ไหน ๆ ก้อไหน ไหน แล้วเรามาคุยกันเรื่องเดิมอีกซักหน่อย ความสัมพันธ์ของการว่างงานกับภาวะเงินเฟ้อ อ่านหน่อยเถอะน่า....นะครับผมกราบขอร้องล่ะ อย่าเห็นเป็นภาษาต่างประเทศแล้วมองผ่านไป เราหนีมันไม่พ้นแน่ ๆ ยังไงก้อต้องพบ ยังไงก้อต้องเจอ สำหรับภาษาต่างประเทศ

ศาสตราจารย์ ดร. กิตตินันต์ พิศสุวรรณ

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How inflation and unemployment are related

How can inflation affect unemployment, and vice versa? Here, we examine the relationship between wage inflation, consumer prices, and unemployment.

The relationship between inflation and unemployment has traditionally been an inverse correlation. However, this relationship is more complicated than it appears at first glance and has broken down on a number of occasions over the past 45 years. Since inflation and (un)employment are two of the most closely monitored economic indicators, we'll delve into their relationship and how they affect the economy.

Supply and Demand for Labor

If we use wage inflation, or the rate of change in wages, as a proxy for inflation in the economy, when unemployment is high, the number of people looking for work significantly exceeds the number of jobs available. In other words, the supply of labor is greater than the demand for it.

With so many workers available, there's little need for employers to "bid" for the services of employees by paying them higher wages. In times of high unemployment, wages typically remain stagnant, and wage inflation (or rising wages) is non-existent.

In times of low unemployment, the demand for labor (by employers) exceeds the supply. In such a tight labor market, employers typically need to pay higher wages to attract employees, ultimately leading to rising wage inflation.

Over the years, economists have studied the relationship between unemployment and wage inflation as well as the overall inflation rate.

The Phillips Curve

A.W. Phillips was one of the first economists to present compelling evidence of the inverse relationship between unemployment and wage inflation. Phillips studied the relationship between unemployment and the rate of change of wages in the United Kingdom over a period of almost a full century (1861-1957), and he discovered that the latter could be explained by (a) the level of unemployment and (b) the rate of change of unemployment.

Phillips hypothesized that when demand for labor is high and there are few unemployed workers, employers can be expected to bid wages up quite rapidly. However, when demand for labor is low, and unemployment is high, workers are reluctant to accept lower wages than the prevailing rate, and as a result, wage rates fall very slowly.

A second factor that affects wage rate changes is the rate of change of unemployment. If business is booming, employers will bid more vigorously for workers, which means that demand for labor is increasing at a fast pace (i.e., percentage unemployment is decreasing rapidly), than they would if the demand for labor were either not increasing (e.g., percentage unemployment is unchanging) or only increasing at a slow pace.

Since wages and salaries are a major input cost for companies, rising wages should lead to higher prices for products and services in an economy, ultimately pushing the overall inflation rate higher. As a result, Phillips graphed the relationship between general price inflation and unemployment, rather than wage inflation. The graph is known today as the Phillips Curve.

Implications of the Phillips Curve

Low inflation and full employment are the cornerstones of monetary policy for the modern central bank. For instance, the U.S. Federal Reserve's monetary policy objectives are maximum employment, stable prices, and moderate long-term interest rates.

The tradeoff between inflation and unemployment led economists to use the Phillips Curve to fine-tune monetary or fiscal policy. Since a Phillips Curve for a specific economy would show an explicit level of inflation for a specific rate of unemployment and vice versa, it should be possible to aim for a balance between desired levels of inflation and unemployment.

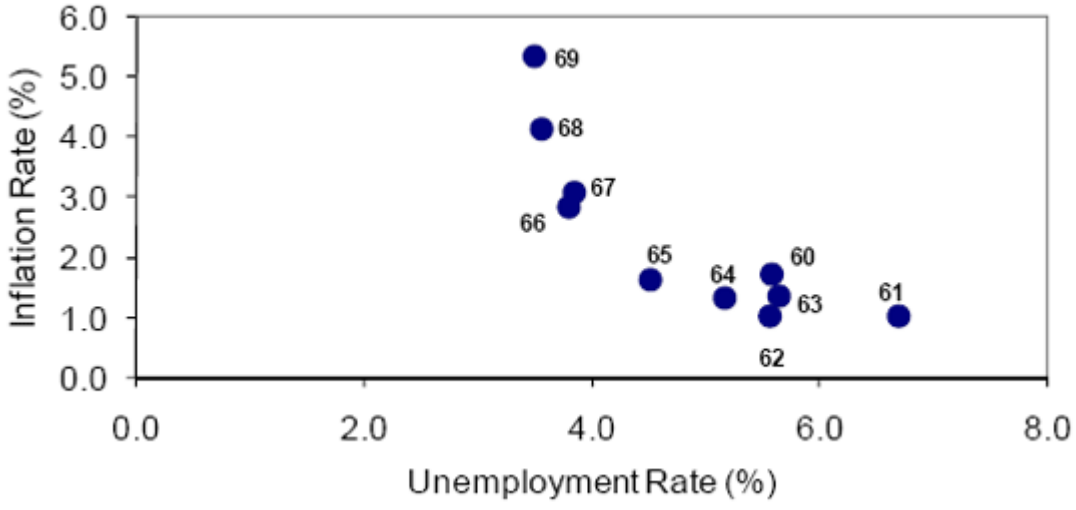
The Consumer Price Index or CPI is the rate of inflation or rising prices in the U.S. economy.

