional Inflation Adjustment	0.40%
Block (iii)	Higher Education Inflation Adjustment	0.60%
Utilization		
Block (iv)	Higher Education Services Utilization	0.75%
New Long-Term Tuition Growth Assumption		4.00%
Old Long-Term Tuition Growth Assumption		5.00%

(2) Tuition Growth Assumption Format

The following table illustrates the structure of the new annual Tuition Growth assumptions, which will be set each year with the GAVR.

Under the new format, we use enacted rates in the first one to two years, followed by two more years of growth rates consistent with current tuition policy, and ending with our long-term assumption for all future years. We will review the long-term assumption annually for continued reasonability and consider adjustments to the rate each year. For the 2020 GAVR and 2021-22 unit price setting analysis, we determined no adjustment was necessary.

New Tuition Growth Assumption Format			
FY	Tuition Growth Assumption		
Year 1	2022	Current Tuition Policy – Enacted Rates	TBD
Year 2	2023	Current Tuition Policy – Enacted Rates	TBD
Year 3	2024	Current Tuition Policy – Expected Rates	TBD
Year 4	2025	Current Tuition Policy – Expected Rates	TBD
Year 5+	2026+	Long-Term Tuition Growth with Adjustments	4.00%

¹For the purposes of this study, we refer to tuition growth rates in the first biennium as “enacted.” The actual annual growth rates are not known until prior to the start of each school year.

New Unit Sales Profile

What Is the Assumption and How Do We Use It?

The New Unit Sales Profile assumption describes the average amount of time between a unit purchase and expected first unit redemption year (i.e., the “average holding period”) for a future GET unit purchaser. We use the New Unit Sales Profile assumption in conjunction with the Redemption Rate assumption to project future tuition costs and investment returns to calculate the GET unit price.

When a unit is purchased, the account holder self-reports the length of time before they expect to redeem their first unit. We use this known information to inform our actuarial valuation of purchased and unredeemed units. Because this information is not known for an unpurchased, new unit, we use the New Unit Sales Profile assumption to calculate the GET unit price.

This assumption was previously referred to as the New Entrant Profile.

High Level Takeaways

In general, we observed new purchasers with older beneficiaries than expected. In other words, the average holding period was shorter than expected. We made minor adjustments to our prior assumption, which is used for unit pricing analysis.

We also changed our methodology to include all unit purchases. In the past, only unit purchases from new accounts were included in our analysis. Existing account holders tend to have older beneficiaries than new account holders. We apply the assumed profile when calculating the price for all new unit sales – whether a new or existing account holder.

We no longer include finance charges in the calculation of a unit price. We therefore no longer differentiate between lump sum and monthly payment plan purchase when setting this assumption.

As a result of this experience study and the updated data, assumptions, and methods used, the average holding period until first unit use decreased from 13.7 to 12.2 years.

Data and Assumptions

We relied on data provided by GET staff that included historical unit sales from 2010 to 2020. We excluded 2015 and 2016 from the data when unit sales were suspended. The data shows the year in which lump sum purchases were made or new custom monthly contracts began. The data also shows the expected year of first unit redemption for each contract as reported by the account holder. We made some adjustments to the data for this assumption as noted in the **New Unit Sales Profile Appendix**.

General Methodology

The future value of a GET unit will ultimately be determined by future tuition costs and the time at which a beneficiary redeems their unit. When determining the unit price, we create

DEVELOPMENT OF ASSUMPTIONS – New Unit Sales Profile

a new unit sales profile (in combination with our Redemption Rate assumption) to model the time lapse between when a unit is purchased and when it is redeemed.

The profile, when applied to all sales for an enrollment period, represents an average single new unit bought in the program. This profile was created by analyzing the holding period of each new unit sale or custom monthly contract in our historical data. This is different than our prior methodology which focused on new account holders exclusively.

To determine our new assumption, we (1) examined the average proportions of holding periods for new unit sales over the most recent three years of data, (2) identified any noticeable trends in the data since 2010, (3) considered expectations for the future, and (4) used our professional judgement to set a New Unit Sales Profile assumption.

Please see the **New Unit Sales Profile Appendix** for more information on our Methodology.

Additional Considerations

When setting this assumption, we also considered the following:

- ❖ According to GET staff, the marketing strategy of GET units has shifted to encourage customers to purchase units when the beneficiary is at a younger age.
- ❖ The GET program was closed to new unit purchases during the 2015-16 and 2016-17 enrollment years.
- ❖ In 2018, the DreamAhead College Investment Plan (DreamAhead) opened to new account holders. This included incentivized rollovers for certain GET program participants.

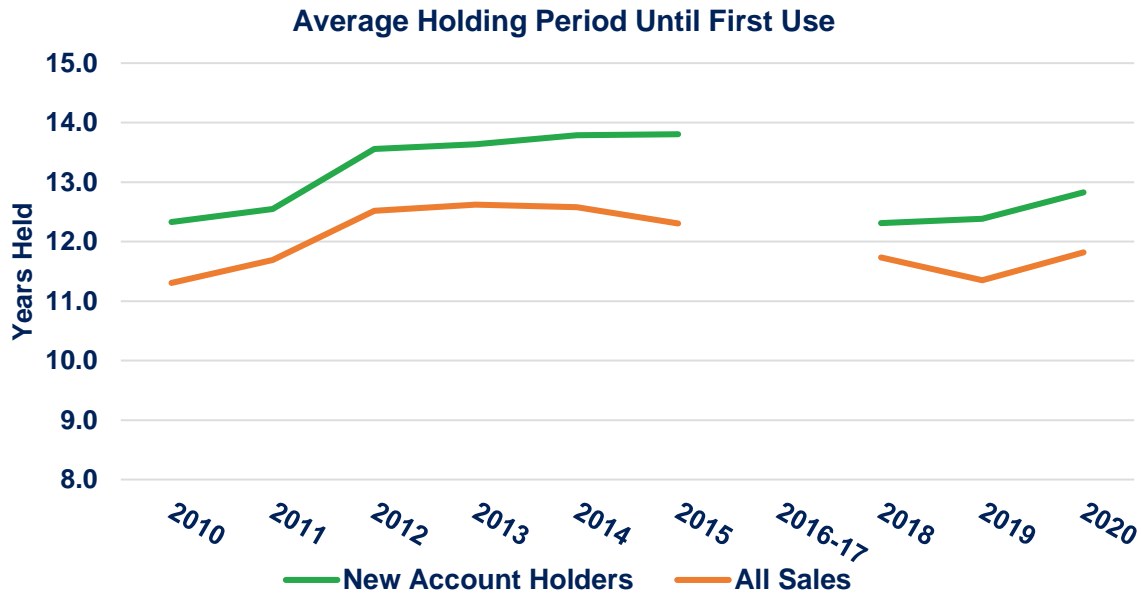
These three factors may lead to future purchasers having different characteristics than historical unit purchasers. Please see the **New Unit Sales Profile Appendix** for more information.

Results

In general, we did not identify any noticeable trends indicating a consistent increase or decrease in average holding periods over time. However, there was a decline in the average holding period of new unit sales following the program closure to new sales in Fiscal Years (FYs) 2016 and 2017. Following that period of decline, we observed an increase.

We also examined the difference in the holding period between new unit sales for all purchasers and those for new account holders exclusively to determine the impact of the change in our methodology. We found all unit sales had a shorter average holding period than unit sales for new account holders exclusively. The chart below illustrates the trends we observed in our data.

DEVELOPMENT OF ASSUMPTIONS – New Unit Sales Profile



Additionally, we compiled the historical percentage of unit sales composed of prior account holders to study any trends. We did observe a general trend toward more unit sales from prior account holders, but we expect this proportion to stabilize in future years.

We also consulted with GET staff to gauge how future experience might differ from historical trends due to marketing strategies and recent program changes. Based on these discussions, we estimate the average holding period will be slightly higher than suggested by the last three years of data.

The following tables show the old New Unit Sales Profile assumption followed by the new assumption. Overall, we now assume unit purchases will have a slightly shorter average holding period. In other words, we believe future purchasers will have slightly older beneficiaries than previously assumed. The new assumption projects that unit purchasers will use units roughly 1.4 years earlier.

Please see the **New Unit Sales Profile Appendix** for more details on how the old assumption was simplified for display purposes in the following tables.

DEVELOPMENT OF ASSUMPTIONS – New Unit Sales Profile

Old Assumption		New Assumption	
Holding Period (Years)	Percent of Single Unit	Holding Period (Years)	Percent of Single Unit
2	0.2%	2	1%
3	1.6%	3	2%
4	1.3%	4	2%
5	2.0%	5	4%
6	2.8%	6	4%
7	3.5%	7	6%
8	4.7%	8	6%
9	4.9%	9	6%
10	4.9%	10	6%
11	5.5%	11	6%
12	5.8%	12	6%
13	6.0%	13	7%
14	7.8%	14	7%
15	6.2%	15	7%
16	7.4%	16	7%
17	8.0%	17	7%
18	14.2%	18	8%
19	13.3%	19	8%
20	0.0%	20	0%
Total	100%	Total	100%
Average	13.7	Average	12.2

Note: Totals may not agree due to rounding.

To illustrate how we use the new assumption, the first row of the table indicates that for every 100 units purchased, one unit will be used in two years.

Please see the **New Unit Sales Profile Appendix** for more information on our analysis and results.

Redemption Rate

What Is the Redemption Rate Assumption and How Do We Use It?

The Redemption Rate assumption projects expected GET unit use for tuition reimbursement, covered fees, and other allowable student expenses in future years for currently purchased, unredeemed units, and new unit sales.

This assumption approximates the timing of expected cash outflows for the GET program, which impacts the present value of obligations. We also use this assumption as part of calculating the annual GET unit price.

High Level Takeaways

When enrolling in the GET program, a member must provide the expected first year of college for their beneficiary. We rely on this field when determining when units will start to be redeemed. On average, we found beneficiaries started to redeem units slightly later than the customer-reported benefit use year.

We also observed beneficiaries generally used a third of their available units each year once unit redemption began. This means the majority of units would be used within a two-year period, with 85 percent of units being used within a four-year period. Thereafter, unit use significantly slowed.

Ultimately, we decided to retain the old assumption of 20 percent of total units redeemed each year but added a delay to reflect actual unit usage later than previously assumed. This adjustment extended the average holding period by 0.5 years.

Data and Assumptions

We relied on data provided by GET staff on qualified distributions by account and fiscal year through early 2021. We excluded accounts identified as a rollover into another 529 plan or cancelled as of our latest June 30, 2020, valuation. For purposes of setting this assumption, we reorganized the data to show units used each year starting with first use.

