

# Overhead Rates Formula: What Is It And How To Calculate It



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If you're in manufacturing, you're familiar with direct costs, which represents direct materials cost which includes funds spent on supplies, raw materials, and labor that is factored into the cost of goods sold or COGS.

But what about the other costs of doing business that aren't included in the COGS sold equation?

Those costs, known as overhead costs, need to be factored into your product costs as well, particularly when you're setting prices.

But why is it so important to know and understand your company's overhead costs?

In the next few paragraphs, we'll explain the relationship between your business expenses and your company's overhead costs, and how those costs factor into your overhead rate.

## **What Are Overhead Costs?**

Overhead costs, also known as indirect costs, are the costs associated with running a business that is not directly related to manufacturing a product or offering a service.

Typical operating expenses like rent and utilities are considered overhead costs.

Overhead needs to be paid regardless of sales levels or incoming revenue.

Unlike direct expenses such as direct labor, direct materials or raw materials, and manufacturing supplies that are always directly tied to production, overhead costs do not contribute to revenue generation but still need to be accounted for.

## **What Are the Different Types of Overhead Costs?**

Whether you're a small business with a single employee or have multiple locations around the globe, you still have to pay overhead.

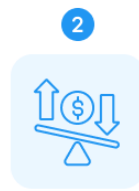
To better understand the concept of overhead costs, you'll first need to know the three distinct types of overhead costs your business routinely incurs.

There are three different types of overhead costs:

## What Are the Different Types of Overhead Costs



Fixed Costs



Variable Costs



Semi-Variable  
Costs

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### 1. Fixed Costs

Fixed costs are costs that remain the same regardless of the level of production or services offered. Fixed costs include rent or mortgage payments, insurance costs, and depreciation costs.

To understand fixed costs, consider this example.

Vision Inc., a small manufacturing company that assembles and sells airplane parts, had \$15,000 in sales in September and \$11,000 in sales in October, but their rent of \$1,500 remained the same.

### 2. Variable Costs

Variable costs are costs that can vary from month to month.

Sometimes variable costs are incurred every few months, or they may be incurred each month but vary in their total amount due.

Common variable costs include shipping and postage, office supplies, advertising, and maintenance costs.

Using Vision Inc.'s revenue as an example, Vision's shipping costs in September were \$950 but because they had fewer sales in October, their shipping costs dropped to \$625.

### 3. **Semi-Variable Costs**

Semi-variable costs are costs that are consistently incurred each month and may vary. These costs include electricity, cellphone bills, and even salary and wages.

For example, you pay your salespeople a set salary each month, but their commission payment will vary each month depending on sales totals.

Knowing your overhead costs is vital for setting prices and also helps to pinpoint areas where you may be overspending.

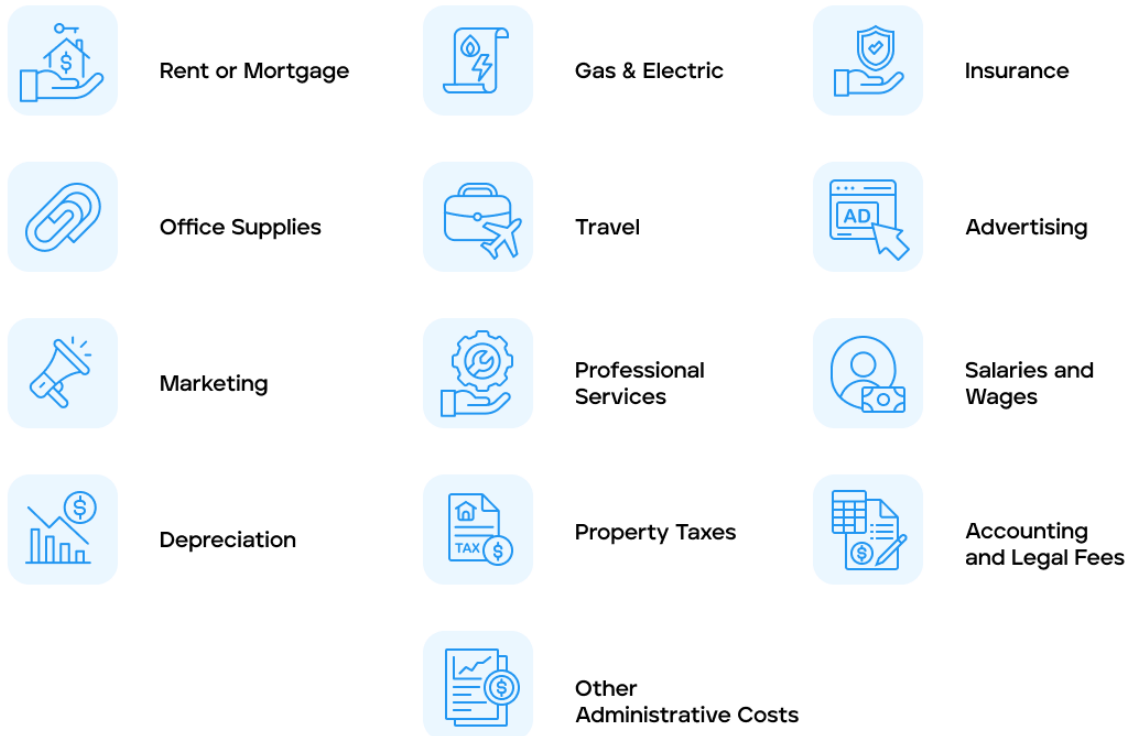
## **How Do You Calculate Overhead Costs?**

If you're using a manual accounting system, you will need to add up all of your overhead costs using a Microsoft Excel spreadsheet or similar application.

