EVALUATING STUDENT LOAN DISCOUNTS

By Mark Kantrowitz

Student loan discounts are difficult to evaluate because they are incredibly complicated. It sometimes seems like they are deliberately convoluted, like a Rube Goldberg contraption, in order to obscure a simple truth: *Most student loan discounts are more apparent than real*. Even so, discounts do offer the possibility of saving hundreds or even thousands of dollars over the lifetime of a loan, so it is important to evaluate them carefully in order to identify which loans offer the best deals for each consumer.

This article discusses the most common types of student loan discounts and the challenges of trying to compare them. It highlights the characteristics that contribute to the complexity of the discounts and how those features often reduce the value of the discounts. It also presents detailed analyses of the more popular discounts using a free student loan discount analyzer on the FinAid Web site, identifies the types of discounts that are of greatest benefit to prospective borrowers, and offers a few rules of thumb for evaluating loan discounts.

The Various Types of Student Loan Discounts

Student loan discounts are complicated because there are many different types of discounts, each with a detailed set of components and conditions that affect the value of the discount. Combinations of multiple components can interact in unpredictable ways. The nondeterministic nature of some discounts, such as prompt payment discounts, contributes to a lack of transparency. There are new discounts introduced every year. Even when a discount remains unchanged, its value may be modified by external events, such as the 0.5% annual reduction in Stafford Loan origination fees over the next several years.

There are four main types of loan discounts:

- Interest Rate Reductions
- Principal Reductions and Fee Waivers
- Rebates
- Balance Forgiveness

Most education loan products involve a combination of one or more of these discounts.

Interest rate reductions are the most straightforward of the discounts, involving a cut in the interest rate charged on the loan. The interest rates specified in the Higher Education Act of 1965 are maximum rates. Nothing prevents a lender from charging a lower rate. The authority for this derives from section 427(a)(2)(D) of the Higher Education Act, which provides that the interest charged on the unpaid principal balance of the loan correspond to a yearly rate "not exceeding the applicable maximum rate prescribed in section 427A." Sections 428C(d)(2)(B) and (C) also describe the interest rate as a maximum interest rate. Dear Colleague Letter DCL 89-L-129 also indicated that charging "a borrower an interest rate that is lower than the statutory maximum" does not represent a prohibited inducement.

Despite any reduction in the interest rate, however, the monthly loan payment must remain unchanged. Sections 428B(d)(5) and 428H(e)(5) provide, for the PLUS Loan and Unsubsidized Stafford Loan, respectively, that the "amount of the periodic payment … shall be established by assuming an interest rate equal to the applicable rate of interest at the time the repayment of the principal amount of the loan commences."

Principal reductions involve a one-time credit to the loan balance based on a percentage of the loan balance. Unfortunately, a principal reduction is a bit more complicated than an interest rate reduction because it can differ depending on which loan balance is used as the basis for the discount. The principal reduction can be based on the original loan balance at disbursement, the initial loan balance at repayment, or the current loan balance at the time the discount is applied. Often loan marketing materials will fail to specify this important detail.

A fee waiver is simply a principal reduction based on the loan balance prior to any fees being added to or deducted from the original loan balance at disbursement. The authority for such discounts derives from section 438(c)(2) of

the Higher Education Act, which specifies the fees as maximum amounts "not to exceed" the amounts provided for by statute. Dear Colleague Letter DCL 89-L-129 also permits a lender to decline to "collect all or a part of the origination fee chargeable to the borrower."

Rebates are like principal reductions, in that they involve a one-time credit, but differ in the way the credit is calculated. The credit might be based on the amount of interest that accrued within a given time period (e.g., the first year after entering repayment) or a specific dollar amount (e.g., a $500 graduation present). They usually occur near the start of repayment.

Balance forgiveness is like a rebate, but occurs near the end of the repayment schedule. The most common types forgive the remaining loan balance when it drops below a dollar amount (e.g., $500 or $600) or when there are only a few monthly payments remaining (e.g., 5 or 6). In many cases the forgiveness is pegged to the original repayment schedule, so that prepayment may eliminate all or part of the discounts.