GET staff also provided us data on changes to customer-reported benefit use year. This data showed the original and updated benefit use year by account. Additionally, we received data on identified unit transfers between accounts, including the amount transferred and beneficiary ages. We used these two datasets to inform the accuracy of the customer-reported benefit use year.

For more information, please see the **Redemption Rate Appendix**.

General Methodology

In our prior study, we examined the proportion of redeemed units to total available units for redemption to set this assumption. For this study, we have more data available and created

a new methodology based on a building block approach. Our new assumption is based on two components:

1. When first unit redemption begins based on our assumptions and the customer-reported benefit use year.
2. The rate at which units will be redeemed once unit redemption commences. (This component is consistent with the prior study.)

To determine the first component, we examined average experience through the lifetime of a unit from purchase to redemption. When a new account is created, the owner supplies a projected benefit use year based on when they expect their beneficiary to start using the units. If plans change, an account holder may update the benefit use year for a variety of personal reasons (e.g., electing to delay the start of kindergarten, moving units to another beneficiary, delaying use due to an unexpected scholarship, and/or deciding to take a “gap year”). Specifically, we reviewed the following questions:

- a. When a beneficiary reports a new or revised use year, how much on average does that initial reported use year change?
- b. When a beneficiary transfers units from one beneficiary to another, how much on average does the initial reported use year change after the transfer?
- c. When a beneficiary starts to first use units later than the initial reported use year, but does not report a revised use year, how much on average does the actual use year differ from what was reported?

To differentiate category (a) from (c), consider a student who started using units in 2020. The parents of this beneficiary initially reported a use year of 2018 when buying the units. While the student was in K-12, the parents revised the use year to 2019. However, the beneficiary started redeeming units in 2020. The difference in the reported use year (2019-2018) would fall into category (a). The difference in the final reported use year and actual unit redemption (2020-2019) would fall into category (c).

Based on this information, we approximated the average difference between initial customer-reported benefit use year and actual benefit use year (“error”). We determined an adjustment was needed to correct this difference and we assume this difference will continue for future units.

To determine the second component, we examined the actual historical proportion of total units used each year since first use, regardless of reported use year, for those who have taken qualified redemptions. To determine if there were trends in recent experience, we examined two time periods: All historical unit redemptions through March 2021 and unit redemptions beginning after 2012 through March 2021.

Additional Considerations

When setting this assumption, we also considered the following:

- ❖ Recent federal expansions on qualified 529 distributions.
- ❖ The interaction between tuition growth and customer behavior.
- ❖ Interactions between the Redemption Rate assumption and New Unit Sales Profile assumption when calculating a best estimate unit price.
- ❖ Recent experience deviating from historical trends.
- ❖ The materiality of adding more precision to our assumption to align closer with historical experience.

Please see the **Redemption Rate Appendix** for more information.

Results

The assumed benefit use year represents the first component of Redemption Rate assumption. When we consider all unit redemptions and account for reported changes in benefit use year, unit transfers, and non-reported changes to benefit use year, the actual average first unit redemption was approximately half a year later than the initial customer-reported benefit use year.

The following table outlines the estimated error due to the three distinct sources outlined in the **General Methodology** section above.

Estimated Error in Benefit Use Year Assumption <i>(in Years)</i>	
(a) Reported Changes to Benefit Use Year	0.32
(b) Unit Transfers	0.18
(c) Non-Reported Changes to Benefit Use Year	0.19
Total	0.69

As noted above, we apply this assumption when calculating the price for new units and when determining the expected program obligations of previously purchased and currently unredeemed units (“existing units”). We noted that new unit purchases are expected to have a higher overall error in the customer-reported benefit use year than existing units near redemption. This is because unit transfers and changes to customer-reported benefit use years can occur over the lifetime of an account. A newly purchased unit would have a longer assumed lifetime than an existing unit. We took this relationship into account and the fact that we apply the assumption to both new and existing units when determining our final assumption for this component. Ultimately, we selected an assumed additional half year – instead of something higher and closer to historical data – for when beneficiaries start redeeming their units.

DEVELOPMENT OF ASSUMPTIONS – Redemption Rate

For the second component of this assumption, the redemption rate distribution upon first unit use, we observed high rates of unit use early followed by a gradual decline. On average, we found actual unit redemption happened over three years. As an illustration, the following table outlines the proportion of actual unit use for the first eight years.

Redemption Rate Assumption Upon First Unit Use	
Redemption Year	Actual Use of Total Units
1	33%
2	22%
3	17%
4	13%
5	4%
6	2%
7	1%
8	1%

For this component, we selected a simplified assumption of 20 percent of total unit use every year for five years. This simplified assumption has the same average unit redemption period of three years as historical experience.

Combining the two components together, we arrive at our new assumption.

Old Redemption Rate Assumption		New Redemption Rate Assumption	
Redemption Year	Rate	Redemption Year	Rate
1	20%	1	20%
2	20%	2	20%
3	20%	3	20%
4	20%	4	20%
5	20%	5	20%
Average	3	Unit Use Delay*	0.5
		Average	3.5

**Not applied to accounts that have started redeeming their units.*

Please see the **Redemption Rate Appendix** for more information on our analysis and results.

Miscellaneous Unit Change

What Are these Assumptions and How Do We Use Them?

The Miscellaneous Unit Change assumptions represent a set of assumptions corresponding to annual unit distributions and unit losses of outstanding units for reasons other than qualified unit redemption. It includes account changes due to refunds, rollovers into other 529 programs, and changes to custom monthly contract agreements.

We do not currently have any assumptions in the GAVR that reflect these types of future unit distributions. For purposes of this experience study, we analyzed historical data on these corresponding unit distributions to assess their materiality and possible inclusion of assumptions in our model (please see the separate **Redemption Rate** section within this report for details on that assumption).

To clarify what these assumptions represent, we split the unit distributions and losses into two subcategories: Purchased and Unpurchased.

Purchased Units

The Purchased Unit category represents unit distributions due to account refunds and rollovers to other 529 programs. The outflowing units have been *purchased* and are awaiting distribution at the expected use year. We studied how many units and when they might exit the program by refund or rollover.

Unpurchased Units

The Unpurchased Unit category represents unit losses as a result of changes to custom monthly contracts through payment defaults, customer requested contract conversions, and other contract changes (downgrades). The lost units correspond to the difference between the units purchased up to the point of the contract change and the *unpurchased* units had the contract been completed.

For more information on the different types of unit loss for reasons other than qualified unit redemptions, see **Definitions**.

High Level Takeaways

We assessed the materiality of including assumptions for non-redemption purchased unit distributions and unpurchased unit losses using historical data to approximate assumptions for such unit distributions/losses. Based on that analysis, we chose not to include these assumptions or the required additional modelling complexity in our valuation. We will continue to assess these assumptions in future experience studies and may include them in a future actuarial valuation.

Based on our analysis, we would expect a small increase to funded status and a decrease to the liability if we included assumptions for refunds and rollovers in our model. We base this expectation on the program's current key assumptions: Tuition growth and the assumed

rate of investment return. If these key assumptions change, such that the long-term rate of investment return exceeded the long-term assumed tuition growth, we would expect a small decrease to funded status if we included assumptions for refunds and rollovers.

Also based on our analysis, we would expect an immaterial impact to funded status if we included assumptions for defaults, conversions, and downgrades in our model.

Data and Assumptions

We relied on data provided by GET staff on refund and rollover distributions, and custom monthly contract changes by account and fiscal year through early 2021. We relied on this data and prior GET actuarial valuation data for the purposes of assessing the materiality of these assumptions.

See the **Miscellaneous Unit Change Appendix** for additional details about the data.

General Methodology

To assess the materiality of these types of unit distributions, we modeled the future impact of purchased unit distributions and unpurchased unit losses on our actuarial valuation. We used a simplified model to estimate these impacts.

- ❖ For purchased units, we assumed a certain annual percentage of outstanding units would be distributed through refunds and rollovers. On average, we would expect these to occur earlier than each account's stated use year and in a single distribution.
- ❖ For unpurchased units, we similarly assumed a certain annual percentage of unpurchased custom monthly contract units would no longer be bought. These unpurchased unit losses are due to payment default, customer request account conversions, or customer requested contract downgrades. In our current actuarial valuation model, the loss of these unpurchased units results in a reduction in the program's obligations as well as a reduction in the present value of future contract payments (the loss of receivable program assets).

We set these preliminary assumptions based on actual historical data for applicable unit distributions/losses. We aggregated historical valuation data to determine the approximate annual percentage of units that were either distributed or lost due to a change in expected contract purchases. Historical data provided by GET staff corresponding to each distribution type and custom monthly contract change helped to inform our assumption selection. For refunds and rollovers, we also used the historical data from GET to calculate the approximate difference between when units were distributed compared to their expected use year. These assumptions do not represent a best estimate and were only used for the purpose of assessing materiality.

We reviewed the impact to the [2020 GAVR](#) funded status as our measure of materiality.

Definitions

In this section, we define the account changes that fall under the Purchased and Unpurchased subcategories.

Purchased Units

- ❖ **Refunds** – A customer requested account change that converts the account’s outstanding units to cash at the current unit payout value and returns that value to the customer.
- ❖ **Rollovers** – A customer requested account change that converts the account’s outstanding units to cash at the current unit payout value and transfers that value to another qualified 529 college savings account.

Unpurchased Units

- ❖ **Defaults** – An unexpected end to customer payments for custom monthly contract units. Any prior payments are automatically converted to lump-sum unit purchases at the unit price when the payments were made. No future units are expected to be purchased under the contract and all future customer payments for that contract cease.
- ❖ **Conversions** – A customer requested account change that ends customer payments for a custom monthly contract. The requested change converts the account’s prior payments to lump-sum unit purchases at the unit price when the payments were made. No future units are expected to be purchased under the contract and all future customer payments for that contract cease.
- ❖ **Downgrades** – A customer requested account change that modifies the terms of an existing custom monthly contract. The requested account change can extend or shorten the length of the contract, require more or less in terms of a monthly payment or reduce the number of units purchased.

Results

Based on our analysis, we chose not to add assumptions or methods to our valuation to model annual unit distributions and losses due to refunds, rollovers, defaults, conversions, or downgrades.

Our materiality assessment showed minimal change in the funded status due to these unit distributions and losses, individually and in combination. Based on our analysis, we would expect less than half of a percent increase to the funded status if we included all assumptions in our model. We determined the additional complexity required to accurately incorporate the assumptions in our valuation software would not produce materially more accurate results in funded status.

Please see the **Miscellaneous Unit Change Appendix** for more information on our results.

APPENDICES



Tuition Growth

Methodology

Review of Old Approach

The COI under our old approach is limited to two funding sources: GF-S and Tuition Fee Revenue. Specifically, we assumed up to two years of known tuition growth rates, followed by a period of mean reversion toward our previous long-term Tuition Growth assumption. The typical annual assumption took the following format.

