

Applications of amortization



**ASSIGN
BUSTER**

amortization Definitions (2) 1. The gradual elimination of a liability, such as a mortgage, in regular payments over a specified period of time. Such payments must be sufficient to cover both principal and interest. 2. Writing off an intangible asset investment over the projected life of the assets. Read more: <http://www.investorwords.com/200/amortization.html#ixzz2GXWACfP2>

Applications of amortization In business, amortization refers to spreading payments over multiple periods. The term is used for two separate processes: amortization of loans and amortization of intangible assets. Amortization of loans

In lending, amortization is the distribution of payment into multiple cash flow installments, as determined by an amortization schedule. Unlike other repayment models, each repayment installment consists of both principal and interest. Amortization is chiefly used in loan repayments (a common example being a mortgage loan) and in sinking funds. Payments are divided into equal amounts for the duration of the loan, making it the simplest repayment model. A greater amount of the payment is applied to interest at the beginning of the amortization schedule, while more money is applied to principal at the end.

Commonly it is known as EMI or Equated Monthly Installment. [1] or, equivalently, where: P is the principal amount borrowed, A is the periodic payment, r is the periodic interest rate divided by 100 (annual interest rate also divided by 12 in case of monthly installments), and n is the total number of payments (for a 30-year loan with monthly payments $n = 30 \times 12 = 360$). Negative amortization (also called deferred interest) occurs if the payments

made do not cover the interest due. The remaining interest owed is added to the outstanding loan balance, making it larger than the original loan amount.

If the repayment model for a loan is "fully amortized," then the very last payment (which, if the schedule was calculated correctly, should be equal to all others) pays off all remaining principal and interest on the loan. If the repayment model on a loan is not fully amortized, then the last payment due may be a large balloon payment of all remaining principal and interest. If the borrower lacks the funds or assets to immediately make that payment, or adequate credit to refinance the balance into a new loan, the borrower may end up in default. Amortization of intangible assets

In accounting, amortization refers to expensing the acquisition cost minus the residual value of intangible assets (often intellectual property such as patents and trademarks or copyrights) in a systematic manner over their estimated useful economic lives so as to reflect their consumption, expiry, obsolescence or other decline in value as a result of use or the passage of time. A corresponding concept for tangible assets is depreciation. Methodologies for allocating amortization to each accounting period are generally the same as for depreciation.

However, many intangible assets such as goodwill or certain brands may be deemed to have an indefinite useful life and are therefore not subject to amortization (although goodwill is subjected to an impairment test every year). Amortization is recorded in the financial statements of an entity as a reduction in the carrying value of the intangible asset in the balance sheet and as an expense in the income statement. Under International Financial Reporting Standards, guidance on accounting for the amortization of

intangible assets is contained in IAS 38. 2] Under United States generally accepted accounting principles (GAAP), the primary guidance is contained in FAS 142. [3] While theoretically amortization is used to account for the decreasing value of an intangible asset over its useful life, in practice, many companies will "amortize" what would otherwise be one-time expenses by listing them as a capital expense on the cash flow statement and paying off the cost through amortization, thereby improving the company's net income in the fiscal year or quarter of the expense.

Amortization schedule

An amortization schedule is a table detailing each periodic payment on an amortizing loan (typically a mortgage), as generated by an amortization calculator. Amortization refers to the process of paying off a debt (often from a loan or mortgage) over time through regular payments. A portion of each payment is for interest while the remaining amount is applied towards the principal balance. The percentage of interest versus principal in each payment is determined in an amortization schedule.

While a portion of every payment is applied towards both the interest and the principal balance of the loan, the exact amount applied to principal each time varies (with the remainder going to interest). An amortization schedule reveals the specific monetary amount put towards interest, as well as the specific amount put towards the principal balance, with each payment. Initially, a large portion of each payment is devoted to interest. As the loan matures, larger portions go towards paying down the principal.