Conditions and Eligibility Restrictions

Each of these discounts can be restricted by the application of one or more conditions. The most common conditions include:

- Prompt Payment
- Automated Payment
- Delayed Onset

An interest rate reduction...

not only requires the borrower to make consecutive, on-time payments prior to receiving the discount,

but also to continue on-time payments for continued receipt of the discount in each successive month.

The amount of a discount may also be capped by a specific dollar amount. Rebates may also need to be repaid if the borrower consolidates their loans with another lender.

Prompt payment requires the borrower to make all of his or her monthly payments on time. When combined with a principal reduction, the borrower receives the full discount upon reaching the milestone. An interest rate reduction, on the other hand, not only requires the borrower to make consecutive on-time payments prior to receiving the discount, but also to continue making on-time payments for continued receipt of the discount in each successive month. As soon as the borrower is late with a single payment, the discount is lost permanently. In some cases the loan includes a "benefit recovery" feature which restores the discount after the borrower has made additional consecutive on-time payments, typically 12 or 24.

The definition of an "on-time" payment differs from lender to lender. Some lenders require the payment to be made by the due date. Others allow a grace period of 10 to 30 days. The most common definition involves a 15-day grace period, presumably because 15 days is the time period required by 34 CFR 682.202(f)(2) before a FFEL lender can assess a late charge. (34 CFR 685.202(d)(2) requires that a payment be 30 days late before Direct Lending can assess a late fee.)

Automated payment requires a borrower to sign up to have the monthly payments direct debited from a bank account using electronic funds transfer such as ACH. A borrower who signs up for automated payment is more likely to qualify for a prompt payment discount. However, such borrowers can still lose the prompt payment discount if there are insufficient funds in their bank accounts.

Delayed onset means that the discount does not commence until a specified number of months into repayment. Delayed onset is often combined with prompt payment requirements for interest rate and principal reductions.

Another loan variation with a potential impact on cost involves the frequency of capitalization, such as monthly, quarterly, annually, or at repayment. Capitalization adds accrued but unpaid interest to the principal balance of the loan, causing compounding of interest (paying interest on interest). The more frequent the capitalization, the more quickly the loan balance grows. Section 428B(d)(2) of the Higher Education Act allows capitalization to occur no more frequently than quarterly for the PLUS loan, and section 428H(e)(2) allows capitalization only at repayment and other status changes for the unsubsidized Stafford loan. (Capitalization does not occur with the subsidized Stafford loan, since the federal government pays the interest while the borrower is enrolled in school and during the six-month grace period.) Most lenders these days capitalize the interest once at repayment.

Most of the variation among lenders lies in the combination of loan discounts and the specific parameters, such as the percentage interest rate or principal reduction, the dollar amount of a rebate, the number of months delayed onset, and which loan balance forms the basis for a principal reduction.

Evaluating Student Loan Discounts

To help evaluate student loan discounts, FinAid introduced a new calculator. The loan discount analyzer, which can be found at www.finaid.org/calculators/loandiscountanalyzer.phtml, calculates several numeric measures of loan quality:

- Total cost of the loan, including total payments and total interest and fees
- Equivalent zero-fee interest rate for the loan (APR)
- Savings compared with an undiscounted loan (expressed as a dollar amount, equivalent interest rate reduction, percentage savings relative to the undiscounted total payments, and savings per dollar disbursed)
- K-Factor analysis
- Net present value

The calculator implements a modular programming language for loan discounts, allowing it to be quickly extended soon after the introduction of new types of loan discounts.

K-Factor analysis was introduced by FinAid in 1999 as an alternative to the Annual Percentage Rate (APR) because the APR can be misleading when comparing loans with different loan terms. All else being equal, the loan with the longer loan term will have a lower APR even though the total interest paid will be higher. K-Factor analysis holds constant the factors that matter most to borrowers —the net proceeds of the loan and the monthly payment—and lets differences in loan quality be expressed in terms of the number of loan payments required to repay the debt. The lower the K-Factor, the better the loan.