Old Tuition Growth Assumption Format	
FY	Tuition Growth Assumption
Year 1	Current Tuition Policy – Enacted Rates
Year 2	Current Tuition Policy – Enacted Rates
Year 3-8	Mean Reversion Period – Smoothed Short-Term Rates
Year 8+	Long-Term Tuition Growth

During the period of mean reversion, we assumed whether the percentage of funding for the COI that comes from the GF-S will change and how many years it will take for the full change to occur. Under the old approach, any assumed decrease/increase in the percentage of funding that comes from the GF-S is largely offset by assumed increases/decreases in future tuition growth rates (tuition fee revenue).

In our review of the old approach, we found that current tuition policy has persisted longer than we expected, and correspondingly, the percentage of funding from GF-S was higher than expected. This resulted in persistent actual tuition growth that was lower than what we expected. While a relationship exists between GF-S funding and tuition growth, forecasting their change is a challenging exercise. UW's funding sources are not confined to our simplified two-source model and the Legislature has direct oversight on actual growth in rates of tuition. With these limitations in mind, we took a new approach to the Tuition Growth assumption.

Outline of New Approach

Under the new approach, we use an assumption-setting framework that relies on current tuition policy and an assumed long-term Tuition Growth assumption.

Under the framework, we now assume up to four years of current tuition policy. This new approach is consistent with the legislative requirement to adopt a four-year balanced budget each biennium.

As discussed in the **General Methodology** section, we no longer forecast changes to the percent of assumed funding from sources that fund the COI. Instead, under our new methodology, we now assume (after the four years of current law tuition policy) the sources that fund the COI remain a constant percentage of the COI. Under that assumption, tuition growth would match the growth of the COI.

To set and update our new long-term assumed tuition growth rates we:

- ❖ Reviewed the historical growth in the COI.
- ❖ Identified the core components or “building blocks” of growth in the COI.
- ❖ Reviewed impacts of current law tuition policy.
- ❖ Considered expectations for the future.

We reviewed historical growth in the COI to understand how those costs have changed over time and to identify the components of its growth. We assume the sources that fund UW’s Core Budget (what we consider to be the COI) remain a constant percentage of the COI. That is, we assume each source maintains its relative share of the budget. For the purposes of this analysis, we limited those sources to include:

- ❖ The General Operating Fund (GOF), consisting of the GF-S appropriation and tuition operating fee revenue, and;
- ❖ The Designated Operating Fund (DOF), consisting of various smaller funds.

Historically, the GOF has made up about 70 to 75 percent of the total COI. *Under this approach, we inherently assume that the long-term COI inflation is the same as the long-term growth in tuition.*

Two aspects comprise the COI growth—higher education price inflation and utilization growth. We divided these into four “building blocks” to develop our long-term Tuition Growth assumption. The “building block” method requires us to determine which components (blocks) comprise the total assumption and to make an estimate for each component. We then combine the estimated components to arrive at a best estimate for the assumption.

We also consider the impact of current law tuition policy when setting and adjusting the long-term Tuition Growth assumption. Generally speaking, persistent UW core budget shortfalls/excesses that are inconsistent with price inflation of the COI, may result in upward/downward pressure on long-term tuition growth.

While historical information is informative, ultimately, we use the long-term Tuition Growth assumption to model expected future outcomes. We therefore set our assumption with expectations for the future in mind.

Like our old approach, the new approach assumes a reversion to the long-term Tuition Growth assumption. Under the framework, this reversion occurs in year five, after the four year select period for current tuition policy. In year five, and for all years thereafter, we assume the long-term tuition growth as shown in the following table. (Note that the select period could be one year shorter depending on the given year of the state’s biennial budget cycle.)

New Tuition Growth Assumption Format	
FY	Tuition Growth Assumption
Year 1	Current Tuition Policy – Enacted Rates
Year 2	Current Tuition Policy – Enacted Rates
Year 3	Current Tuition Policy – Expected Rates
Year 4	Current Tuition Policy – Expected Rates
Year 5+	Long-Term Tuition Growth with Adjustments

Additional Considerations

(1) Cost of Instruction

We reviewed the annual growth in UW’s Core Operating Budget since 2015, when tuition policy changed, and compared it to the growth in the HEPI.

COI Growth Compared to HEPI Growth					
School Year	Core Budget*	COI Growth	FY	HEPI**	HEPI Growth
2014-15	\$1,194,236,000		2014	306.7	
2015-16	\$1,262,768,000	5.74%	2015	312.9	2.02%
2016-17	\$1,301,125,000	3.04%	2016	317.7	1.53%
2017-18	\$1,339,314,000	2.94%	2017	327.4	3.05%
2018-19	\$1,407,984,000	5.13%	2018	336.1	2.66%
2019-20	\$1,482,061,000	5.26%	2019	346	2.95%
2020-21	\$1,521,777,000	2.68%	2020	352.7	1.94%
Average Annual Growth		4.12%			2.36%

*Expected budget for the upcoming school year. Includes GF-S, Tuition Fee Revenue, and DOF funding sources.

**HEPI values correspond to the fiscal year end June 30.

We believe the COI grows by price inflation and utilization growth. Price inflation can be thought of as growth in the cost of a “basket of goods”. In this case, that basket of goods is the higher education experience and accompanying degree. Utilization can be thought of as the cost associated with using more/less of the basket of goods. In this case, more/fewer students purchasing education services at UW. We assume growth in utilization, so sustained growth greater/less than our assumed growth would lead to higher/lower COI growth over the long term.

The growth in the HEPI approximates general price inflation in higher education and should model the COI price inflation component.

To illustrate, if we removed utilization from the growth in the COI at UW, we would expect to see growth similar to that of the HEPI if UW’s funding sources are keeping pace with inflation. The following table shows that the growth in UW’s core budget per student FTE has kept pace with average annual higher education price inflation over the period we studied.

COI Growth Compared to HEPI Growth Excluding Utilization					
School Year	Student FTEs	Core Budget per FTE	COI Growth	Fiscal Year	HEPI Growth
2014-15	54,865	\$21,767		2014	
2015-16	55,972	\$22,561	3.65%	2015	2.02%
2016-17	56,986	\$22,832	1.20%	2016	1.53%
2017-18	58,174	\$23,023	0.83%	2017	3.05%
2018-19	59,521	\$23,655	2.75%	2018	2.66%
2019-20	59,675	\$24,836	4.99%	2019	2.95%
2020-21	60,861	\$25,004	0.68%	2020	1.94%
Average Annual Growth			2.34%	2.36%	

Since budget growth outpaces price inflation alone and because we assume the relative share of the COI funding sources remain constant overtime, we believe the cost of the growth in utilization will impact overall COI growth and therefore future tuition growth.

Based on our study of historical COI growth, we identified four building blocks for use in setting the long-term Tuition Growth assumption. These building block components are national and regional inflation, along with higher education inflation, and the utilization growth rate.

In terms of assumptions, we set a long-term Tuition Growth assumption only; however, we analyzed each of the components and the relationship between them.

(2) Impacts of Current Law Tuition Growth Policy

As noted above, if we assume that the individual COI funding sources remain a constant percentage of the total COI, we expect tuition growth rates will match the growth of the COI. Legislative tuition growth policy can apply a constraint on the source of funds coming from resident undergraduate tuition. If that constraint limits the growth of dollars required to fund the COI from resident undergraduate tuition, then any shortfall must be offset by increases in the other sources of COI funding.

If UW is unable to fully offset any tuition fee revenue shortfalls with increases from other sources, we would expect to see UW's budget—exclusive of utilization increases—begin to fall short of the price inflation experienced by the institution. If that occurs, we believe that would create a source of higher expected long-term tuition growth.

To illustrate, consider the following hypothetical situation. Let's assume tuition fee revenue accounts for 50 percent of the COI, the GF-S appropriation accounts for 25 percent, and other funds (DOF) account for the remaining 25 percent. Let's further assume that the total growth in the COI increases by 3 percent annually. If the share of each remains constant, we would expect tuition fee revenue to grow by 3 percent as well.

Hypothetically, if constraints on tuition growth produce overall COI shortfalls, other funding sources may be able to offset those shortfalls. As the tuition fee's share of the COI decreases

below 50 percent, the shortfall is picked up by other funding sources such that the institution maintains total budget growth consistent with price inflation, in this hypothetical case, 3 percent. In this scenario, the funding sources (other than tuition fee revenue) are growing by more than 3 percent.

However, if we assume the GF-S appropriation and the other funds grow consistent with price inflation, then the funding shortfall produced by the sustained lower than expected tuition growth rates would not be picked up by another funding source. In this case, tuition fee revenue would account for under 50 percent of the COI while the other sources maintain their combined 50 percent share.

We believe this latter scenario would put pressure on future long-term tuition growth. For example, to make up for the cumulative shortfall, future long-term tuition growth might increase higher than expected. Historically, this has materialized through sustained tuition growth above higher education price inflation and through short periods of spiking tuition rates.

For this experience study, we analyzed recent UW budget information (for reference, see the tables in the previous sub-section, **Cost of Instruction**) and considered whether an adjustment to our long-term Tuition Growth assumption was necessary. Because we found that UW's Core Budget growth per FTE has generally kept pace with average annual higher education inflation over the period we studied, we did not make an adjustment. However, this relationship may not hold in the future, so when setting the annual Tuition Growth assumption under our new framework, we will consider adjustments (if any) to the assumption based on the relationships described in this section.

Results

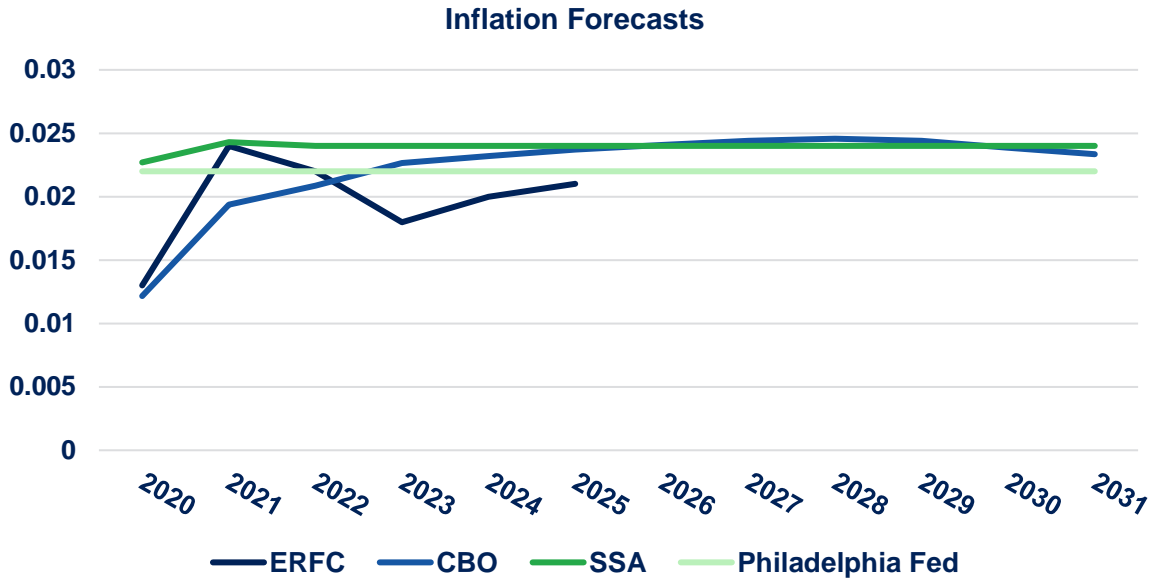
(1) Expectations for the Future – Long-Term Tuition Growth

To set the final long-term Tuition Growth assumption, we considered our expectations for the future and applied that context to each of the four building blocks².

i. National inflation forecasts.