Figure 1 shows the CPI and unemployment rates in the 1960s.

If unemployment was 6% – and through monetary and fiscal stimulus, the rate was lowered to 5% – the impact on inflation would be negligible. In other words, with a 1% fall in unemployment, prices would not rise by much.

If instead, unemployment fell to 4% from 6%, we can see on the left axis that the corresponding inflation rate would rise to 3% from 1%.

Figure 1: **U.S. inflation (CPI) and unemployment rates in the 1960s**



Source: U.S. Bureau of Labor Statistics

Monetarist Rebuttal

The 1960s provided compelling proof of the validity of the Phillips Curve, such that a lower unemployment rate could be maintained indefinitely as long as a higher inflation rate could be tolerated. However, in the late 1960s, a group of economists who were staunch monetarists, led by Milton Friedman and Edmund Phelps, argued that the Phillips Curve does not apply over the long term. They contended that over the long run, the economy tends to revert to the natural rate of unemployment as it adjusts to any rate of inflation.

The natural rate is the long-term unemployment rate that is observed once the effect of short-term cyclical factors has dissipated and wages have adjusted to a level where supply and demand in the labor market are balanced. If workers expect prices to rise, they will demand higher wages so that their real (inflation-adjusted) wages are constant.

In a scenario wherein monetary or fiscal policies are adopted to lower unemployment below the natural rate, the resultant increase in demand will encourage firms and producers to raise prices even faster.

As inflation accelerates, workers may supply labor in the short term because of higher wages – leading to a decline in the unemployment rate. However, over the long-term, when workers are fully aware of the loss of their purchasing power in an inflationary environment, their willingness to supply labor diminishes and the unemployment rate rises to the natural rate. However, wage inflation and general price inflation continue to rise.

Therefore, over the long-term, higher inflation would not benefit the economy through a lower rate of unemployment. By the same token, a lower rate of inflation should not inflict a cost on the economy through a higher rate of unemployment. Since inflation has no impact on the unemployment rate in the long term, the long-run Phillips curve morphs into a vertical line at the natural rate of unemployment.

Friedman's and Phelps' findings gave rise to the distinction between the short-run and long-run Phillips curves. The short-run Phillips curve includes expected inflation as a determinant of the current rate of inflation and hence is known by the formidable moniker "expectations-augmented Phillips Curve."

(**Note:* The natural rate of unemployment is not a static number but changes over time due to the influence of a number of factors. These include the impact of technology, changes in minimum wages, and the degree of unionization. In the U.S., the natural rate of unemployment was at 5.3% in 1949; it rose steadily until it peaked at 6.3% in 1978-79, and then declined afterward. It is expected to be at 4.8% for a decade starting from 2016.)

Breakdown of the Relationship

The 1970s

The monetarists' viewpoint did not gain much traction initially as it was made when the popularity of the Phillips Curve was at its peak. However, unlike the data from the 1960s, which definitively supported the Phillips Curve premise, the 1970s provided significant confirmation of Friedman's and Phelps' theory. In fact, the data at many points over the next three decades do not provide clear evidence of the inverse relationship between unemployment and inflation.

The 1970s were a period of both high inflation and high unemployment in the U.S. due to two massive oil supply shocks. The first oil shock was from the 1973 embargo by Middle East energy producers that caused crude oil prices to quadruple in about a year. The second oil shock occurred when the Shah of Iran was overthrown in a revolution, and the loss of output from Iran caused crude oil prices to double between 1979 and 1980. This development led to both high unemployment and high inflation.

The 1990s

The boom years of the 1990s were a time of low inflation and low unemployment**.** Economists attribute a number of reasons to this positive confluence of circumstances. These include:

- The global competition that kept a lid on price increases by U.S. producers
- Reduced expectations of future inflation as tight monetary policies had led to declining inflation for more than a decade
- Productivity improvements due to large-scale adoption of technology

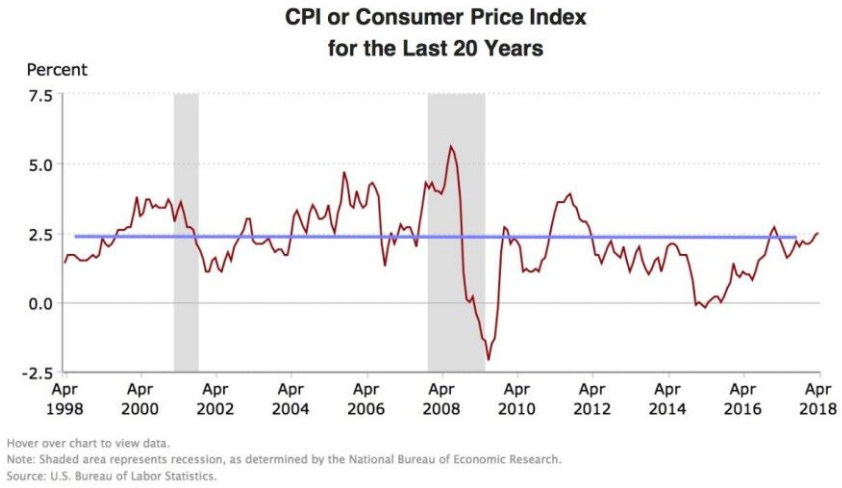
- Demographic changes in the labor force, with more aging baby boomers and fewer teens

Comparing CPI and Unemployment

In the graphs below, we can see the inverse correlation between inflation, as measured by CPI, and unemployment reassert itself, only to break down at times.