The calculator also has the ability to evaluate the impact of being late on a payment on the expected value of a prompt payment discount. Rather than use Monte Carlo simulations, it exploits a new approximation technique that yields a reasonable upper bound on the expected value.

The calculator was used to evaluate all of the discounts discussed in this article.

Most Loan Discounts Are More Apparent than Real

Loan discounts lack transparency, as the value of a loan discount is not immediately evident from its description. Many of the conditions placed on these discounts, such as delayed onset and prompt payment, cause the actual discount to be worth much less than the apparent value.

Consider, for example, a comparison of two discounts on a ten-year loan at 6.8% interest with no fees. One involves a 2% interest rate reduction after 48 months of on-time payments, while the other involves a 1% interest rate reduction that starts at repayment and which does not require on-time payments. Forgetting for the moment the requirement of on-time payments, which discount seems to be best?

Most people will incorrectly guess that the 2% interest rate reduction is the better discount because 2% is bigger than 1%. In fact, the 1% interest rate reduction is worth more because the delayed onset of the 2% interest rate reduction has a big impact on the value of the discount. A 2% interest rate reduction after 48 months is the equivalent of a 0.63% interest rate reduction at the start of repayment, a savings of 5 cents per dollar disbursed. The 1% interest rate reduction that starts at repayment is clearly worth more, and represents a savings of 8 cents per dollar disbursed. The delayed onset has a big impact for three reasons:

- The delay causes the discount to be in effect for a reduced time period.
- The interest portion of the monthly payment is lower the further one gets into repayment, due to a smaller loan balance.
- The discount itself accelerates repayment, leading to a shorter duration of the discount toward the end of the repayment schedule.

If the prompt payment requirement is restored, the difference between the dis-

Table 1: Equivalent Discount at Repayment

	All Monthly Payments On-Time		1 in 36 (2.75%) Chance of Missing a Payment	
DELAYED ONSET	1% DISCOUNT	2% DISCOUNT	1% DISCOUNT	2% DISCOUNT
0 months	1.00%	2.00%	0.45%	0.90%
12 months	0.79%	1.56%	0.27%	0.53%
24 months	0.60%	1.19%	0.16%	0.31%
36 months	0.45%	0.88%	0.09%	0.18%
48 months	0.32%	0.63%	0.05%	0.10%

Table 2: Popular Student Loan Discounts

	All Monthly Payments On-Time		1 in 36 (2.75%) Chance of Missing a Payment	
DISCOUNT	EQUIVALENT RATE REDUCTION AT REPAYMENT	SAVINGS ON $10,000 6.8% INTEREST 10 YEAR TERM	EQUIVALENT RATE REDUCTION AT REPAYMENT	SAVINGS ON $10,000 6.8% INTEREST 10 YEAR TERM
Forgive last 6 payments	0.84%	$690.48	0.84%	$690.48
Forgive balance when drops below $500	0.55%	$460.32	0.55%	$460.32
3.3% principal reduction after 33 months (original balance)	0.64%	$533.92	0.24%	$208.53
7.0% principal reduction after 48 months (current balance)	0.86%	$703.44	0.21%	$181.65
2% interest rate reduction after 48 months	0.63%	$527.79	0.10%	$85.08
1% interest rate reduction after 36 months	0.45%	$380.17	0.09%	$77.26

counts is more dramatic. If we assume a 1 in 36 chance of missing a payment (2.75%)—a conservative estimate, based on repayment figures—a 2% interest rate reduction after 48 months of on-time payments which requires ongoing on-time payments is the equivalent of a 0.10% interest rate reduction at the start of repayment with no prompt payment requirement, or a savings of 1 cent per dollar disbursed. To be fair, a 1% interest rate reduction at repayment which requires on-time payments is the equivalent of a 0.45% interest rate reduction or a savings of 4 cents per dollar disbursed without the prompt payment requirement.

The prompt payment requirement has a greater impact on the delayed discount because the chance of missing a payment grows geometrically with the number of months delay. If p is the probability of missing a single payment, then $1 - (1 - p)^n$ is the probability of missing at least one of the first n payments.