Generally, short-term national inflation forecasts suggest an expected rate between 2.00 percent and 2.50 percent for the next 10 years. This period is reasonably consistent with the average period we expect to apply this assumption. That is, the liability duration of GET program for existing, unredeemed units and the expected duration of new unit sales. We selected a rate of 2.25 percent for national inflation.

²In our *Economic Experience Study* (EES), we study National Inflation Forecasts and the Regional Adjustment, the first two building blocks, as they relate to the inflation assumption used for the state's pension system. The assumption studied and selected for the pension system is based on a different time horizon than that of the GET program. Please see the EES report for further details.



ii. **Regional Adjustment**

The GET unit payout value is based on the highest annual resident undergraduate tuition at a Washington State public university or college. We therefore include a regional adjustment to the underlying expected rate of national inflation. We based this adjustment on the difference between historical national inflation (CPI-U) and historical regional inflation (CPI-U STB), which are studied on a calendar year basis. We expect this relationship to persist in the future but will continue to monitor it during future experience studies. We selected a regional inflation adjustment of 0.40 percent.

CPI Inflation		
Year	US City	STB
2006	3.23%	3.70%
2007	2.85%	3.88%
2008	3.84%	4.20%
2009	(0.36%)	0.58%
2010	1.64%	0.29%
2011	3.16%	2.68%
2012	2.07%	2.53%
2013	1.46%	1.22%
2014	1.62%	1.84%
2015	0.12%	1.36%
2016	1.26%	2.21%
2017	2.13%	3.05%
2018	2.44%	3.21%
2019	1.81%	2.54%
2020	1.23%	1.69%
Average Annual Growth		
5-Year	1.77%	2.54%
10-Year	1.73%	2.23%
15-Year	1.89%	2.33%

iii. Higher Education Adjustment

In addition to a regional inflation adjustment, higher education institutions experience costs at a different rate than the more generalized economy. To account for this difference, we include a higher education adjustment based on the difference between historical national inflation (CPI-U) and historical national education inflation (HEPI), which are studied on a fiscal year basis. We expect this relationship to persist in the future but will continue to monitor it during future experience studies. We selected a higher education inflation adjustment of 0.60 percent.

National HEPI Inflation		
Year	CPI*	HEPI
2006	3.79%	5.11%
2007	2.61%	2.84%
2008	3.70%	4.96%
2009	1.39%	2.23%
2010	0.96%	0.90%
2011	2.04%	2.34%
2012	2.93%	1.66%
2013	1.64%	1.57%
2014	1.57%	2.99%
2015	0.71%	2.02%
2016	0.71%	1.53%
2017	1.81%	3.05%
2018	2.27%	2.66%
2019	2.06%	2.95%
2020	1.63%	1.94%
Average Annual Growth		
5-Year	1.69%	2.42%
10-Year	1.73%	2.27%
15-Year	1.98%	2.58%

**We relied on the CPI values as shown in the 2020 Commonfund HEPI report.*

While we believe this comparison best captures the inflation adjustment by this building block, we did review two alternative methods for this adjustment—an adjustment based on the difference between national CPI and national HEPI for public universities, and an adjustment based on the regional HEPI (Pacific) and regional inflation (CPI-U STB). Both of the alternative methods would have yielded a similar adjustment.

iv. Utilization

The first three building blocks contribute toward the price inflation aspect of the COI. The other aspect of the COI is utilization, which makes up the fourth and final building block of the long-term Tuition Growth assumption.

In this context, utilization represents the rate at which higher education services are used. To estimate this building block, we observed its share of historical COI growth. Under that historical analysis, utilization growth contributes between approximately 1.25 and 1.75 percent to the total COI growth rate during the observation period. The range in observed utilization growth rate corresponds to using either the HEPI – Pacific or the HEPI – National indices, respectively, for that analysis. We also observed historical

growth in UW student FTEs and relied on student FTE forecast information provided by UW for our analysis. The following table shows historical UW student FTE growth.

Historical Student FTE Growth		
School Year	Student FTEs	FTE Growth
2014-15	54,865	
2015-16	55,972	2.02%
2016-17	56,986	1.81%
2017-18	58,174	2.08%
2018-19	59,521	2.32%
2019-20	59,675	0.26%
2020-21	60,861	1.99%
Average Annual Growth		1.74%

Forecasts provided by UW expect FTE growth rates to decline from current levels during the next decade but remain positive near 1 percent. For supporting information, we calculated the statewide population growth rate for typical college aged residents over the next fifteen years, 2021 through 2035. Washington State residents ages 18 through 22 are expected to grow by approximately 0.60 percent over this fifteen-year period. We relied on forecasts provided by OFM to calculate this estimate.

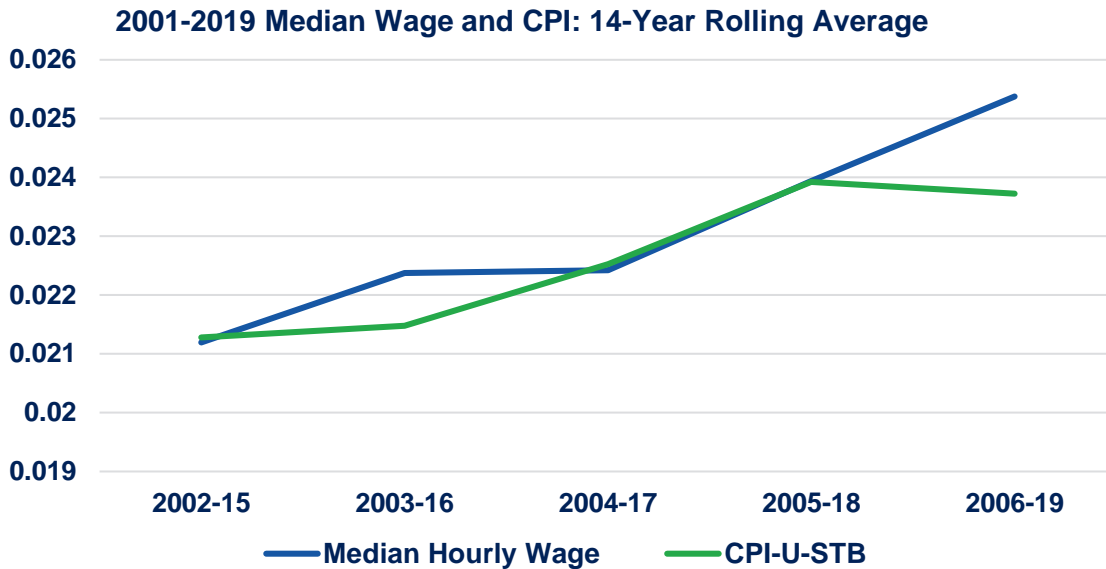
Based on historical utilization provided by UW, and with consideration for their future student population growth expectations, we selected 0.75 percent growth as our utilization adjustment.

Combining all four building blocks/adjustments, we arrive at a long-term Tuition Growth assumption of 4.00 percent. However, before we concluded our assumption setting process, we also considered the impact of current law tuition policy on long-term tuition growth rates. That is, the potential impact on long-term tuition growth if the current law tuition policy were to continue indefinitely and exceed our assumed growth rate.

(2) Current Law Tuition Policy

As noted in the **Additional Considerations** section, under current law tuition policy, annual growth in the resident undergraduate tuition rate is limited by the rolling average 14-year growth in the median hourly wage of Washington State.

Historically, the state's median wage tracks closely with, although slightly higher than, the CPI-U STB region.



Relying on building blocks (i) and (ii) as described in this **Appendix** (national inflation forecasts and historical regional inflation) we would expect a regional inflation forecast of approximately 2.65 percent (= 2.25 percent national inflation forecast + 0.40 percent regional inflation adjustment). This regional forecast is significantly less than our long-term Tuition Growth assumption, which includes adjustments for higher education price inflation and utilization [building blocks (iii) and (iv)]. Assuming that the state median wage continues to track closely with the regional inflation in the future, as it has historically, we would not expect the state median wage to consistently outpace higher education price inflation or the assumed growth in long-term tuition. As a result, we made no upward adjustment to our long-term Tuition Growth assumption for current law tuition policy.

Final Assumption

Based on our analysis, we set the long-term tuition growth at 4.00 percent using the building blocks in the following table.

Long-Term Tuition Growth Building Blocks		
Price Inflation		
Block (i)	National Inflation Forecast	2.25%
Block (ii)	Regional Inflation Adjustment	0.40%
Block (iii)	Higher Education Inflation Adjustment	0.60%
Utilization		
Block (iv)	Higher Education Services Utilization	0.75%
Long-Term Tuition Growth Assumption		4.00%

New Unit Sales Profile

Data and Assumptions

For this assumption, we relied on data provided by GET staff on new unit sales by account, reported first payout or unit redemption year, and year of purchase. This data either groups unit sales by the enrollment year in which a customer purchased lump sum units or the year in which a customer enrolled in a custom monthly contract. The data provided historical information through early 2021. For the purpose of this study, we focused only on unit purchases made from FYs 2010 through 2020.

We made certain exclusions to the data. We excluded FYs 2015 and 2016 when unit sales were suspended and purchaser who had a holding period of less than two years or greater than twenty years. We also excluded account holders that experienced a custom monthly contract to lump sum conversion. As the name implies, the custom monthly contract is converted into a series of lump sum purchases over time. Each custom monthly contract payment acts as a lump sum purchase of units at the unit price when the contract payment was made. Since this change is made retroactively, we excluded it in our analysis of true new unit sales.

We examined the impacts of excluding outliers in the data, which make up roughly 1 percent of sales, and noted no material change in the results.