Your income statement can also help you identify all overhead or indirect costs.

The following are some common indirect expenses:

## Common Indirect Expenses



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- Rent or mortgage
- Gas & Electric
- Insurance
- Office supplies
- Travel
- Advertising
- Marketing
- Professional services
- Salaries and wages
- Depreciation
- Property taxes
- Accounting and legal fees
- Other administrative costs

After reviewing the list, you'll see that while the costs are necessary for doing business, they are not directly related to production or services.

Also, keep in mind that the type of business you currently have can directly influence whether a cost is considered overhead or a direct cost.

## **What Is the Overhead Rate?**

Overhead rate is a ratio that measures overhead or indirect costs against direct costs, machine hours, or labor hours.

While tracking the cost of goods sold is important for determining actual production costs, to earn a profit, you'll need to set prices that consider all expenses.

Tracking your overhead rate also provides a way to determine if your indirect costs are eating into your profit margin.

## **What Is the Overhead Rate Formula?**

Once you've calculated your overhead costs for a specified time frame, you're ready to complete the overhead rate calculation.

But first, you'll need to identify the overhead rate measure that you wish to use.

If you're not sure which measure to use, think about what questions you may want answered. For instance, if you want to know how efficient your machines are running, calculating machine hours is the logical choice.

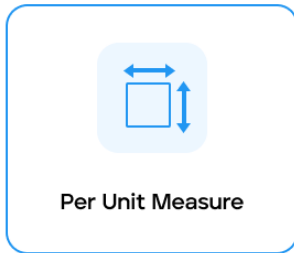
However, if you're looking at overall costs and want a more informed way to price your products or services, you may want to use sales or labor hours.

Let's use the following information to calculate Vision's overhead rate using a variety of cost measures.

In 2022, Vision Ltd. had total overhead costs of \$84,500 and produced 19,750 units to sell.

Their production employees had 10,400 direct labor hours, and their sales were \$310,00 for the year.

## What Are the Types of Overhead Rate Measure



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### • Per Unit Measure

The per-unit measure is used if you want to calculate overhead costs by the number of units produced.

This calculation will provide you with the total cost, both direct and indirect, that it takes to produce a single unit.

This measure can be extremely helpful when looking to accurately price an item.

$$\$84,500 / 19,750 = \$4.28$$

This means that for every unit you produce, you have \$4.28 in overhead costs that will need to be allocated.

### • Direct Labor Measure

This measure uses the number of direct labor hours and can be helpful for those who want to know how much overhead costs are incurred for each hour of labor.

To calculate your direct labor hours, you'll do the following calculation:

$$\$84,500 / 10,400 = \$8.10$$

This means that for each direct labor hour worked, you're incurring \$8.10 in indirect costs.

## • Sales Measure

Using sales as a measure of overhead rate can be helpful when preparing a budget.

Vision's CFO can estimate sales and determine how much of Vision's overhead costs will impact sales.

Using the numbers above, let's calculate the overhead rate for sales:

$$\$84,500 / \$310,000 = \$0.27$$

This means that for every dollar Vision earns in sales, \$.27 will be used for overhead.

If you want to obtain the percentage of overhead against total sales, you can complete the following calculation:

$$(\$84,500 / \$310,000) \times 100 = 27.25\%$$

That means that 27.25% of Vision's sales revenue is spent on overhead.

These rates, called the predetermined overhead rate, can help business owners calculate future costs more accurately.

Though some businesses may choose to calculate a single overhead rate measure, it may be more useful to calculate multiple overhead rates to help pinpoint inefficiencies in specific areas.

## What Are the Factors That Affect the Overhead Rate?

Everything from how much your business spends on rent and utilities each month to the accounting software applications you're using can impact your overhead rate.

And because overhead rates are an estimate, if the numbers you're accessing to calculate your overhead rate aren't accurate, then the results will be inaccurate as well.

For example, if you're using overinflated sales totals to calculate your overhead rate, you may be underestimating your overhead expenses, which can result in pricing your goods and services too low, negatively impacting your profit margin, and your bottom line.

## **How Do You Allocate Overhead Costs?**

Overhead allocation, also known as overhead absorption is the process where overhead costs are distributed across cost centers such as direct labor hours, machine hours, direct labor costs, or other cost centers as needed.