Table 1 illustrates the impact of delayed onset and prompt payment discounts on 1% and 2% interest rate reductions.

Clearly, the reality of a 2% interest rate reduction after 48 months is much less impressive than the impression conveyed by advertisements of "rates as low as 4.8%" on a Stafford loan.

Delayed onset discounts often look better when one uses a longer loan term, since this allows the discount to be in effect for a longer period. For example, the 2% interest rate reduction after 48 months is the equivalent of a 1.09% interest rate reduction at the start of repayment and a savings of 26 cents per dollar disbursed on a 20 year loan, compared with 0.63% and 5 cents on a 10 year loan.

However, this glosses over the fact that even with the discount, the total interest paid is 1.74 times as much on the 20 year loan, compared with 2.18 times as much on the undiscounted loan. Moreover, if one considers the impact of the prompt payment requirement with a 1 in 36 chance of missing a payment on a 20 year loan, the discount is the equivalent of a 0.10% interest rate reduction at the start of repayment with no prompt payment requirement, which is a savings of 3 cents per dollar disbursed. The total interest paid under this scenario is 2.15 times as much as with the 10 year loan.

Prompt payment is a very difficult hurdle that significantly reduces the value of a discount. A February 20, 2007, letter by Sallie Mae CEO Tim Fitzpatrick stated that "only about 20 percent of borrowers who do not consolidate make their first 36 monthly payments on time". Using the formula mentioned previously, we can calculate that this means there is a 4.37% chance of missing a payment, or about 1 in 23. This is worse odds than the conservative 1 in 36 figure used in this article, which reflects the possibility that better benefits might have a greater success rate.

The Sallie Mae letter appears to be consistent with the hit to the spread from borrower benefits reported in Sallie Mae's annual 10-K reports as filed with the SEC and summarized by Figure 1. The managed student loan figures include loans that have been securitized, while the on-balance sheet figures do not. As such, the managed student loan figures better reflect the longer-term experience. The average is 0.09% (9 basis points) with a standard deviation of 0.02%. This represents about a 4.4% ± 1.0% discount on the spread before applying the borrower benefits. On average the borrower benefits cost Sallie Mae $9 per year for every $10,000 lent.

Curiously, the borrower benefits cost the lender only 9 basis points even though the lender offers a 25 basis point interest rate reduction for automatic debit. Anecdotal evidence suggests that where a direct-debit discount is available, between 7% and 13% of borrowers sign up for automatic debit.

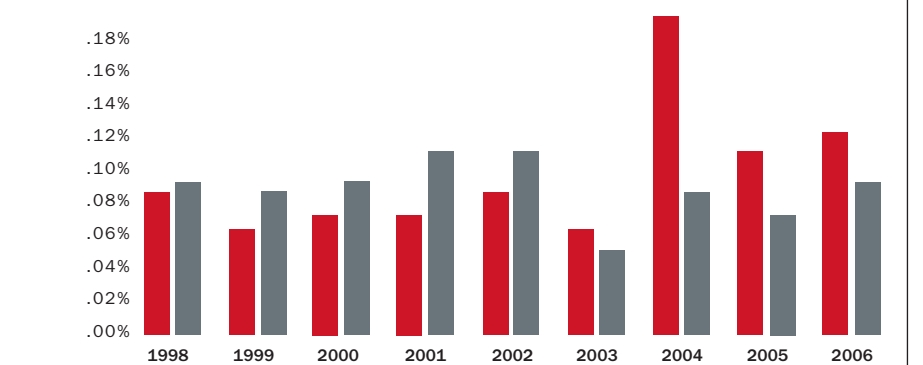
Table 2 (see page 36) compares the value of several common loan discounts under two scenarios. In one scenario the borrower makes all payments on time. In the other scenario the borrower has a 1 in 36 chance of missing a payment. The two forgiveness discounts remain unchanged because they are assumed to not depend on prompt payment.

