

Texas Public Policy Foundation



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Examining the **Effects** of a Minimum Wage on the Labor Market...

An **Experiment**



Summary

This experiment provides an interactive exercise to help the public understand how the labor market works and how a government mandated price control—the minimum wage—affects this market.

Key Points

- The minimum wage experiment includes three sessions providing groups with an opportunity to explore how an unhampered labor market compares with one hampered by a price control—minimum wage.
- SESSION 1 includes a scenario with an unhampered labor market that provides efficient outcomes with few unemployed but potentially at a socially unacceptable low average wage.
- SESSION 2 includes a mandated minimum wage of \$15 that generates a higher average wage but with many more unemployed.
- SESSION 3 includes workers having higher levels of productivity resulting in a higher average wage with few unemployed.

Acknowledgements

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Instructor Directions

Purpose:

This experiment provides an interactive exercise to help the public understand how the labor market works and how a government mandated price control—the minimum wage—affects this market.

Target Audience:

Any group interested in understanding how the labor market works, particularly high school and college students.

Instructions:

Before starting the experiment, you should know the group size. Print a sufficient number of instruction sheets and different player type sheets according to the instructions below. Place ID numbers on each player types (Type A, B, and C) with a number/letter scale: 1-A, 2-A, 3-A,..., 1-B, 2-B, 3-B,..., 1-C, 2-C, 3-C,...

After organizing these documents, you may proceed to do the following:

1. Pass out the student instruction sheet.
2. Ask for volunteers to be firms (Type C). 1/4 of the class will need to be a firm. This ratio is very important; you should err on the side of too many firms. Print the firm sheets in a special color so everyone easily sees them.
3. The rest of the class (3/4) is then divided equally between the two worker types (Type A and B). For an odd number of workers, it is okay to have one more A than B type. For workers, use the same color paper, and urge the workers to keep their reservation wages secret, as you would in a job interview.
4. Go over the student instructions. Write the total revenue per worker on the board so everyone understands their labor value. Remind them to use whole numbers only.
5. Open it up for trading.
6. After the market has cleared, roll-call the firms and enter their wage data in a spreadsheet. Fill in the white cells in a spreadsheet that everyone can see. Discuss the average workers' wage and firms' profit. Then start the next round of play.

Typically, you will play two rounds of Session 1, one round of session 2, and two or three rounds of session 3. Session 3 provides the most information about labor productivity and higher wages, but you may need to urge the workers to negotiate better for higher wages. Expect low wages in Session 1 (around \$8); high wages in Session 2 (\$15), but lots of unemployment (firms should hire only one worker); and very high wages (above \$17) in Session 3 with no unemployment.

In the discussion afterwards, discuss the differences in each session's set-up. You might help them realize that the real solution for workers to make higher wages is to increase their productivity (Session 3), not just making a new law mandating that they be paid more (Session 2). Discuss how in Session 3 everyone is much better off by workers having a high-paying job and firms having excellent profits.

At the conclusion of the experiment, you might rank and award bonus points to the players. For example, you could award a candy bar, homework points, etc. to each worker type who negotiates the highest wage and the person who has the highest firm profit in each round.

Participant Instructions

Instructions:

Some participants in the experiment will be workers and some will be firms. Three sessions will take place (with multiple rounds within each session). In the first and third sessions, there will be no legal minimum wage. In the second session, there will be a legal minimum wage of \$15.

Incentives: The better you perform your duties in the game, the more you will be rewarded. Top performing players within each player-type (Type A, Type B, or Type C) will earn a higher reward than lower ranked players. (You compete only against players of your type, not the whole class).

Workers (Type A and Type B):

You may either take a job or remain unemployed. If you remain unemployed you will get a payment equal to the reservation wage listed on your personal information sheet, and you will need to put your ID number and reservation wage on the Unemployment Register.