Allocation of overhead costs is necessary for businesses to determine the complete cost of producing an item or service beyond direct costs and is especially useful in the budgeting and forecasting process.

Allocating overhead costs uses the same calculation as the overhead rate, with the results used differently.

For example, let's revisit Vision Ltd., which manufactures airplane parts. After calculating overhead costs for the second quarter, Vision's overhead costs total \$20,000.

Because the entire manufacturing process is automated, Vision's CFO decides to use machine hours as the basis for the overhead allocation rate or absorption.

This is done by determining the number of hours the machine was used over the last quarter.

Vision used its machines for 3,500 hours in the second quarter.

To determine how much in overhead costs to allocate, the CFO would calculate the overhead allocation as follows:

$$\$20,000 / 3,500 = \$5.71$$

When preparing their budget for next year, Vision can estimate machine hours

that will be used and allocate overhead costs accordingly.

For instance, if 2023 machine hours total 14,250, Vision can allocate a total overhead cost of \$81,367.50 for the year, adjusting the total depending on what the actual number of machine hours is at the end of 2024.

The result of this adjustment is known as cost absorption.

## **What Is Cost Absorption?**

When companies use standard cost accounting, they substitute an estimated cost for an actual cost.

Every accounting period, a standard amount of overhead is estimated and applied to goods that have been produced.

If the actual amount of overhead is different from the estimated amount used, the overhead is considered either over-absorbed or under-absorbed.

When actual overhead costs are higher than originally estimated, they are said to be under-absorbed.

When overhead is lower than originally estimated, the costs are said to be over-absorbed.

Both under-absorption and over-absorption are common issues that are typically dealt with at year-end when actual totals are available.

One common way to adjust for over or under-absorption is to adjust your cost of goods sold for the difference.

However, the best solution is to purchase an automated accounting software application that uses a just-in-time assumption that tracks inventory flow in real time and reduces the amount of inventory that needs to be on hand.

Just-in-time systems also allow you to produce items when ordered rather than in preparation for an order, eliminating both work-in-progress and an overabundance of finished goods that have not been sold.

# How Do You Reduce Overhead Costs?

One of the best ways to improve your profit margin is to reduce your overhead costs.

There are a lot of ways that you can reduce overhead costs that will make a positive impact on your business.

## ■ How Do You Reduce Overhead Costs?



Reduce Variable Costs



Scale Down Your Staff



Improve Working Conditions for Current Staff



Audit Your Expenses



Automate Your Accounting Processes

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## • Reduce Variable Costs

Variable costs are some of the easiest to control because they vary from month to month.

Expenses like business travel, meals and entertainment, office supplies, and even marketing and advertising can often be scaled down when necessary without having to resort to more drastic measures like staff reduction.

## • Scale Down Your Staff

If sales totals drop, it's almost impossible to keep the same number of people on staff.

Unfortunately, there may be a time when scaling back staff is the only solution.

Another solution is to forego filling empty positions until revenue improves.

If you need staff, you may want to consider part-time help, which can help reduce payroll taxes and other employment-related expenses.

## ▪ **Improve Working Conditions for Current Staff**

This may sound counterintuitive after advocating for staff reduction, but being able to maintain the staff that you have can help you weather a lot of potential storms down the road.

Hiring and onboarding a new employee costs a lot of money as well as an investment in training.

You can that addition expense expenses if you work to retain your current staff.

## ▪ **Audit Your Expenses**

Auditing your monthly overhead costs can help you pinpoint problem areas and make any necessary changes.

Areas to look at include:

- **Employee Expense Reports** - Your employees may be completely upfront and honest about their expenses, but spending a few extra moments reviewing expense reports may uncover some anomalies.
- **Subscriptions** - Subscriptions are one of those areas that no one seems to think about.

Magazines, journals, and membership fees in organizations that are no longer relevant are all areas that should be reviewed

regularly to see if the expense is still justified.

- **Negotiate With Your Vendors**- It may not always work, but asking your vendors for better pricing or even better payment terms can help reduce overhead costs.

Even a \$.50 reduction in pricing for an item that you order thousands of can help.

## ▪ **Automate Your Accounting Processes**

Slashing indirect costs helps obtain a better overhead rate, but one of the most beneficial things you can do to reduce overhead costs is to implement an automated accounting system.

Automation can improve system functionality, which in turn allows you to reduce or reorganize staff.

Automation also eliminates time-consuming paper-based workflows and manual processes while ensuring that calculations are accurate and complete.

An automated application like PLANERGY helps to optimize vendor and supplier relationships, and can provide reporting in real-time.

Finally, automation allows you to consider moving administrative staff to remote work, either part time or full time, making downsizing your facility a distinct possibility.

# **The Calculation Is Simple - and the Impact Tremendous**

It only takes a minute to calculate your overhead rate, but knowing where your business shines and where it needs improvement allows you to make the changes needed to obtain a healthier bottom line.

# What's your goal today?

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