Methodology

We created a new unit sales profile based on the expected holding period of each future unit. We begin our process by examining historical data. For purposes of setting this assumption, we determined the proportion of units at each holding period length. For example, following is a table of unit sales in FY 2020. Please note, not all unit sales are included in this table as described in the prior section of this appendix.

2020 Unit Sales		
Holding Period (Years)	Unit Sales	Percent of Total
2	6,992	1%
3	16,059	3%
4	15,728	3%
5	17,383	4%
6	22,271	5%
7	24,835	5%
8	27,816	6%
9	28,256	6%
10	24,729	5%
11	29,607	6%
12	27,363	6%
13	35,233	7%
14	33,572	7%
15	29,312	6%
16	31,583	7%
17	33,951	7%
18	42,860	9%
19	23,552	5%
20	8	0%
Total	471,111	100%

Note: Totals may not agree due to rounding.

When selecting our new assumption, we examined the average proportions of holding periods for new unit sales over the most recent three years of data and considered expectations for the future.

In setting this new assumption, we determined that the prior level of detail is not required because we don't consider finance charges in the calculation of the best estimate unit price. For ease of comparison, we converted our old assumption format into the new assumption format. The old assumption is outlined in the following table.

Old Assumption—Prior Format					
Length In Program (Years)	Percent Lump Sum	Lump Sum Units Purchased	Percent Monthly Payment Plan	Monthly Payment Plan Units Purchased	Length of Monthly Payment Plan (Months)
2	0.2%	94	0.0%	0	0
3	1.6%	78	0.2%	76	25
4	1.0%	77	0.4%	79	37
5	1.5%	82	0.7%	78	48
6	1.9%	80	0.9%	101	59
7	2.2%	89	1.2%	93	69
8	2.7%	99	1.3%	106	80
9	2.9%	93	1.4%	113	92
10	3.1%	84	1.5%	110	102
11	3.0%	97	1.7%	108	114
12	3.3%	87	1.8%	119	125
13	3.6%	89	1.7%	120	132
14	5.0%	79	2.5%	114	144
15	4.8%	62	2.2%	111	156
16	5.5%	63	2.6%	115	163
17	6.5%	56	2.7%	121	175
18	12.0%	59	4.2%	123	190
19	8.3%	76	3.9%	133	199
20	0.0%	7	0.0%	133	112
Total	69.1%	74	30.9%	114	141

To arrive at our new assumption format, we followed this procedure:

- a. Multiplied Percent Lump Sum and Lump Sum Units Purchased.
- b. Multiplied Percent Monthly Payment Plan and Monthly Payment Plan Units Purchased.
- c. Added items a and b.
- d. Divided item c in each row by item c in the Total row.

Note that we no longer use length of monthly payment plans. Following this procedure, we arrived at our old assumption in the new format.

Old Assumption— New Format	
Holding Period (Years)	Percent of Single Unit
2	0.2%
3	1.6%
4	1.3%
5	2.0%
6	2.8%
7	3.5%
8	4.7%
9	4.9%
10	4.9%
11	5.5%
12	5.8%
13	6.0%
14	7.8%
15	6.2%
16	7.4%
17	8.0%
18	14.2%
19	13.3%
20	0.0%
Total	100%

Note: Totals may not agree due to rounding.

Additional Considerations

When setting this assumption, we examined factors that may create short- or long-term changes in new unit purchases. Here are some changes we observed in the last three enrollment periods.

- ❖ *According to GET staff, the marketing strategy of GET units has shifted to encourage customers to purchase units when the beneficiary is at a younger age.*

We did not observe lasting shifts in the proportion of unit sales to beneficiaries with longer holding periods. However, there were other program changes that may have influenced sales in the past. Going forward, we may see a higher portion of account holders with younger beneficiaries purchasing units.

- ❖ *The GET program was closed to new unit purchases during the 2015-16 and 2016-17 enrollment period.*

We excluded these enrollment years in our data. However, there may have been pent-up demand impacting the experience after sales resumed. For example, we observed the average holding period decline between the enrollment year prior to the program closing, 2014-15, and the enrollment year in which the program reopened, 2017-18.

- ❖ *In 2018, DreamAhead opened to new account holders. This included incentivized rollovers from certain GET program customers.*

With more options available, we may see certain segments of the population more interested in the DreamAhead program than the GET program. Additionally, we expect a portion of the 2018 incentivized DreamAhead rollovers to return to the GET program. These members would have shorter holding periods, on average, than new contract holders. We were informed by GET staff that these members are not tracked and would be treated like new account holders in the data.

- ❖ *In recent years, the federal government has expanded the eligibility for 529 funds to include K-12 tuition expenses, apprenticeship program expenses, and student loan repayments.*

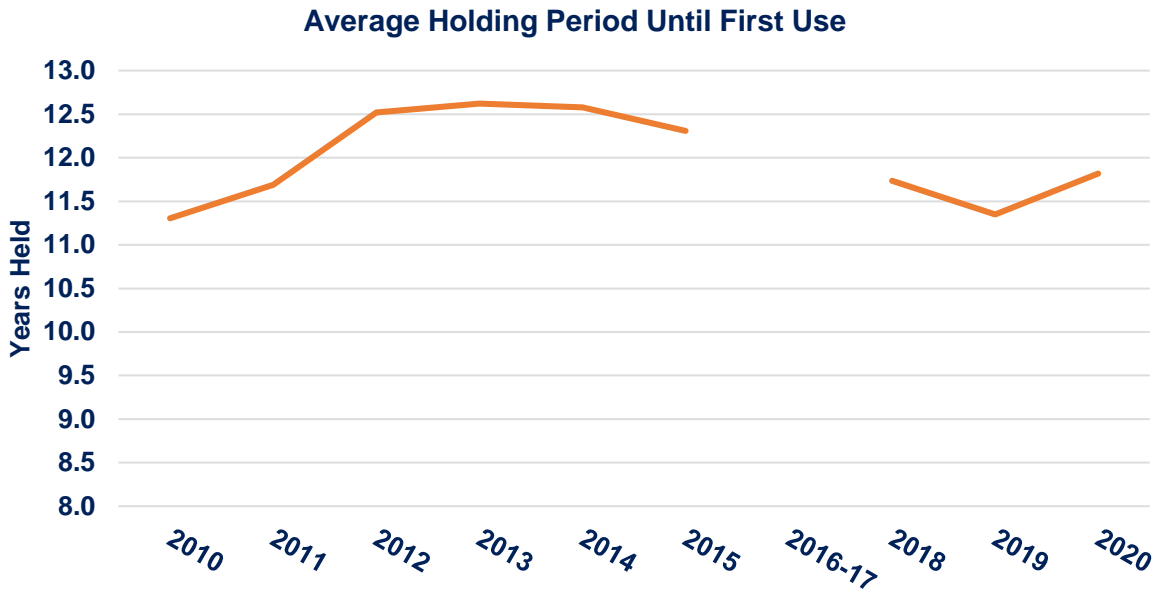
These changes will have unknown impacts on future unit purchasers. For example, it may shorten the length of time until unit redemption in the case of K-12 tuition expense.

- ❖ *The portion of unit sales made by prior account holders versus new account holders.*

Overall, we would expect purchases from prior account holders to have a shorter holding period than new purchasers because their beneficiaries are generally older. We compiled the historical percentage of unit sales composed of prior account holders to study any trends. We did observe a general trend toward more unit sales from prior account holders, but we expect this proportion to stabilize in future years. We will continue to monitor this trend in future experience studies and make future adjustment if necessary.

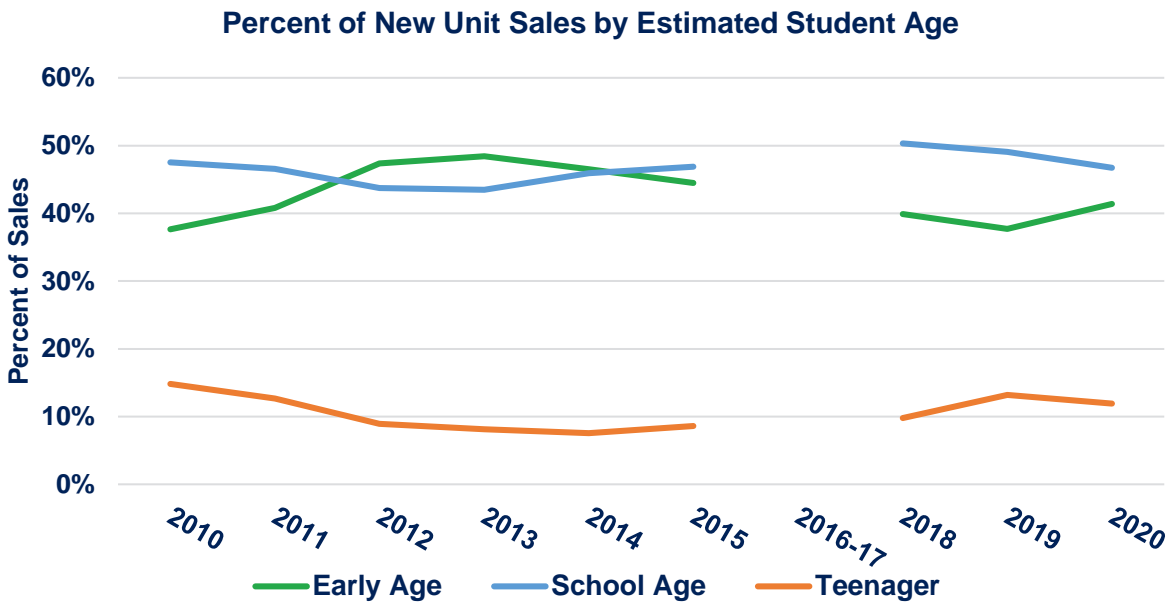
Analysis and Results

In general, we did not identify any noticeable trends indicating a consistent increase or decrease in average holding periods. There was a drop in the average holding period of new unit sales following the program closure to new sales in FYs 2016 and 2017. However, the holding period seems to be reverting to pre-closure levels.



In addition to looking at how the average holding period changed over time, we also grouped the data by estimated beneficiary age and examined any trends in the data. We classified each cohort as such:

- ❖ **Early Age** – A beneficiary with a holding period greater than 13 years.
- ❖ **School Age** – A beneficiary with a holding period between 5 and 13 years.
- ❖ **Teenager** – A beneficiary with a holding period less than 5 years.



When selecting our new assumption, we used the 2018-2020 average experience from all unit purchases as a base. From there, we made slight adjustments to simplify the assumption and extend the average holding period of a unit purchaser. We believe future unit purchasers will have a slightly longer average holding period than the last three years of data would indicate due to the GET program marketing strategies that target younger families and a reversion to holding periods seen prior to the program closure to new sales.