Hint: Your goal is to find the highest possible wage that is above your reservation wage. You should never accept a wage that is below your reservation wage. (A reservation wage is determined by the amount of unemployment benefits that are available, earnings that can be made in self-employed activities, and the value one places on leisure time.)

Employers (Type C):

In the first two sessions, each employer can hire zero, one, or two workers. In these sessions, the revenue from your output will be \$0 if you hire zero workers, \$20 if you hire one worker, and \$30 if you hire two workers.

In the third session, each employer can hire up to four workers. The revenue from your output in this case will be worth \$0 if you hire zero workers, \$30 if you hire one worker, \$55 if you hire two workers, \$75 if you hire three workers, and \$95 if you hire four workers.

Profits are equal to the total revenue minus the total amount of wages that you pay out.

Hint: Your goal is to maximize profits, not (necessarily) the number of workers.

NAME _____
TYPE A

WORKER ID _____

Session 1 - In this session, your reservation wage is \$12.50. Your goal is to find the highest wage possible that is above this reservation wage. You may accept only one job per round, and you may not break an employment deal. Use only whole numbers for wages.

(Tips: Never accept a job that pays below your reservation wage & keep your reservation wage secret when negotiating salary.)

| | Round 1 | Round 2 |
|----------------------------|---------|---------|
| Wage Paid | | |
| Employing Firm's Name & ID | | |

If you cannot find a job that pays above your reservation wage, then enter "unemployed" in the table above and put your name and reservation wage on the Unemployment Register.

Session 2 - In this session, your reservation wage is \$5.50. Your goal is to find the highest wage possible that is above this reservation wage, but you may NOT accept a job that pays below the legal minimum wage, which is \$15. You may take only one job per round, and you may not break an employment deal. Use only whole numbers for wages.

| | Round 1 | Round 2 |
|----------------------------|---------|---------|
| Wage Paid | | |
| Employing Firm's Name & ID | | |

If you cannot find a job, then enter "unemployed" in the table above and put your name and reservation wage on the Unemployment Register.

Session 3 - In this session, your reservation wage is \$12.50. Your goal is to find the highest wage possible that is above this reservation wage. You may take only one job per round, and you may not break an employment deal. Use only whole numbers for wages.

| | Round 1 | Round 2 |
|----------------------------|---------|---------|
| Wage Paid | | |
| Employing Firm's Name & ID | | |

If you cannot find a job, then enter "unemployed" in the table above and put your name and reservation wage on the Unemployment Register.

NAME _____
TYPE B

WORKER ID _____

Session 1 - In this session, your reservation wage is \$5.50. Your goal is to find the highest wage possible that is above this reservation wage. You may accept only one job per round, and you may not break an employment deal. Use only whole numbers for wages.

(Tips: Never accept a job that pays below your reservation wage & keep your reservation wage secret when negotiating salary.)

| | Round 1 | Round 2 |
|----------------------------|---------|---------|
| Wage Paid | | |
| Employing Firm's Name & ID | | |

If you cannot find a job that pays above your reservation wage, then enter "unemployed" in the table above and put your name and reservation wage on the Unemployment Register.

Session 2 - In this session, your reservation wage is \$12.50. Your goal is to find the highest wage possible that is above this reservation wage, but you may NOT accept a job that pays below the legal minimum wage, which is \$15. You may take only one job per round, and you may not break an employment deal. Use only whole numbers for wages.

| | Round 1 | Round 2 |
|----------------------------|---------|---------|
| Wage Paid | | |
| Employing Firm's Name & ID | | |

If you cannot find a job, then enter "unemployed" in the table above and put your name and reservation wage on the Unemployment Register.

Session 3 - In this session, your reservation wage is \$5.50. Your goal is to find the highest wage possible that is above this reservation wage. You may take only one job per round, and you may not break an employment deal. Use only whole numbers for wages.

| | Round 1 | Round 2 |
|----------------------------|---------|---------|
| Wage Paid | | |
| Employing Firm's Name & ID | | |

If you cannot find a job, then enter "unemployed" in the table above and put your name and reservation wage on the Unemployment Register.