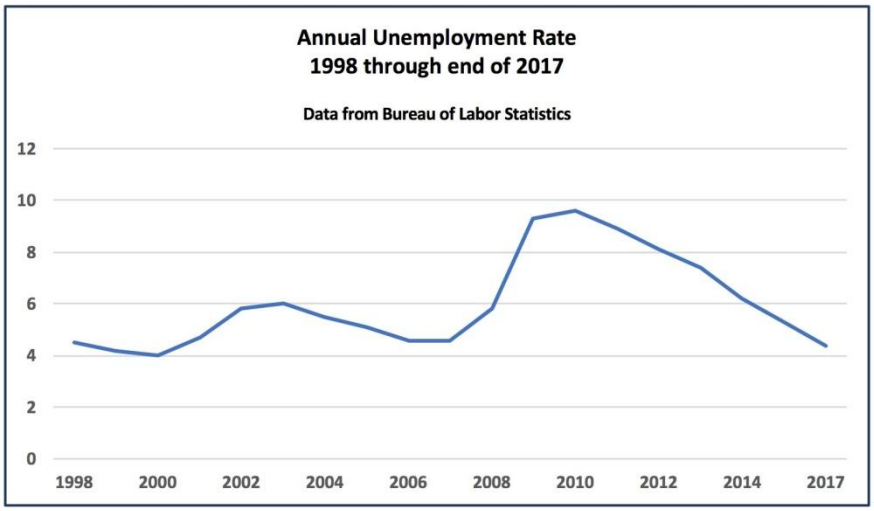
- **In 2001,** the mild recession, as a result of 9-11, pushed unemployment higher to roughly 6% while inflation fell below 2.5%.
- **In the mid-2000s,** as unemployment fell, inflation climbed to almost 5% before coming back down in 2006 when unemployment bottomed.
- **During the Great Recession,** CPI fell dramatically as unemployment soared to almost 10%.
- **From 2012 to 2015,** we can see that the inverse correlation broke down where inflation and unemployment moved in tandem.
- **Over the past two years**, unemployment has fallen, while inflation has begun to rise, albeit not by much.
- Since 2010, U.S. inflation has remained stubbornly low even (currently 2.5%) as the unemployment rate has trended steadily lower from 10% in October 2009 to roughly 4% in 2018. In other words, the inverse correlation between the two indicators isn't as strong as it was in prior years.

U.S. Consumer Price Index (CPI) or Inflation Rate: 1998 to 2017



CPI chart from Bureau of Labor Statistics.

U.S. Unemployment Rate: 1998 to 2017



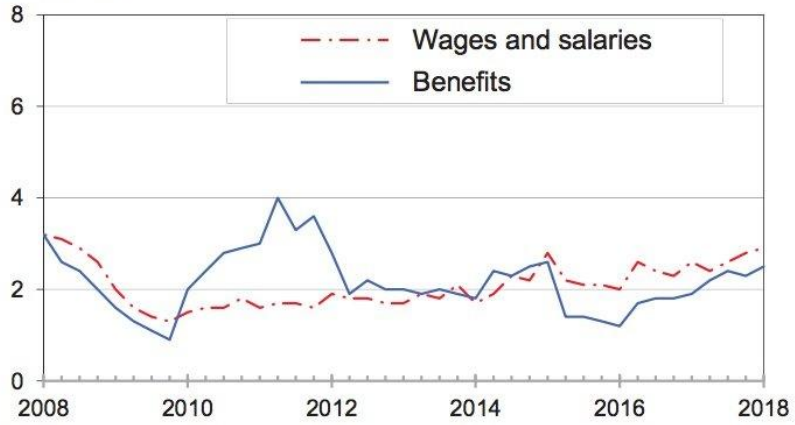
Unemployment Data from Bureau of Labor Statistics.

Wages in the Current Environment

An unusual feature of today's economic environment has been the paltry wage gains despite the declining unemployment rate since the Great Recession.

- In the graph below, the annual percentage change in wages (red dotted line) for the private sector has barely nudged higher since 2008.
- Over most of the past decade, inflation has also been under control.

Chart 4. Twelve-month percent change, not seasonally adjusted, private industry, wages and salaries and benefits



Wage graph from the Bureau of Labor Statistics.

The Bottom Line

The inverse correlation between inflation and unemployment depicted in the Phillips Curve works well in the short run, especially when inflation is fairly constant as it was in the 1960s. It does not hold up over the long-term since the economy reverts to the natural rate of unemployment as it adjusts to any rate of inflation.

Because it's also more complicated than it appears at first glance, the relationship between inflation and unemployment has broken down in periods like the stagflationary 1970s and the booming 1990s.

In recent years, the economy has experienced low unemployment, low inflation, and negligible wage gains. However, the Federal Reserve is currently engaged in tightening monetary policy or hiking interest rates to combat the potential of inflation. We have yet to see how these policy moves will have an impact on the economy, wages, and prices.

Supply and Demand for Labor

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significantly exceeds the number of jobs available. In other words, the supply of labor is greater than the demand for it.

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Over the years, economists have studied the relationship between unemployment and wage inflation as well as the overall inflation rate.