In summation, we applied the following steps to arrive at our new assumption:

1. **Methodology Change** – Updated our approach to include all purchasers;
2. **New Data** – Updated the three-year average to be based on the most recent purchases from 2018-2020; and
3. **Future Expectations** – Made adjustments using our professional judgement and for purposes of simplifying the assumption.

The following table outlines how the average holding period changed under each of these steps.

Average Holding Period	
Using Old Assumption	13.7
+ Methodology Change	(0.9)
+ 2018-2020 Data	(1.1)
+ Future Expectations	0.6
Using New Assumption	12.2

Note: Totals may not agree due to rounding.

APPENDICES – New Unit Sales Profile

The following tables illustrate how our old assumption compares to actual experience and our new assumption.

Old Assumption		2018-2020 Average (All Sales)		New Assumption	
Holding Period (Years)	Percent of Single Unit	Holding Period (Years)	Percent of Single Unit	Holding Period (Years)	Percent of Single Unit
2	0.2%	2	1.1%	2	1%
3	1.6%	3	2.8%	3	2%
4	1.3%	4	3.5%	4	2%
5	2.0%	5	4.2%	5	4%
6	2.8%	6	4.8%	6	4%
7	3.5%	7	5.9%	7	6%
8	4.7%	8	6.1%	8	6%
9	4.9%	9	6.4%	9	6%
10	4.9%	10	6.4%	10	6%
11	5.5%	11	6.4%	11	6%
12	5.8%	12	6.0%	12	6%
13	6.0%	13	6.6%	13	7%
14	7.8%	14	7.3%	14	7%
15	6.2%	15	6.5%	15	7%
16	7.4%	16	7.1%	16	7%
17	8.0%	17	7.0%	17	7%
18	14.2%	18	7.7%	18	8%
19	13.3%	19	4.0%	19	8%
20	0.0%	20	0.0%	20	0%
Total	100%	Total	100%	Total	100%

Note: Totals may not agree due to rounding.

Redemption Rate

Data and Assumptions

To study this assumption, we relied on a variety of data provided by GET staff. We list our source information below along with a brief explanation of how we used the information.

❖ *Qualified distributions by account and fiscal year.*

We used this data to determine the historical redemption rate distribution and the error associated with the final customer-reported benefit use year compared to actual first unit redemption. We regrouped this data to show unit redemptions since the year of first use by account. We did this by classifying the first year of unit use as year one and following subsequent years as year two, year three, year four, etc., for every account. We removed accounts identified as rollovers into other 529 plans or cancelled as of our latest June 30, 2020, actuarial valuation.

❖ *Original and current customer-reported benefit use year for account holders who requested a change.*

This data was used to help determine the average change in the customer-reported benefit use year over the lifetime of an account. We cross-referenced this dataset with the qualified unit redemption dataset to remove any account that has yet to begin redeeming units. We applied this filtering to accurately capture the historical average change to customer-reported benefit use year over the full lifetime of an account.

❖ *Unit transfers by account and beneficiary ages.*

This data was used to determine the error in customer-reported benefit use year due to unit transfers. In our analysis we used the difference in beneficiary age as a proxy for the change in benefit use year. We removed transfers to the same beneficiary and transfers that resulted in a net zero change (i.e., transfer from one account to another and then back into the original account). According to GET staff, the data provided encompasses the majority of recent unit transfers, above 90 percent, but not all due to different reporting methods.

Additional Considerations

When setting this assumption, we also considered the following:

❖ *Recent federal expansions on qualified 529 distributions.*

Within the last five years, the qualified usage of 529 funds has expanded to include K-12 tuition expenses, apprenticeship program expenses, and student loan repayments. This may impact when and for how long units are redeemed. We made no change in our assumptions or expectations for the future due to the expansion in this area but will continue to monitor this assumption for trends due to program changes.

❖ *The interaction between tuition growth and customer behavior.*

Past and future experience of when beneficiaries redeem units could be impacted by tuition growth rates. If tuition is expected to rise in the short-term, students may delay redemption of units until the final years of college to receive a higher payout rate. Due to uncertainty of future tuition growth and the long-term nature of this assumption, we decided to make no adjustments for this consideration.

❖ *Interactions between the Redemption Rate assumption and New Unit Sales Profile assumption when calculating best estimate unit price.*

The New Unit Sales Profile assumption is studied and set using the customer-reported benefit use year field. We selected a format for this Redemption Rate assumption that would not necessitate a change to our New Unit Sales Profile assumption. We could have included one of our two components from this assumption – the unit use delay – in the New Unit Sales Profile assumption. We decided against making that change so we could use the same Redemption Rate assumptions for both unit pricing and determining expected obligation for existing units.

❖ *Recent experience deviating from historical trends.*

When studying this assumption, we relied on redemption data that began with program inception. We also looked at how the assumption would change if we only included accounts that began redemptions within the ten years of most recent data. We found no material difference.

❖ *The materiality of adding more precision to our assumption to align closer with historical experience.*

We observed beneficiaries redeeming approximately a third of available units each year once redemption began. Instead, we assumed 20 percent is redeemed each year over five years for our final assumption. We considered selecting an assumption that more closely modeled historical experience and found the added precision did not lead to materially different results.

Analysis and Results

Our new assumption is based on two components:

1. **Error in Customer-Reported Benefit Use Year** – When the first unit redemption begins based on our assumptions and the customer-reported benefit use year.
2. **Redemption Rate Distribution** – The rate at which units will be redeemed once unit redemption commences.

(1) Error in Customer-Reported Benefit Use Year

To determine the first component, we examined average experience through the lifetime of a unit from purchase to redemption. Specifically, we reviewed (a) the average change in customer-reported benefit use year from initial purchase to first unit redemption, (b) the assumed impacts to average benefit use year due to unit transfers from one beneficiary to another, and (c) the average difference between final customer-reported benefit use year and actual first unit redemption.

To determine (a), we analyzed the change in customer-reported benefit use year for accounts that have started redeeming units (as outlined in the following table). We display the results weighted by number of accounts and number of units. We relied on the latter for purposes of setting our final assumption consistent with how we apply the assumption – by unit.

(a) Customer-Reported Benefit Use Year Change (Accounts with Unit Redemptions)					
Weighting	Count	Avg. Change in Years	Population	% of Population	Avg. Total Change in Years
Accounts	13,459	0.87	49,047	27%	0.24
Units	3,673,353	1.08	12,272,248	30%	0.32

As illustrated in the previous table, of the total units studied, 30 percent changed their initial reported use by just over one year on average. The other 70 percent of the population studied did not change their initial reported use year. When we consider both groups, the average change in customer-reported benefit use year is 0.32 years later than the initial benefit use year they reported upon purchase when weighted by number of units. We also considered how these results change when reviewing different time periods and did not identify any major trends.

When setting our final assumption, we noted that benefit use year changes can occur at any time during the lifetime of a contract. Furthermore, contracts are in various stages of their lifetime when we perform an actuarial valuation. If we assume a uniform distribution of the reported benefit use year changes and contracts are, on average, halfway through their lifetime, we would expect a future error of 0.16 years in the reported use year field due to (a).

Unit transfers under (b) may also occur during the lifetime of a unit and introduce an error to the initial customer-reported benefit use year. For example, if there is a consistent transfer of units from older siblings to younger siblings, we would expect the initial customer-reported benefit use year to be slightly earlier than actual experience.

Unlike customer reported benefit use year changes in (a), the data on unit transfers is limited due to a change in reporting practices. For this reason, we examined the average change by fiscal year rather than the total historical changes due to transfers, focusing on the last five years of data (2016-2020) as outlined in the following table.

(b) Transferred Units					
Fiscal Year	Unit Transfers	Avg Change in Beneficiary Ages for Transfers	Total Number of Units Outstanding	Percent of Population	Weighted Avg Change to Population Age
2016	19,559	(2.18)	17,617,656	0.11%	(0.002)
2017	76,224	(3.03)	17,424,203	0.44%	(0.013)
2018	80,541	(3.65)	16,310,453	0.49%	(0.018)
2019	58,748	(4.23)	10,418,088	0.56%	(0.024)
2020	40,692	(3.76)	10,289,070	0.40%	(0.015)
Average (2016-20)	55,153	(3.37)	14,411,894	0.40%	(0.014)

As seen in the previous table, less than 1 percent of the GET population transferred units each year. Of these transfers, the beneficiary recipient was on average approximately 3.5 years younger than the original unit holder. We use the change in beneficiary age as a proxy for the change in reported benefit use year.

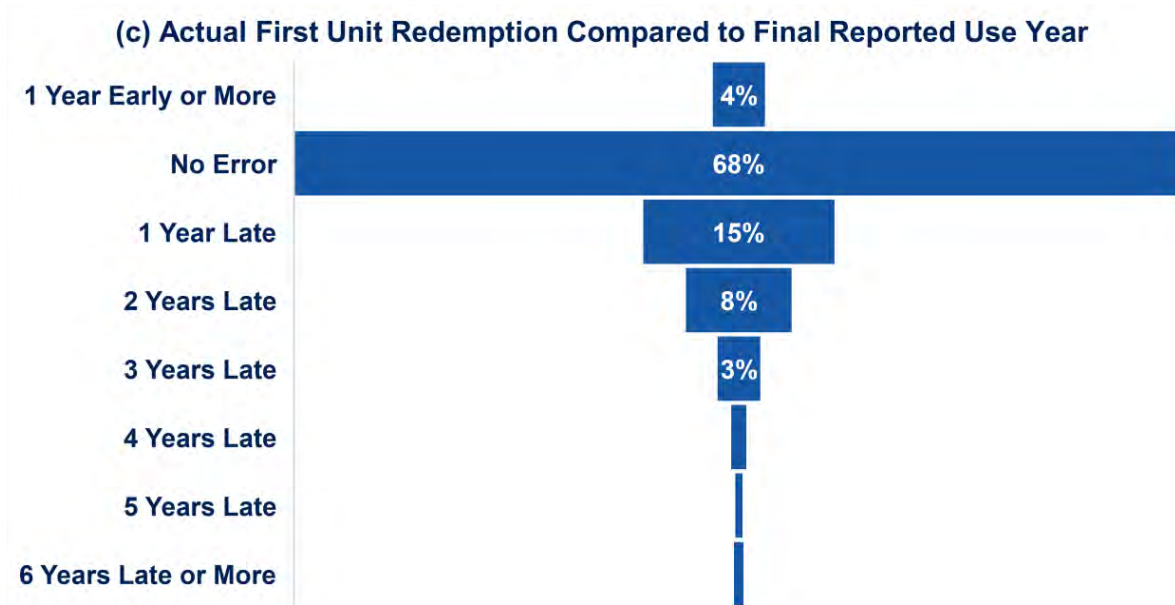
To determine the estimated total average error in benefit use year due to unit transfers over the lifetime of a unit, we relied on our New Unit Sales Profile assumption to determine the average length of time for a unit from purchase to redemption (or estimated holding period). The benefit use year changed on average 0.014 years due to unit transfers for each fiscal year studied. When multiplied over the assumed holding period of 12.23 years, this results in an expected 0.18 years as illustrated in the following table.

