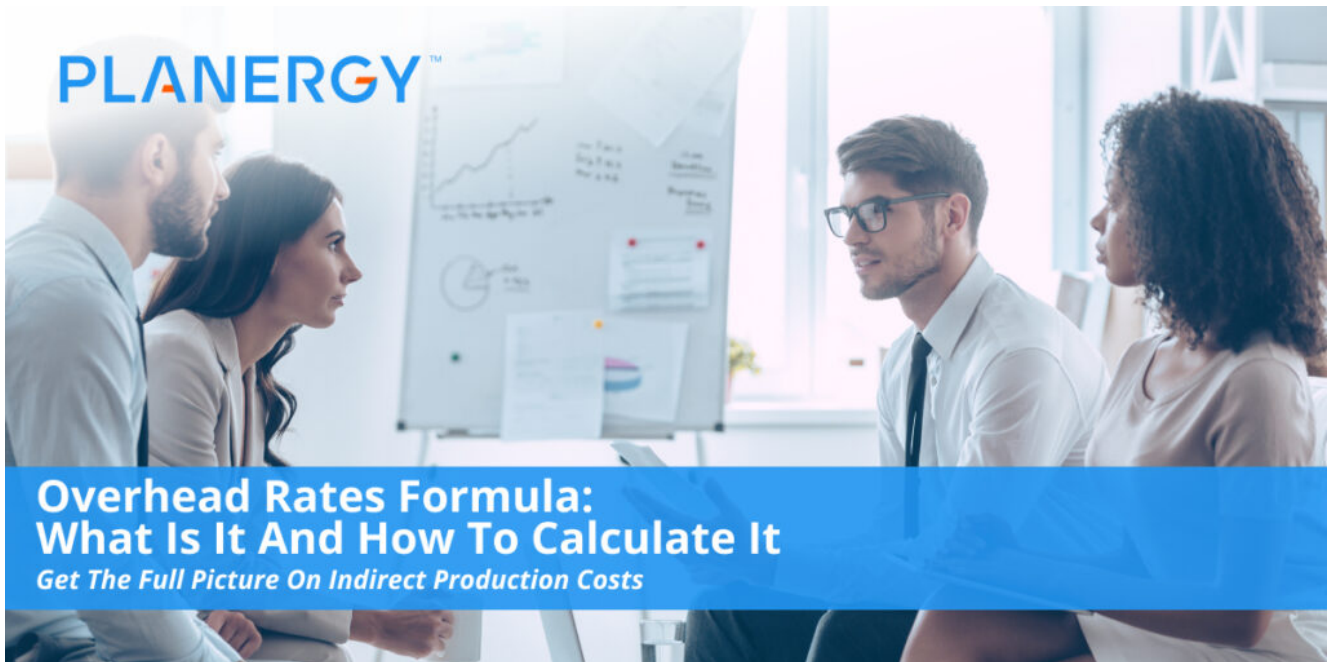


Overhead Rates Formula: What Is It and How to Calculate It



Whether you're operating a major corporation or running a local small business, managing the costs that come with doing business requires a thorough understanding of both direct and indirect spending. When properly managed, overhead costs—those business expenses related to support for production rather than raw materials, direct labor costs, etc.—provide businesses of all sizes with a rich opportunity to improve profitability and set competitive pricing through optimization.

But in order to optimize your overhead costs, you need to know how to use the overhead rate formula to calculate the *predetermined overhead rate*. This simple formula is the key to unlocking the insights that will help you take control of your indirect costs and ensuring every dollar spent provides maximum value and return on investment (ROI).

What is a Predetermined Overhead Rate?

Like other important financial calculations, the predetermined overhead rate (often simply referred to as the *overhead rate* or the *overhead allocation rate*) is straightforward in execution but requires careful, considered interpretation in order to provide maximum value.

Along with its complement, direct costs, your company's overhead rate can have a profound effect on both your income statement and balance sheet, as well as your ability to make strategic sourcing and financial planning decisions. Organizations rely on overhead rate calculations so they can set prices to protect profitability, budget manufacturing overhead costs, and keep an eye on the costs that come with "the business of doing business."

You can calculate your overhead rate by adding up the total overhead costs for a given accounting period and then allocating those costs based on one of several *allocation measures* (also called *activity drivers* or *activity cost drivers*) that contextualize the amounts spent in different ways.

The general formula is:

$$\text{Indirect Costs} \div \text{Allocation Measure} = \text{Predetermined Overhead Rate}$$

Note: *The predetermined overhead rate is generally expressed in currency values, but can be converted to a percentage value by multiplying by 100.*

Whether you're a small business owner or part of a large procurement and financial analysis

team at a large corporation, using this formula effectively can help you measure and refine your indirect spend.

Generally speaking, small businesses calculate their overhead rate annually,

although they can and do use shorter periods, depending on the allocation measure they're using.

Larger businesses centered on manufacturing often have additional, and much larger, indirect expenses to consider, however, and so more often choose to calculate their overhead rate quarterly or even monthly.

With more frequent overhead rate calculations, companies can make necessary adjustments in time to prevent indirect costs from having potentially costly negative impacts on profit margin, planning, and product pricing.

A Note on the Limitations of the Predetermined Overhead Rate Formula

It is absolutely an invaluable tool for businesses of all types and sizes, but the values reached using the predetermined overhead rate calculation formula come with a bit of their own risk. Because the predetermined overhead rate is based on *estimates*, calculating it with incomplete or inaccurate data can also skew the budgets, reports, and forecasts created using it.