Wage Push Inflation

What is 'Wage Push Inflation'

Wage push inflation is an overall rise in the cost of goods that results from a rise in wages. To maintain corporate profits after an increase in wages, employers must increase the prices they charge for the goods and services they provide. The overall increased cost of goods and services has a circular effect on the wage increase; eventually, as goods and services in the market overall increase, higher wages will be needed to compensate for the increased prices of consumer goods.

BREAKING DOWN 'Wage Push Inflation'

Companies can increase wages for a number of reasons. The most common reason for raising wages is an increase to the minimum wage. The federal and state governments have the power to increase the minimum wage. Consumer goods companies are also known for making incremental wage increases for their workers. These minimum wage increases are a leading factor for wage push inflation. In consumer goods companies especially, wage push inflation is highly prevalent, and its effect is a function of the percentage increase in wages.

Industry Factors Driving Wage Inflation

Industry factors also play a part in driving wage increases. If a specific industry is growing rapidly, companies might raise wages to attract talent or provide higher compensation for their workers as an incentive to help business growth. All such factors have a wage push inflation effect on the goods and services the company provides.

Economists track wages closely because of their wage push inflation effects. Wage push inflation has an inflationary spiral effect that occurs when wages are increased and businesses must — to pay the higher wages — charge more for their products and/or services. Additionally, any wage increase that occurs will increase the money supply of consumers. With a higher money supply, consumers have more spending power, so the demand for goods increases. An increase in demand for goods then increases the price of goods in the broader market. Companies charge more for their goods to pay higher wages, and the higher wages also increase the price of goods in the broader market.

As the cost of goods and services rise at the companies paying higher wages and in the broader market overall, the wage increase is not as helpful to employees, since the cost of goods in the market has also risen. If prices remain increased, workers eventually require another wage increase to compensate for the cost of living increase. The percentage increase of the wages and prices and their overall effect on the market are key factors driving inflation in the economy.

An Example of Wage Inflation

If a state raises the minimum $5 to $20, that company must compensate by increasing the prices of its products on the market. But because the goods become more expensive, that raise isn't enough to propel a consumer's purchasing power, and the wage must be raised again, therefore causing an inflationary spiral.

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Living Wage

DEFINITION of 'Living Wage'

Living wage refers to a theoretical wage level that allows an individual to afford adequate shelter, food and the other necessities. A living wage should be substantial enough to ensure that no more than 30% of it gets spent on housing. The goal of a living wage is to allow employees to earn enough income for a satisfactory standard of living.

BREAKING DOWN 'Living Wage'

The idea of a living wage and its effects on the economy is hotly debated. Critics argue that implementing a living wage establishes a wage floor, which harms the economy. They believe that companies reduce the employees hired if they have to pay increased wages. This creates higher unemployment, resulting in a deadweight loss, as people who would work for less than a living wage no longer get offered employment.

Supporters of a living wage, on the other hand, argue that paying employees higher salaries benefits the company. They believe that employees who earn a living wage are more satisfied, which helps to reduce staff turnover. This reduces expensive recruitment and training costs for the firm. They also point out that higher wages boost morale. Employees with high morale are expected to be more productive, allowing the company to benefit from increased worker output.

Living Wage History

The movement for workers to earn a reasonable living wage is not a new one. Boston ship carpenters came together in 1675 to demand higher pay. The American Federation of Labor

(AFL), founded in 1886, proposed a general living wage that adequately supported a family and maintained a standard of living higher than the 19th-century European urban working class.

Living Wage and Minimum Wage

Many commentators argue that the federal minimum wage should be increased to align with a living wage. They point out that the minimum wage does not provide enough income to survive as it doesn't rise with inflation; the minimum wage can only increase with congressional action. Although the minimum wage dollar amount has risen since its introduction by President Franklin Delano Roosevelt in 1938, the constant dollar amount has decreased since 1968. For example, as of 2017, the federal minimum wage is $7.25 per hour with a constant dollar value of $7.80 per hour. In 1968, the federal minimum wage was $1.60 per hour but had a constant dollar value of $10.75 per hour. Most states have their own minimum wage laws to try and align it more closely with a living wage; however, in some states, the minimum wage is below the federal minimum wage, in which case the federal minimum applies.

Maximum Wage

What is a 'Maximum Wage'

A maximum wage is a ceiling imposed on how much income a worker can earn in a given period of time. A maximum wage is an economic tool used to temper a distressed economy or control spiraling wage inequality in a country.

BREAKING DOWN 'Maximum Wage'

The idea of a maximum wage can be traced back to Aristotle who believed that no one person in Greece should have more than 5 times the wealth of the poorest person. Maximum wage is increasingly becoming a frequent subject of debate in the 21st century as

more CEOs and top executives take home millions of dollars in earnings compared to the minimum wage earned by some of the employees in the same companies.

The maximum wage can be incorporated country-, industry-, or company-wide. The communist country of Cuba has long had a maximum wage capped at $20 per month for almost every job across the nation. Egypt's banking industry was hit hard when over two hundred executives resigned after the country's Central Bank applied a maximum wage law of approximately $5,800 monthly. Switzerland initiated a referendum in 2013, which failed to pass, that would have limited a company's executive pay to twelve times the lowest paid employee's wage.

A maximum wage can be initiated in two forms: As a fixed sum or as a ratio. Franklin Roosevelt, in 1942, proposed a marginal tax rate of 100% for income over $25,000 in order to discourage war profiteering and encourage the rich to make sacrifices in monetary earnings. If Congress hadn't rejected Roosevelt's proposal, $25,000 would have been the cap that any income earner in America was limited to earning annually.