Methods of amortization

There are different methods in which to arrive at an amortization schedule. These include:

- Straight line (linear)
- Declining balance
- Annuity
- Bullet (all

at once) •Balloon (amortization payments and large end payment)
•Increasing balance (negative amortization) Amortization schedules run in chronological order. The first payment is assumed to take place one full payment period after the loan was taken out, not on the first day (the amortization date) of the loan. The last payment completely pays off the remainder of the loan.

Often, the last payment will be a slightly different amount than all earlier payments. In addition to breaking down each payment into interest and principal portions, an amortization schedule also reveals interest-paid-to-date, principal-paid-to-date, and the remaining principal balance on each payment date. Example amortization schedule This amortization schedule is based on the following assumptions: First, it should be known that rounding errors occur and depending how the lender accumulates these errors, the blended payment (principal + interest) may vary slightly some months to keep these errors from accumulating; or, the accumulated errors are adjusted for at the end of each year, or at the final loan payment. There are a few crucial points worth noting when mortgaging a home with an amortized loan. First, there is substantial disparate allocation of the monthly payments toward the interest, especially during the first 18 years of the mortgage. In the example above, payment 1 allocates about 80-90% of the total payment towards interest and only \$67.9 (or 10-20%) toward the Principal balance. The exact percentage allocated towards payment of the principal depends on the interest rate. Not until payment 257 or 21 years into the loan does the payment allocation towards principal and interest even out and subsequently tip the majority of the monthly payment toward

Principal balance pay down. Second, understanding the above statement, the repetitive refinancing of an amortized mortgage loan, even with decreasing interest rates and decreasing Principal balance, can cause the borrower to pay over 500% of the value of the original loan amount. Re-amortization' or restarting the amortization schedule via a refinance causes the entire schedule to restart: the new loan will be 30 years from the refinance date, and initial payments on this loan will again be largely interest, not principal. If the rate is the same, say 8%, then the interest/principal allocation will be the same as at the start of the original loan (say, 90/10). This economically unfavorable situation is often mitigated by the apparent decrease in monthly payment and interest rate of a refinance, when in fact the borrower is increasing the total cost of the property.

This fact is often (understandably) overlooked by borrowers. Third, the payment on an amortized mortgage loan remains the same for the entire loan term, regardless of Principal balance owed but only for a fixed rate, fully amortizing loan. For example, the payment on the above scenario will remain \$733. 76 regardless if the Principal balance is \$100, 000 or \$50, 000. Paying down large chunks of the Principal balance in no way affects the monthly payment, it simply reduces the term of the loan and reduces the amount of interest that can be charged by the lender resulting in a quicker payoff.

To avoid these caveats of an amortizing mortgage loan many borrowers are choosing an interest-only loan to satisfy their mortgage financing needs. Interest-only loans have their caveats as well which must be understood

before choosing the mortgage payment term that is right for the individual borrower. 3 Amortization calculator An amortization calculator is used to determine the periodic payment amount due on a loan (typically a mortgage), based on the amortization process. The amortization repayment model factors varying amounts of both interest and principal into every installment, though the total amount of each payment is the same.

An amortization schedule calculator is often used to adjust the loan amount until the monthly payments will fit comfortably into budget, and can vary the interest rate to see the difference a better rate might make in the kind of home or car one can afford. An amortization calculator can also reveal the exact dollar amount that goes towards interest and the exact dollar amount that goes towards principal out of each individual payment. The amortization schedule is a table delineating these figures across the duration of the loan in chronological order.

The formula The calculation used to arrive at the periodic payment amount assumes that the first payment is not due on the first day of the loan, but rather one full payment period into the loan. While normally used to solve for A , (the payment, given the terms) it can be used to solve for any single variable in the equation provided that all other variables are known. One can rearrange the formula to solve for any one term, except for i , for which one can use a root-finding algorithm. The annuity formula is: Where: • A = periodic payment amount P = amount of principal, net of initial payments, meaning " subtract any down-payments" • i = periodic interest rate • n = total number of payments This formula is valid if $i > 0$. If $i = 0$ then simply $A = P / n$. For a 30-year loan with monthly payments, Note that the interest