In addition, without the proper analytical tools, it's possible to rely too heavily on historical data that may not apply to current operating conditions and costs. A difference between estimated and actual costs creates a variance charged to the cost of goods sold. This can have a significant impact on profits and future pricing.

Fortunately, these risks can be handily managed with the use of modern digital tools.

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Direct Costs, Indirect Costs, and Overhead Rate

Before you can use the overhead rate formula to start streamlining your overhead expenses, it helps to have a firm grasp of the values and terms involved.

Direct Costs are any costs with a direct connection to producing the products and services your company sells. Direct expenses include:

- Direct labor
- Direct materials (raw materials)
- Physical assets
- Manufacturing supplies

Indirect Costs are those incurred through normal, everyday business operations. They have no direct connection to production costs, but are instrumental in calculating the predetermined overhead rate. Examples include:

- Quality assurance
- Office and facility rent
- Utilities (e.g. gas, water, electricity)
- Marketing services
- Indirect labor
- Taxes
- Maintenance costs
- Legal services
- Information technology services
- Non-production equipment
- Indirect materials (e.g., office supplies)

- Insurance

Fixed costs are those expenses unaffected by changes in production levels. One of the most common examples is rent, which remains static no matter how many goods are produced.

Variable costs rise and fall with production. Raw materials and direct labor are both variable costs. On the indirect side, utilities are often a variable cost because more production means more resources and energy consumed.

Overhead Rate Calculation Examples

Once you've identified and calculated your total indirect expenses, it's time to choose an overhead allocation method so you can properly contextualize the results and make the right strategic decisions. Some of the most commonly used include total sales, the number of direct labor hours, the cost of direct labor, and total machine hours.

Using an example business called Bob's Quality Widgets, let's take a look at four methods of predetermined overhead rate calculation using each of these allocation measures.

Sales

The business owner, Bob, wants to create and refine his monthly budget. Accordingly, he applies his indirect costs for the month of June (\$200,000) to his total sales for the same period (\$800,000).

$$\text{\$200,000} \div \text{\$800,000} = \text{\$0.25}$$

Based on this result, Bob's spending \$0.25 on overhead for every dollar he earns in sales.

Applying the percentage conversion, we see Bob's total overhead costs with regard to sales are 25%.

Direct Labor Hours

To achieve continuous improvement and optimize production workflows, it's important to identify those processes whose costs reveal inefficiencies robbing your coffers. In comparing the total direct labor hours for June (10,000) to the total indirect costs, Bob sees:

$$\text{\$200,000} \div \text{15,000} = \text{\$13.33}$$

Bob's incurring \$13.33 in indirect costs for every hour of direct labor.

Cost of Direct Labor

A variable cost and an integral part of your company's cost of goods sold, direct labor is the total salaries and wages paid at an hourly rate to production employees. Assume Bob has \$225,000 in direct labor costs for June. Plugging that into our overhead rate formula, we get:

$$\text{\$200,000} \div \text{\$225,000} = \text{\$0.89}$$

For every dollar paid to his production employees, Bob is spending \$0.89 in overhead.

Converting this to a percentage, Bob has a manufacturing overhead rate of 89% with regard to direct labor costs.

Total Machine Hours

This allocation method is similar to Direct Labor Hours, except it uses the total number of hours production machinery is in use, rather than direct labor hours of

all kinds. Bob's machines churned out widgets for 10,000 hours in June. When he plugs this into the formula, he gets:

$$\text{\$200,000} \div \text{10,000} = \text{\$20}$$

Bob's manufacturing overhead rate for machine hours is \$20; he's spending \$20 in indirect costs for every hour his machines are in use.

By carefully considering these estimated costs when setting his budgets and product pricing, Bob can be sure he's earning enough profit to cover indirect costs while still generating adequate revenue for other business goals.

How to Reduce Your Predetermined Overhead Rate

The lower the overhead rate, the higher your profits and the more efficient your processes. Once you're comfortable calculating and applying your predetermined overhead rate, the next step is finding ways to slash indirect costs to improve it.

One of the most effective ways to begin is by implementing a procurement software solution such as Planergy. In addition to centralizing your data management and providing a complete, clear, and accurate picture of all both current and (over time) historic spend for both direct and indirect costs, procurement software:

- Reduces indirect expenses in several important areas by eliminating the need for paper-based workflows.
- Provides continuous improvement and process optimization through automation.
- Gives stakeholders at all levels role-appropriate access to information in real time.
- Allows leadership to calculate important financial benchmarks (such as

overhead rates) and use that data for more accurate, timely, and strategically valuable decision making.

- Mitigates the risks accompanying predetermined overhead rate calculations by:
 - Providing the most accurate and complete data possible.
 - Simplifying historical data analysis to identify divergence from past trends and make more accurate estimates.
 - Tracking and recording variances to further refine estimates for future overhead rate calculations.
- Gives your procurement team access to supplier relationship management and supply chain optimization This makes it easier to obtain both direct and indirect goods and services at better quality, pricing and terms, simultaneously improving product quality while reducing product cost.

Equipped with these software tools, you can also more effectively perform needs analysis to further reduce overhead.

For example, improvements in production efficiency or new sources for raw materials may allow you to consolidate manufacturing facilities, reducing factory overhead. Switching to remote working part or even all of the time for your office staff can eliminate the need for large physical office space, and virtualizing teams can provide opportunities to reduce human resources costs through a strategic combination of employees and contractors.

A Simple Calculation with Big Impact on Business Success

Don't let indirect costs hamper your profitability. Taking the time to calculate your overhead rate accurately will help you identify which parts of your spend are working and which need improvement—and lower overhead for more effective pricing, greater efficiency, and a healthier bottom line.

What's your goal today?

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