In 2017, British politician Jeremy Corbyn, following Britain's decision to exit the European Union, called for a CEO-to-worker pay ratio of 20:1. If passed into law, this would mean that top executives of companies vying for government contracts would not be able to earn more than twenty times the annual income of the companies' lowest paid workers.

Pros and cons of a maximum wage

Proponents believe that a maximum wage is sure to bolster the economy. If senior officials earn less, there will be more money put into the company that can be used to create more monetary benefits and incentives for employees. The additional funds can also be used to create jobs and hire more employees. With more people working, more taxes will be paid,

which in turn means, the government and the society benefits from a reduction in wages of top executives.

Also, if the wages of top earners of a company are tied directly to that of the minimum wage employees in the same company in the form of a ratio, it is believed that the top managers will be incentivized to increase the minimum wage in order to get an increase in pay themselves. This creates another win-win situation where profits trickle down to the company, government, and economy.

Critics and capitalists argue that when a government gets involved in the price controls of an economy, the economic state of a free market is compromised. By setting maximum wages, companies would have fewer talented leaders and employees, as the more valuable talents would be unwilling to work for a capped fee. A maximum wage legislation could set the stage for human capital flight where the most talented individuals emigrate to other free nations that could pay them their worth. In effect, setting such a policy then, would not lead to a more productive and profitable economy like the advocates believe.

Taxable Wage Base

DEFINITION of 'Taxable Wage Base'

The taxable wage base is the maximum amount of earned income that employees must pay Social Security taxes on. Generally, the employee's gross wages will be equal to the taxable wage base. Typically, an employer will handle this calculation and withhold the correct amount of taxes from each of the employee's paychecks; however, the employee is still responsible for reporting the tax.

The taxable wage base is also known as the Social Security wage base.

BREAKING DOWN 'Taxable Wage Base'

Social Security tax is not applied on wages, salaries, and bonuses in excess of the stipulated maximum amount of wages that is subject to Social Security taxes. As of 2018, the Social Security tax rate is 12.4%. Half of the tax is paid by the employer, and the employee is responsible for paying the other half, that is 6.2%. The maximum amount of income that taxpayers must pay Social Security tax on is $128,400. In other words, the taxable wage base is $128,400.

Consider an employee, Rob, who earns $85,000 in gross income for the tax year 2018 and has a 6.2% Social Security tax withheld from his pay. The federal government, in effect, will collect 6.2% x $85,000 = $5,270 from Rob to help fund retirement and disability benefits for retirees. In some instances, an employee will earn wages that can be classified as excess wage. The excess wage can be subtracted from gross income so that the taxable wage base is lower than gross income. For example, assume another employee, Sue, earns $175,000 gross income. The Social Security tax rate will only be applied up to the taxable wage base of $128,400, which is less than her gross income. Therefore, Sue will pay 6.2% x $128,400 = $7,960.80 as her contribution to the country's Social Security account for retirees and the disabled.

Taxable wage base is most often used in reference to Social Security taxes, though it can apply to any income-based tax. For example, some state unemployment agencies use a taxable wage base to calculate unemployment taxes. In California, the taxable wage base (as of 2018) is $7,000, Ohio - $9,500, Pennsylvania - $10,000, New York - $11,100, Connecticut - $15,000, Oklahoma - $17,600, Wyoming - $24,700, Nevada - $30,500, Hawaii - $45,900, etc. Refer to the American Payroll Association website for the unemployment insurance taxable wage base for all states.

The taxable wage base for Social Security and Unemployment taxes increases every year or every few years. Note that although Social Security tax is applied up to the taxable wage base, Medicare tax is applied on 100% of income.

Minimum Wage

What is 'Minimum Wage'

A minimum wage is the lowest wage per hour that a worker may be paid, as mandated by federal law. The minimum wage is a legally mandated price floor on hourly wages, below which non-exempt workers may not be offered or accept a job.

As of 2017, the federal minimum wage rate in the United States is $7.25 per hour. This means that it is illegal for an American worker to sell their labor for less than $7.25 per hour unless the worker falls into a category specifically exempted from the Fair Labor Standards Act (FLSA).

BREAKING DOWN 'Minimum Wage'

Minimum wage laws were first used in Australia and New Zealand in an attempt to raise the income of unskilled workers. Most modern developed economies and many underdeveloped economies enforce a national minimum wage. Examples of countries with no established minimum wage include Sweden, Denmark, Iceland, Norway, Switzerland and Singapore.

ederal, State and Municipal Minimum Wages

Even though the United States enforces a federal minimum wage, individual states, cities, and localities may also pass different minimum wage requirements as long as the stipulated hourly wage is not lower than the federal minimum wage. An employer who is subject to

the federal and state minimum wage requirement must pay the higher of the two. States will usually set a minimum wage that is reflective of the cost of living in the region. For example, the state of Massachusetts has a minimum wage of $11 per hour, compared to Arkansas which has a minimum wage rate of $8.50. As of 2017, minimum wage rates exceeded the federal rate in 29 of the 50 states, led by Massachusetts and Washington at $11 per hour. Some states like Alabama, New Hampshire, and South Carolina have no state minimum wage.

Cities and municipalities may also set a minimum wage for their residents which must be higher than the federal minimum wage. For example, even though the state of Illinois set its minimum wage at $8.25, the city of Chicago has a minimum wage of $11.00.