Rules of Thumb for Evaluating Loan Discounts

Comparing the combined impact of a variation in the interest rate and fees on a loan is difficult because the cost is not readily apparent from the loan discount. For example, most people have trouble deciding whether an 8.5% loan with no fees is better or worse than a 7.9% loan with 4% fees. The 8.5% loan is better, since 7.9% with 4% fees is the equivalent of 8.84% with no fees.

A few rules of thumb for evaluating loan discounts can help guide your intuition:

Figure 1: Borrower Benefit Student Loan Analysis



	1998	1999	2000	2001	2002	2003	2004	2005	2006
ON-BALANCE SHEET	0.08	0.06	0.07	0.07	0.08	0.06	0.18	0.11	0.12
MANAGED STUDENT LOANS	0.09	0.08	0.09	0.11	0.11	0.05	0.08	0.07	0.09

- A 1% interest rate reduction is worth more than a 1% fee reduction, and it gets better as the loan term increases.
- On a 10 year loan, a 1% rate reduction is worth about the same as a 4% fee reduction.
- On a 20 year loan, a 1% rate reduction is worth about the same as a 6.5% fee reduction.
- On a 30 year loan, a 1% rate reduction is worth about the same as a 7.75% fee reduction.
- The discounts are usually better on unconsolidated loans, since the lender margins are 1.05% tighter on consolidation loans. This gives lenders less room to discount the loans.
- Lenders will encourage borrowers to choose extended repayment, since it increases their profits. For example, if a lender can convince a borrower to increase the loan term from 10 to 20 years, not only does the lender have the loan for twice as long, but the average loan balance increases by about 10%, leading to a factor of 2.2 increase in the total interest paid. Taking into account the 1.05% fee lenders pay for consolidation loans, this yields a breakeven point 6 years into repayment on a 20-year consolidation loan as compared with a 10-year unconsolidated loan. (This break-even figure is based on a net present value analysis that assumes a 5% discount rate .) An analysis of recent student loan securitizations suggests that less than 9% of borrowers who consolidate stick with standard 10-year repayment.
- The value of a percentage rate reduction or percentage principal reduction is proportional to the loan balance. If you double the loan balance, you double the discount. This is not the case with cash discounts that involve a fixed dollar amount.
- The part of the monthly payment devoted to interest declines with reductions in principal. One can approximate the total interest paid over the lifetime of the loan as the Loan Balance X Interest Rate X Loan Term / 2. This linear approximation represents a slight underestimate since loan amortization has a convex curve.

Advising Borrowers

When evaluating loan discounts, students should be advised to be realistic about the chances of making all of their loan payments on time. For most borrowers it is better to focus on discounts that are immediate and cannot be lost, as opposed to those that require on-time payment. If a discount involves a delayed onset, prefer the discount that has the shortest delayed onset.

Students should always ask the lender whether the fee waivers and other discounts must be repaid if the borrower consolidates loans with another lender. But they should also remember that the discounts for consolidation loans are often inferior, so the borrower may be better off not consolidating. If the loan balance is $30,000 or more, the borrower may be able to extend the repayment term up to 25 years without consolidating, due to a little-known provision of the Higher Education Act. Other questions worth asking include:

- Do the discounts require a minimum balance?
- Are the discounts are guaranteed to persist even if the loan is sold to another lender?
- What percentage of borrowers received each discount last year?

When evaluating loan discounts, students should be advised to be realistic about the chances of making all of their loan payments on time.

- What was the average amount received as a percentage of the total loan balances?
- Are principal reductions based on the current loan balance, original loan balance at disbursement, or the initial loan balance at repayment?
- What does it mean for a payment to be considered "on time"?
- How do deferments and forbearances affect eligibility for a discount?
- Do borrowers have to request the discounts in writing, or are the discounts automatically granted?

Borrowers should also be encouraged to sign up for automatic debit of the monthly payments. Being late on student loan payments can have a negative impact on students' credit scores, so anything that can be done to minimize the risk is worthwhile. Plus, with an automatic debit the money is automatically removed from the account, so the borrower is less likely to spend it and much more likely to qualify for prompt payment discounts.

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