(b) Estimated Change to Benefit Use Year From Transfers (in Years)	
i) Average Change	0.014
ii) Est. Holding Period	12.230
Total Impact / Unit (i x ii)	0.177

Note: Totals may not agree due to rounding.

Similar to reported benefit use year changes, unit transfers can happen at any time during a contract’s lifespan. If we assume a uniform distribution of unit transfers and contracts are on average halfway through their lifetime, we would expect a future error of 0.09 years in the reported use year field due to (b).

Lastly, we examined (c) and found that on average, beneficiaries were using units roughly a fifth of a year later than reported by the customer. The chart below outlines the proportion of error observed by year weighted by total redeemed units. We also considered how these results change when reviewing different time periods and did not identify any major trends.



Combining the three sub-components, we arrive at the total historical average error in customer-reported benefit use year for a new unit.

Estimated Error in Benefit Use Year Assumption (in Years)	
(a) Reported Changes to Benefit Use Year	0.32
(b) Unit Transfers	0.18
(c) Non-Reported Changes to Benefit Use Year	0.19
Total	0.69

Noting that this historical error is for a new unit purchase, we selected a half year increase to the customer-reported benefit use year to determine the assumed benefit use year (for customers who have not started redeeming units).

(2) Redemption Rate Distribution

To study the redemption rate distribution, we examine the actual unit use by year once unit redemption begins regardless of reported use year. The result of this analysis is summarized in the following table.

Please note that the data is “right censored.” In other words, unit usage for some accounts in our data is on-going. The data only shows what occurred through March 2021 and we know some units will continue to be redeemed in the future. To determine the historical survival probability, or the probability that units will remain available for use in future years, we use a Kaplan-Meier estimate – a statistical technique that allows for incomplete data. This is reflected in the units available for use column that decreases each year as a result of both unit redemptions taking place and adjustments for right censored data.

Average Use by Year (2001—2021)				
<i>Unit Weighted</i>				
Redemption Year	Total Units Redeemed	Units Available for Use	Survival Probability	Use Rate
1	4,087,571	12,272,248	67%	33%
2	2,614,592	7,830,058	44%	22%
3	1,882,427	4,923,838	27%	17%
4	1,324,773	2,866,013	15%	13%
5	346,027	1,407,726	11%	4%
6	146,562	946,746	9%	2%
7	80,649	697,520	8%	1%
8	55,532	538,498	7%	1%
9	33,295	417,291	7%	1%
10+	N/A	N/A	0%	7%

By capping the period over which redemptions can occur at ten years, we determined the average unit is redeemed in year three.

For this component of our assumption, we selected a rate of 20 percent total unit use every year for five years. This simplified assumption has the same average unit redemption period of three years as historical experience. We considered a more precise set of redemption rates, but determined the impact on the valuation and unit price setting was not significant enough to warrant the additional complexity.

Combining the two components together, we arrive at our new assumption.

Old Redemption Rate Assumption		New Redemption Rate Assumption	
Redemption Year	Rate	Redemption Year	Rate
1	20%	1	20%
2	20%	2	20%
3	20%	3	20%
4	20%	4	20%
5	20%	5	20%
Average	3	Unit Use Delay*	0.5
		Average	3.5

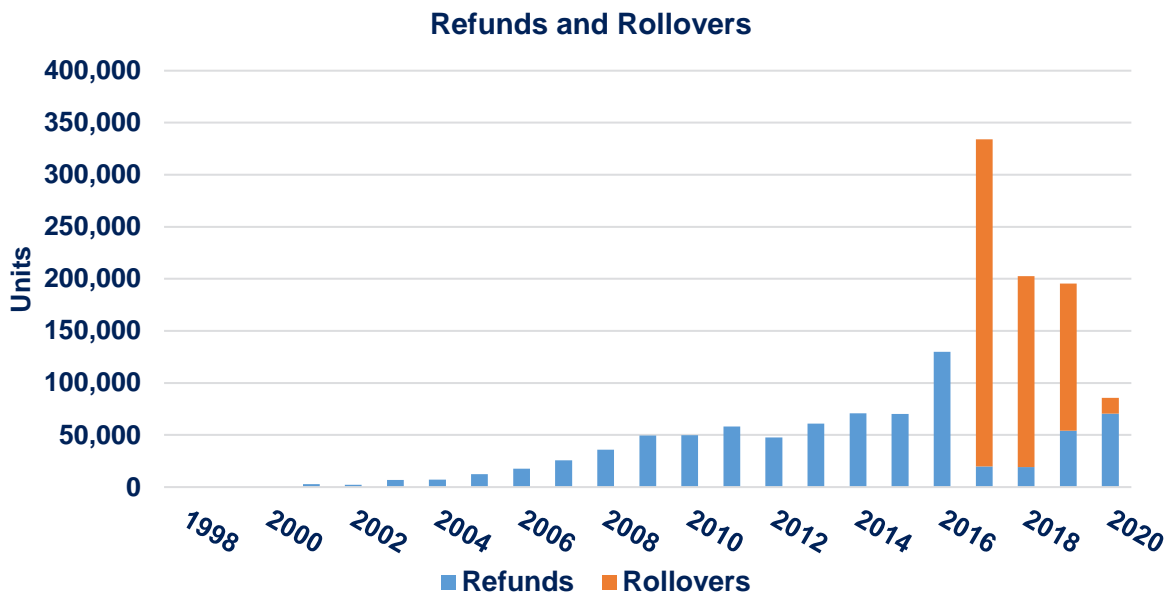
**Not applied to accounts that have started redeeming their units.*

Miscellaneous Unit Change

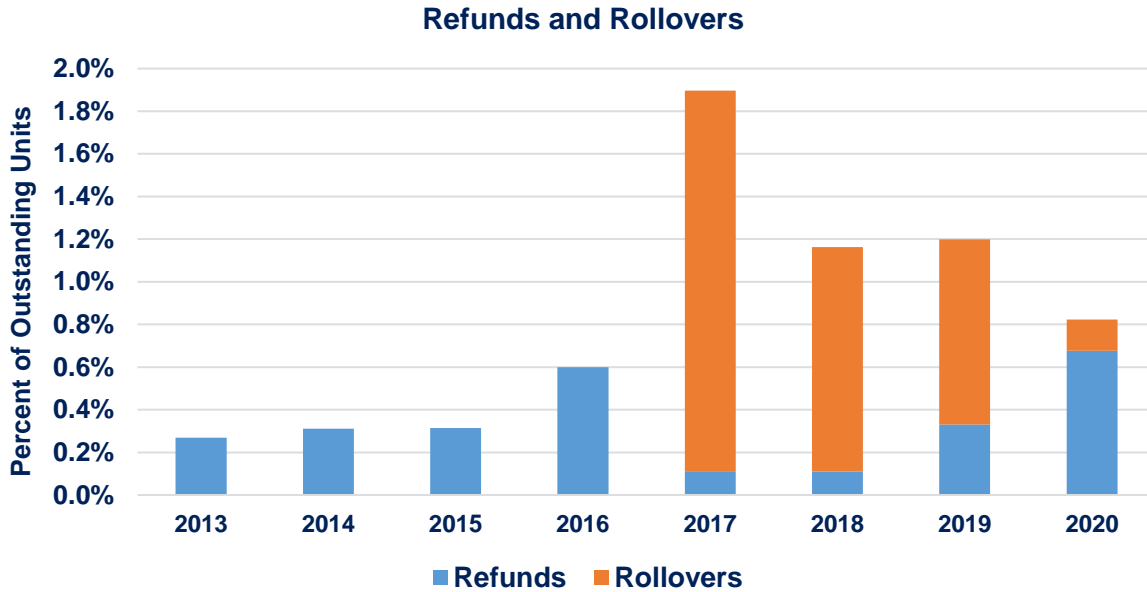
Data and Assumptions

Purchased Units

The following chart shows the historical number of units refunded and rolled over to other 529 college saving accounts. Note that for the purposes of evaluating the data and in the following charts, we excluded units refunded as a result of SB 5954 from the 2015 Legislative Session and we excluded units rolled over as a result of [Engrossed Senate Bill \(ESB\) 6087](#) from the 2018 Legislative Session.

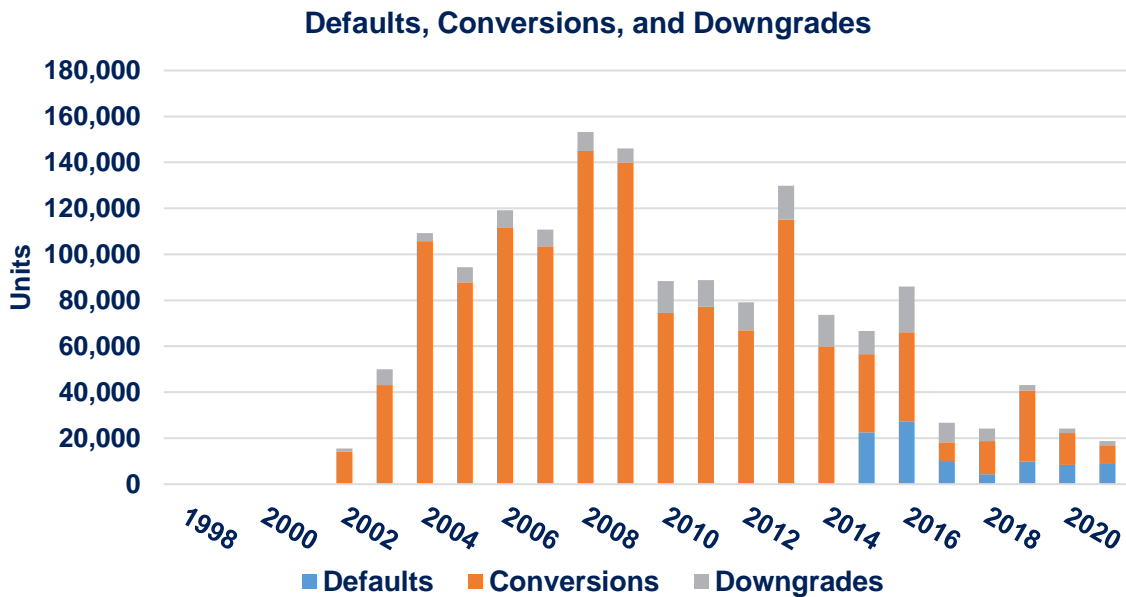


The following chart shows historical unit refunds and rollovers as a percentage of the program’s outstanding units at the beginning of each valuation year. The rollovers shown in the following chart coincide with the opening and subsequent availability of Washington’s 529 savings program, DreamAhead.