The government periodically assesses the federal minimum wage level for changes in inflation or cost of living. The table shows the minimum wage set at each state level. Some states have set their minimum wage higher than the federal minimum wage, others have set the same minimum wage as the federal rate, and a select few don't have a minimum wage requirement. In the latter case, the federal minimum wage of $7.25 will apply.

State	Minimum Wage	Notes
Alabama (AL)	None	Subject to federal minimum wage of $7.25
Alaska (AK)	$9.80	
Arizona (AZ)	$10.00	$10.50 effective January 1, 2018
Arkansas (AR)	$8.50	
California (CA)	$10.50	$11.00 effective January 1, 2018
Colorado (CO)	$9.30	$10.20 effective January 1, 2018
Connecticut (CT)	$10.10	
Delaware (DE)	$8.25	
District of	$12.50	$13.25 effective July 1, 2018

Columbia (DC)		
Florida (FL)	$8.10	
Georgia (GA)	$5.50	Employees covered under FLSA are subject to federal minimum wage of $7.25
Hawaii (HI)	$9.25	$10.10 effective January 1, 2018
Idaho (ID)	$7.25	
Illinois (IL)	$8.25	
Indiana (IN)	$7.25	
Iowa (IA)	$7.25	
Kansas (KS)	$7.25	
Kentucky (KY)	$7.25	
Louisiana (LA)	None	Subject to federal minimum wage of $7.25
Maine (ME)	$9.00	$10.00 effective January 1, 2018
Maryland (MD)	$9.25	$10.10 effective July 1, 2018
Massachusetts (MA)	$11.00	
Michigan (MI)	$8.90	$9.25 effective January 1, 2018
Minnesota (MN)	$9.50	For employers with annual sales less than $500,000, minimum wage is $7.75
Mississippi (MS)	None	Subject to federal minimum wage of $7.25
Missouri (MO)	$7.70	
Montana (MT)	$8.15	
Nebraska (NE)	$9.00	
Nevada (NV)	$8.25	If health benefits are included, minimum wage is $7.25
New Hampshire (NH)	$7.25	
New Jersey (NJ)	$8.44	
New Mexico (NM)	$7.50	

New York (NY)	$9.70	$10.40 effective December 31, 2017
North Carolina (NC)	$7.25	
North Dakota (ND)	$7.25	
Ohio (OH)	$8.15	For employers with gross annual sales of $299,000 or less, minimum wage is $7.25
Oklahoma (OK)	$7.25	For employers with less than 10 full-time employees at any one location and employers with less than $100,000 in annual gross sales, minimum wage is $2.00
Oregon (OR)	$10.25	$10.75 effective July 1, 2018
Pennsylvania (PA)	$7.25	
Rhode Island (RI)	$9.60	
South Carolina (SC)	None	Subject to federal minimum wage of $7.25
South Dakota (SD)	$8.65	
Tennessee (TN)	None	Subject to federal minimum wage of $7.25
Texas (TX)	$7.25	
Utah (UT)	$7.25	
Vermont (VT)	$10.00	$10.50 effective January 1, 2018
Virginia (VA)	$7.25	
Washington (WA)	$11.00	$11.50 effective January 1, 2018
West Virginia (WV)	$8.75	
Wisconsin (WI)	$7.25	
Wyoming (WY)	$5.15	

Economics of the Minimum Wage

Like all price floors, a minimum wage law only has a measurable effect when set above the market clearing price for a transaction. For example, a minimum wage of $10 per hour will have no effect for workers whose marginal productivity in a given line of work is greater than $10 per hour. The legal supply and demand remains unchanged for such labor.

For those with a marginal productivity less than $10 per hour, however, a $10 per hour minimum wage creates an artificial shortage of profitable labor. An unskilled worker with a marginal productivity of $8 per hour in California or Massachusetts can only offer to work at a loss to his or her potential employer — that is, the employer can only hire the worker if they are willing to pay more in salary than marginal revenue produced by the worker, or unless the employer incorrectly estimates the worker's marginal productivity to be above $10 per hour.

Minimum Wage Exceptions

Several groups of individuals are exempt from being paid the minimum wage. Individuals that fall into these groups are usually paid below the minimum wage in order to incentivize companies to hire them.

Low-skilled laborers in the United States can be exempted from the minimum wage if a sizable portion of their income is derived from tips. If exempted, a lower minimum wage of $2.13 per hour applies to tipped employees who regularly receive more than $30 in tips per month, or if the total tips retained in addition to the hourly wage rate is equal to or greater than the federal minimum wage. In a case where the employee's total tips and hourly rate falls below the minimum wage, the employer is expected to compensate the employee for the shortfall.

A full-time student working for a university, retail store, or service establishment can be paid not less than 85% of the minimum wage. Although students may work up to 8 hours per day, they cannot work more than 20 hours per week when school is in session. In addition, students in a technical or vocational program can be paid not less than 75% of the minimum wage throughout their active enrollment in the program.

Workers below 20 years of age may be paid $4.25 per hour by federal law, until they pass the three-month probationary period, after which the employer must convert their pay structure to the federal minimum wage rate.

Finally, workers with physical or mental disabilities can be paid less than the federal minimum wage according to the Fair Labor Standards Act (FLSA). Disabilities which can affect production capacity include blindness, cerebral palsy, alcohol and drug addiction, mental illness, and developmental disabilities.