rate is commonly referred to as an annual percentage rate (e. g. 8% APR), but in the above formula, since the payments are monthly, the rate must be in terms of a monthly percent. Converting an annual interest rate (that is to say, annual percentage yield or APY) to the onthly rate is not as simple as dividing by 12, see the formula and discussion in APR. However if the rate is stated in terms of " APR" and not " annual interest rate", then dividing by 12 is an appropriate means of determining the monthly interest rate. Derivation of the formula The formula for the periodic payment amount is derived as follows. For an amortization schedule, we can define a function that represents the principal amount remaining at time . We can then derive a formula for this function given an unknown payment amount and .

We can generalize this to Applying the substitution (see geometric progressions) We end up with For payment periods, we expect the principal amount will be completely paid off at the last payment period, or Solving for A, we get or After substitution and simplification we get 4 Negative amortization In finance, negative amortization, also known as NegAm, deferred interest or graduated payment mortgage, occurs whenever the loan payment for any period is less than the interest charged over that period so that the outstanding balance of the loan increases.

As an amortization method the shorted amount (difference between interest and repayment) is then added to the total amount owed to the lender. [1] Such a practice would have to be agreed upon before shorting the payment so as to avoid default on payment. This method is generally used in an introductory period before loan payments exceed interest and the loan becomes self-amortizing. The term is most often used for mortgage loans;

corporate loans which have negative amortization are called PIK loans. Amortization refers to the process of paying off a debt (often from a loan or mortgage) over time through regular payments.

A portion of each payment is for interest while the remaining amount is applied towards the principal balance. The percentage of interest versus principal in each payment is determined in an amortization schedule. 5. Amortizing loan In banking and finance, an amortizing loan is a loan where the principal of the loan is paid down over the life of the loan (that is, amortized) according to some amortization schedule, typically through equal payments. Similarly, an amortizing bond is a bond that repays part of the principal (face value) along with the coupon payments.

Compare with a sinking fund, which amortizes the total debt outstanding by repurchasing some bonds. Each payment to the lender will consist of a portion of interest and a portion of principal. Mortgage loans are typically amortizing loans. The calculations for an amortizing loan are those of an annuity using the time value of money formulas, and can be done using an amortization calculator. An amortizing loan should be contrasted with a bullet loan, where a large portion of the loan will be paid at the final maturity date instead of being paid down gradually over the loan's life.

An accumulated amortization loan represents the amount of amortization expense that has been claimed since the acquisition of the asset. Effects Amortization of debt has two major effects: Credit risk First and most importantly, it substantially reduces the credit risk of the loan or bond. In a bullet loan (or bullet bond), the bulk of the credit risk is in the repayment of the principal at maturity, at which point the debt must either be paid off in

full or rolled over. By paying off the principal over time, this risk is mitigated.

Interest rate risk

A secondary effect is that amortization reduces the duration of the debt, reducing the debt's sensitivity to interest rate risk, as compared to debt with the same maturity and coupon rate. This is because there are smaller payments in the future, so the weighted-average maturity of the cash flows is lower. Weighted-average life Main article: Weighted-average life The number weighted average of the times of the principal repayments of an amortizing loan is referred to as the weighted-average life (WAL), also called "average life". It's the average time until a dollar of principal is repaid. In a formula, where: P is the principal, C is the principal repayment in coupon, hence C/P is the fraction of the principal repaid in coupon, and t is the time from the start to coupon C .

6. Amortization (tax law) In tax law, amortization refers to the cost recovery system for intangible property. Although the theory behind cost recovery deductions of amortization is to deduct from basis in a systematic manner over an asset's estimated useful economic life so as to reflect its consumption, expiration, obsolescence or other decline in value as a result of use or the passage of time, many times a perfect match of income and deductions does not occur for policy reasons.

Depreciation A corresponding concept for tangible assets is depreciation. Methodologies for allocating amortization to each tax period are generally the same as for depreciation. However, many intangible assets such as goodwill or certain brands may be deemed to have an indefinite useful life, or "self-created" and are therefore not subject to amortization