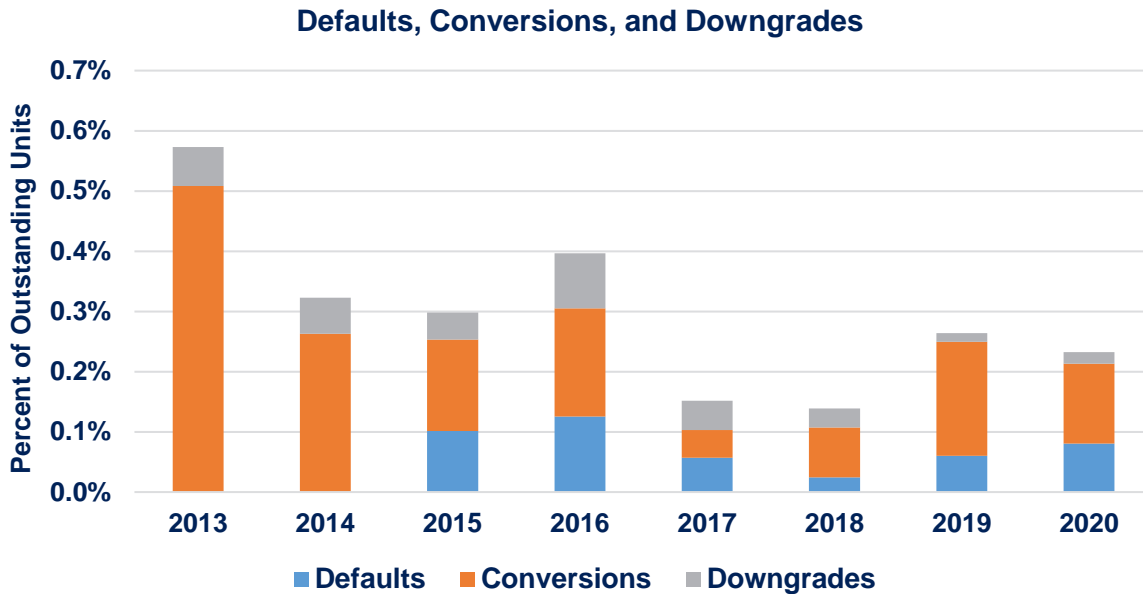


Unpurchased Units

The following chart shows the historical number of units lost due to custom monthly contract changes. Each sub-category of unit loss is represented in the chart.



The following chart shows defaulted, converted, and downgraded units as a percentage of the program’s outstanding units at the beginning of each valuation year.



Analysis and Results

Our materiality assessment showed minimal change in the funded status due to unit distributions and losses.

Purchased Units

We determined that purchased, non-redemption unit distributions—refunds and rollovers—impact the funded status based on the time gap between the actual distribution of units and the expected distribution of units. The larger the gap, the greater the potential impact. Based on historical experience (excluding incentivized refunds and rollovers³), distributions occur on average approximately 1 to 2 years earlier than typical qualified unit redemptions. We tested the impacts of using similar assumptions for distributions due to refunds and rollovers in our valuation model. This materially test resulted in a decrease to the liability and a small increase to the funded status.

Unpurchased Units

We determined that unpurchased unit losses—defaults, conversions, and downgrades—impact the funded status based on the relationship between the expected custom monthly contract receivables and the liability held for the unpurchased units. Custom monthly units not yet purchased represent both an expected asset (in the form of a receivable) and an expected liability to the program’s funded status. So, a reduction to these units has an offsetting impact on the funded status.

³For the purposes of evaluating the data, we excluded units refunded as a result of SB 5954 from the 2015 Legislative Session and we excluded units rolled over as a result of ESB 6087 from the 2018 Legislative Session.

Based on our analysis, we would expect an immaterial impact to funded status if we included an unpurchased unit loss assumption in our model because we expect the reduction to assets and liabilities is similar to the current relationship between the overall assets and liabilities of the plan as a whole.

Note that if the relationship between custom monthly contract receivables changed such that it no longer aligned with the program's funded status (or vice versa), then the impact of these unit losses could be larger and potentially material. This relationship could change if the program's key assumptions change.

Lastly, we do not believe the available data is well suited to set credible best estimate assumptions. Data for refunds and rollovers include distributions related to recent changes in state law that we do not expect to repeat in the future. While we can separate out these distributions, we also believe the laws impact typical refund and rollover behavior, making much of the recent data unreliable for the purpose of setting best estimate assumptions. Furthermore, full historical data for defaults and rollovers are not available. And lastly, due to changes in data reporting, we were unable to rely on the full historical data for defaults and rollovers for this study.

Under the program's current key assumptions—tuition growth and the assumed rate of investment return—the amount of expected asset receivables is about 30 percent greater than the amount of liability held for those same units. Similarly, the program's funded status as a whole is about 130 percent (i.e., assets are about 30 percent greater than liabilities). Since the expected receivables for the unpurchased units is about 30 percent greater the corresponding liability, and that percentage aligns with the program's current funded status, modelling a loss of those unpurchased units would result in minimal change to the funded status.

Put differently, a release of a given amount of liability for unpurchased unit losses, would simultaneously release about 30 percent more in expected receivables (reduction to valuation assets). Since the most recently measured funded status is about 130 percent (130.9 percent as of the June 30, 2020, GAVR), the resulting impact to the program's funded status is minimal.

As the premium increases/decreases (the amount by which receivables exceed the liability), the greater/lesser the reduction to valuation assets for a given amount of liability that is released when these losses occur.

Removed Assumptions

We removed multiple assumptions from our study that were included in the *2015 Experience Study*. Below we list the removed assumption, the purpose of the assumption, and why it is no longer included in this study.

Assumptions on Different Study Cycle

Investment Rate of Return

We use the assumed investment rate of return to project the growth in the GET fund assets and to determine the present value of future program obligations, receivables, and expenses. We also use this assumption when calculating the unit price.

This is an economic assumption which typically requires more frequent reviews than demographic or behavioral assumptions. It is also highly material to our valuation results and unit price analysis. Due to these factors, we study this assumption annually as part of our actuarial valuation.

Short-Term Tuition Growth

We use the assumed rate of tuition growth to project the growth in program obligations due to changes in the cost of tuition. We also use this assumption when calculating the unit price.

Similar to Investment Rate of Return assumption, short-term Tuition Growth requires more frequent reviews than other demographic or behavioral assumptions in this study. It can be very sensitive to current tuition policy and the economic environment. Due to these factors, we study this assumption annually as part of our actuarial valuation.

Please see the most recent GAVR for our Investment Rate of Return and short-term Tuition Growth assumptions.

Discontinued Assumptions

In the time since the prior experience study, we (1) discontinued producing projections that include estimated new unit sales (i.e., open-group projections) for the GET program, and (2) began relying on GET staff to provide expected future program/administrative expenses under a closed plan scenario. Due to these changes, we no longer rely on assumptions about future program growth and program expenses.

Please see the most recent GAVR for more information on our full methodology for determining the present value of program obligations and the expense component of the unit price. We list below the assumptions removed from this study due to these changes.

Budget Growth

The Budget Growth assumption represents the annual rate at which future GET program expenses grow. We previously used this assumption to calculate the expense portion of the unit price and to estimate the present value of certain future program expenses.

Beneficiary Population Growth

The Beneficiary Population Growth assumption represented the rate of annual growth in the expected number of new unit purchases. This was previously used in our open-group projections and as part of estimating future program expenses.

Projected Unit Sales

We previously projected the number of units sold in the future to help us estimate the future value of the GET fund and the program's obligations in our open-group projections. Projected unit sales also previously impacted current and future unit prices through the expense component in the unit price.

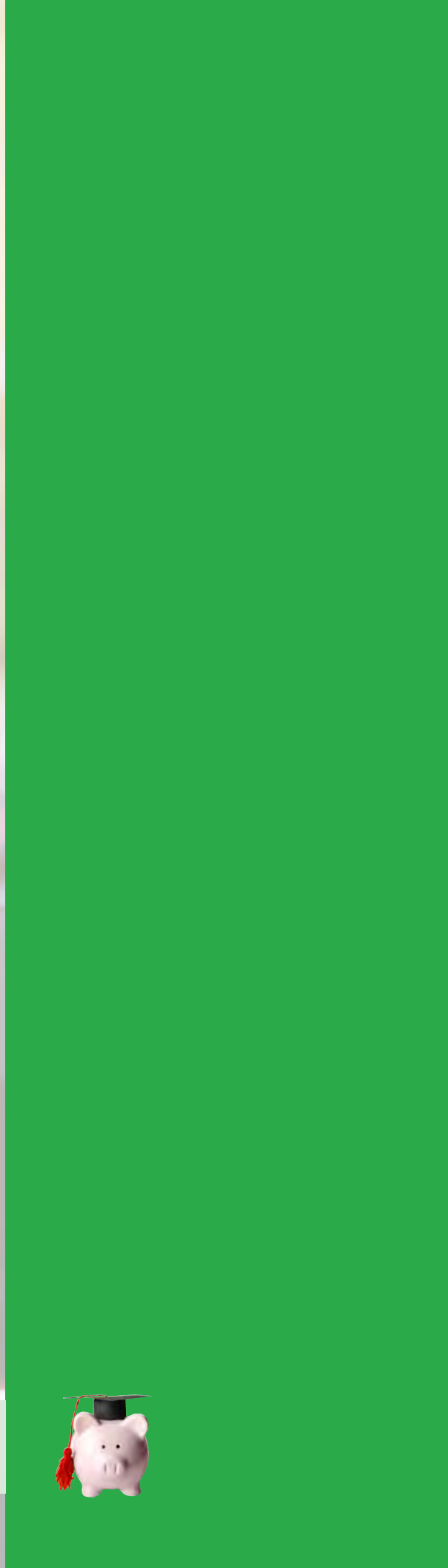
Distribution Expense

The Distribution Expense assumption was used to model an expense that could be charged on each account while in pay status. This assumption previously impacted the present value of future expenses included in the present value of program obligations.

Maintenance Expense

The maintenance expense was a fee that could be charged on each account while they have outstanding units remaining. This expense assumption was used to model the funds needed to operate the program in the event the program is terminated in the future. This assumption previously impacted the present value of future expenses included in the present value of program obligations.

See the *2015 GET Experience Study* report for additional background on the former distribution and Maintenance Expense assumptions.



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