What is 'Minimum Wage'

A minimum wage is the lowest wage per hour that a worker may be paid, as mandated by federal law. The minimum wage is a legally mandated price floor on hourly wages, below which non-exempt workers may not be offered or accept a job.

As of 2017, the federal minimum wage rate in the United States is $7.25 per hour. This means that it is illegal for an American worker to sell their labor for less than $7.25 per hour unless the worker falls into a category specifically exempted from the Fair Labor Standards Act (FLSA).

Next Up

1. **Wage Push Inflation**
2. **Maximum Wage**
3. **Wage Expense**
4. **Account Minimum**
5.

BREAKING DOWN 'Minimum Wage'

Minimum wage laws were first used in Australia and New Zealand in an attempt to raise the income of unskilled workers. Most modern developed economies and many underdeveloped economies enforce a national minimum wage. Examples of countries with

no established minimum wage include Sweden, Denmark, Iceland, Norway, Switzerland and Singapore.

Federal, State and Municipal Minimum Wages

Even though the United States enforces a federal minimum wage, individual states, cities, and localities may also pass different minimum wage requirements as long as the stipulated hourly wage is not lower than the federal minimum wage. An employer who is subject to the federal and state minimum wage requirement must pay the higher of the two. States will usually set a minimum wage that is reflective of the cost of living in the region. For example, the state of Massachusetts has a minimum wage of $11 per hour, compared to Arkansas which has a minimum wage rate of $8.50. As of 2017, minimum wage rates exceeded the federal rate in 29 of the 50 states, led by Massachusetts and Washington at $11 per hour. Some states like Alabama, New Hampshire, and South Carolina have no state minimum wage.

Cities and municipalities may also set a minimum wage for their residents which must be higher than the federal minimum wage. For example, even though the state of Illinois set its minimum wage at $8.25, the city of Chicago has a minimum wage of $11.00.

The government periodically assesses the federal minimum wage level for changes in inflation or cost of living. The table shows the minimum wage set at each state level. Some states have set their minimum wage higher than the federal minimum wage, others have set the same minimum wage as the federal rate, and a select few don't have a minimum wage requirement. In the latter case, the federal minimum wage of $7.25 will apply.

State	Minimum Wage	Notes
Alabama (AL)	None	Subject to federal minimum wage of $7.25
Alaska (AK)	$9.80	
Arizona (AZ)	$10.00	$10.50 effective January 1, 2018
Arkansas (AR)	$8.50	
California (CA)	$10.50	$11.00 effective January 1, 2018

Colorado (CO)	$9.30	$10.20 effective January 1, 2018
Connecticut (CT)	$10.10	
Delaware (DE)	$8.25	
District of Columbia (DC)	$12.50	$13.25 effective July 1, 2018
Florida (FL)	$8.10	
Georgia (GA)	$5.50	Employees covered under FLSA are subject to federal minimum wage of $7.25
Hawaii (HI)	$9.25	$10.10 effective January 1, 2018
Idaho (ID)	$7.25	
Illinois (IL)	$8.25	
Indiana (IN)	$7.25	
Iowa (IA)	$7.25	
Kansas (KS)	$7.25	
Kentucky (KY)	$7.25	
Louisiana (LA)	None	Subject to federal minimum wage of $7.25
Maine (ME)	$9.00	$10.00 effective January 1, 2018
Maryland (MD)	$9.25	$10.10 effective July 1, 2018
Massachusetts (MA)	$11.00	
Michigan (MI)	$8.90	$9.25 effective January 1, 2018
Minnesota (MN)	$9.50	For employers with annual sales less than $500,000, minimum wage is $7.75
Mississippi (MS)	None	Subject to federal minimum wage of $7.25
Missouri (MO)	$7.70	
Montana (MT)	$8.15	
Nebraska (NE)	$9.00	
Nevada (NV)	$8.25	If health benefits are included, minimum wage is $7.25

New Hampshire (NH)	$7.25	
New Jersey (NJ)	$8.44	
New Mexico (NM)	$7.50	
New York (NY)	$9.70	$10.40 effective December 31, 2017
North Carolina (NC)	$7.25	
North Dakota (ND)	$7.25	
Ohio (OH)	$8.15	For employers with gross annual sales of $299,000 or less, minimum wage is $7.25
Oklahoma (OK)	$7.25	For employers with less than 10 full-time employees at any one location and employers with less than $100,000 in annual gross sales, minimum wage is $2.00
Oregon (OR)	$10.25	$10.75 effective July 1, 2018
Pennsylvania (PA)	$7.25	
Rhode Island (RI)	$9.60	
South Carolina (SC)	None	Subject to federal minimum wage of $7.25
South Dakota (SD)	$8.65	
Tennessee (TN)	None	Subject to federal minimum wage of $7.25
Texas (TX)	$7.25	
Utah (UT)	$7.25	
Vermont (VT)	$10.00	$10.50 effective January 1, 2018
Virginia (VA)	$7.25	
Washington (WA)	$11.00	$11.50 effective January 1, 2018
West Virginia (WV)	$8.75	
Wisconsin (WI)	$7.25	

Wyoming (WY)	$5.15	

Economics of the Minimum Wage

Like all price floors, a minimum wage law only has a measurable effect when set above the market clearing price for a transaction. For example, a minimum wage of $10 per hour will have no effect for workers whose marginal productivity in a given line of work is greater than $10 per hour. The legal supply and demand remains unchanged for such labor.

For those with a marginal productivity less than $10 per hour, however, a $10 per hour minimum wage creates an artificial shortage of profitable labor. An unskilled worker with a marginal productivity of $8 per hour in California or Massachusetts can only offer to work at a loss to his or her potential employer — that is, the employer can only hire the worker if they are willing to pay more in salary than marginal revenue produced by the worker, or unless the employer incorrectly estimates the worker's marginal productivity to be above $10 per hour.

Minimum Wage Exceptions

Several groups of individuals are exempt from being paid the minimum wage. Individuals that fall into these groups are usually paid below the minimum wage in order to incentivize companies to hire them.

Low-skilled laborers in the United States can be exempted from the minimum wage if a sizable portion of their income is derived from tips. If exempted, a lower minimum wage of $2.13 per hour applies to tipped employees who regularly receive more than $30 in tips per month, or if the total tips retained in addition to the hourly wage rate is equal to or greater than the federal minimum wage. In a case where the employee's total tips and hourly rate falls below the minimum wage, the employer is expected to compensate the employee for the shortfall.

A full-time student working for a university, retail store, or service establishment can be paid not less than 85% of the minimum wage. Although students may work up to 8 hours per day, they cannot work more than 20 hours per week when school is in session. In addition,

students in a technical or vocational program can be paid not less than 75% of the minimum wage throughout their active enrollment in the program.

Workers below 20 years of age may be paid $4.25 per hour by federal law, until they pass the three-month probationary period, after which the employer must convert their pay structure to the federal minimum wage rate.

Finally, workers with physical or mental disabilities can be paid less than the federal minimum wage according to the Fair Labor Standards Act (FLSA). Disabilities which can affect production capacity include blindness, cerebral palsy, alcohol and drug addiction, mental illness, and developmental disabilities.

Effects on Unemployment

There is a high elasticity of demand for low-skilled labor. This means that a small change in the price for low-skilled labor tends to have a large effect on its demand. For these reasons, too high a minimum wage can lead to increasing unemployment among the low-skilled.

In modern times, the proliferation of improved technology also increases the marginal rate of technical substitution for low-skilled labor. When the cost of labor increases, companies find it increasingly profitable to switch to labor-replacing technology, such as the decision made by Wendy's Co. in 2016 to introduce self-serve kiosks in response to higher minimum wage laws.

Wage Expense

What is a 'Wage Expense'

Wage expense is the cost incurred by companies to pay hourly employees. This line item may also include payroll taxes and benefits paid to employees. Wage expense may be recorded as a line item in the expense portion of the income statement.

BREAKING DOWN 'Wage Expense'

Wage expenses are sometimes reported by department, and they are most likely to be reported separately for the production department. This department is often the one with the most hourly employees. On the other hand, wage expenses for production workers may be incorporated into the cost of goods sold (COGS) item on the income statement.

Wage expenses vary from one period to the next, depending on the number of business days in the period and the amount of overtime to be paid. Business days vary from month to month and may be affected by the number of holidays during the period.

Under the accrual method of accounting, wage expenses are recorded based on when the work was performed. In contrast, under the cash method of accounting, wage expenses are recorded at the time the payments are made.

Real Income

What is 'Real Income'

Real income refers to the income of an individual or group after taking into consideration the effects of inflation on purchasing power. For example, if you receive a 2% salary increase over the previous year and inflation for the year is 1%, then your real income only increases by 1%. Conversely, if you receive a 2% raise in salary and inflation is at 3%, then your real income shrinks by 1%.

BREAKING DOWN 'Real Income'

Real income, also called real wages, refers to the amount of goods and services you can buy today compared to the price of the same goods and services you could have purchased in another time period. For example, if it costs you $2,000 more to purchase the same amount of goods and services (such as food, gas, rent and utilities) this year compared to last year, and your annual income is the same, then your real income has actually decreased by $2,000.

How Real Income Relates to the Consumer Price Index

As real income measures the purchasing power of an individual's wages, analysts often compare it to the Consumer Price Index (CPI). The CPI measures the average cost of a basket of goods including food and beverages, education, recreation, clothing, transportation, and medical care. In the United States, the Bureau of Labor Statics publishes CPI numbers monthly and annually.

How to Calculate Real Income and Purchasing Power

Real income generally compares the purchasing power of income from one year to the cost of goods in another year, and real income can also help you compare wages from two different years, taking inflation or changes to the CPI into account. To compare wages from two different time periods, take the wage from one period and multiply it by the CPI of the other period. Then, divide the product by the CPI from the original time period.

For example, imagine you earned $12 per hour in 2003 and you earned $25 per hour in 2015. If you want to ascertain how your real income has changed over that 13-year period, you need to calculate your 2003 wage in terms of 2015 prices. The CPI for all items in 2003 was 184, while the CPI for 2015 was 236. To continue, multiply $12 (your 2003 wage) by the

CPI in 2015. The result is $2,832. Then, divide that number by the CPI from 2003 to get $15.39. This means your 2003 wages are worth $15.39 in 2016, taking inflation into account.

To calculate the change in your purchasing power, subtract the purchasing power of your old wage from the wage to which you are comparing it. In this case, $25 - $15.39 = $9.61. In terms of real income, you earn $9.61 more in 2015 than you did in 2003. To express this change as a percentage, divide the difference by the purchasing power of your old wage. In this case, $9.61/$15.39 indicates your real income increased by 0.624 or 62.4% from 2003 to 2015.

Reference :

https://www.investopedia.com/terms/r/realincome.asp

www.economicshuman.com