NAME _____
TYPE C

WORKER ID _____

Session 1 - In this session, you have two positions open. If you hire zero workers, your revenue is zero and your profit is zero. If you hire one worker, your total revenue is **\$20**. If you hire two workers, your total revenue is **\$30**. Record each transaction in the table below. Use only whole numbers for wages.

(Tip: Your goal is to **maximize total profit** (profit = revenue – wage costs).)

| | Round 1 | Round 2 |
|--|---------|---------|
| Position 1: Wage Paid | | |
| Worker's Name & ID | | |
| Position 2: Wage Paid | | |
| Worker's Name & ID | | |
| Total Wage Costs | | |
| Total Revenue | | |
| Total Profit (Revenue - Wage Costs) | | |

Session 2 - In this session, you have two positions open. If you hire zero workers, your revenue is zero and your profit is zero. If you hire one worker, your total revenue is **\$20**. If you hire two workers, your total revenue is **\$30**. You may NOT pay any worker less than the legal minimum wage, which is \$15. Record each transaction in the table below. Use only whole numbers for wages.

| | Round 1 | Round 2 |
|--|---------|---------|
| Position 1: Wage Paid | | |
| Worker's Name & ID | | |
| Position 2: Wage Paid | | |
| Worker's Name & ID | | |
| Total Wage Costs | | |
| Total Revenue | | |
| Total Profit (Revenue - Wage Costs) | | |

NAME _____
 TYPE C

WORKER ID _____

Session 3 - In this session, you have four positions open. If you hire zero workers, your revenue is zero and your profit is zero. If you hire one worker, your total revenue is **\$30**. If you hire two workers, your total revenue is **\$55**. If you hire three workers, your total revenue is **\$75**. If you hire four workers, your total revenue is **\$95**. Record each transaction in the table below. Use only whole numbers for wages.

| | Round 1 | Round 2 |
|--|---------|---------|
| Position 1: Wage Paid | | |
| Worker's Name & ID | | |
| Position 2: Wage Paid | | |
| Worker's Name & ID | | |
| Position 3: Wage Paid | | |
| Worker's Name & ID | | |
| Position 4: Wage Paid | | |
| Worker's Name & ID | | |
| Total Wage Costs | | |
| Total Revenue | | |
| Total Profit (Revenue - Wage Costs) | | |

UNEMPLOYMENT REGISTER

SESSION _____

ROUND _____

| | Name & ID | Reservation Wage |
|----|----------------------|-------------------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |
| 21 | | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |

| SESSION 2 | | | | | | |
|--|--------|--------|---------------|---------------------------------|--------------|---|
| Number of Firms = <input type="text" value="14"/> Workers with Low Reservation Wage = <input type="text" value="21"/> Workers with High Reservation Wage = <input type="text" value="21"/> | | | | | | |
| Round 1 | | | | | | |
| | Wage 1 | Wage 2 | Total Revenue | Total Costs | PROFIT | |
| FIRM ID | 1 - C | 15 | | 20 | 15 | 5 |
| | 2 - C | 15 | | 20 | 15 | 5 |
| | 3 - C | 15 | | 20 | 15 | 5 |
| | 4 - C | 15 | | 20 | 15 | 5 |
| | 5 - C | 15 | | 20 | 15 | 5 |
| | 6 - C | 15 | | 20 | 15 | 5 |
| | 7 - C | 15 | 15 | 30 | 30 | 0 |
| | 8 - C | 15 | | 20 | 15 | 5 |
| | 9 - C | 15 | | 20 | 15 | 5 |
| | 10 - C | 15 | | 20 | 15 | 5 |
| | 11 - C | 15 | | 20 | 15 | 5 |
| | 12 - C | 16 | | 20 | 16 | 4 |
| | 13 - C | 15 | | 20 | 15 | 5 |
| | 14 - C | 16 | | 20 | 16 | 4 |
| Number Unemployed at Low Reservation Wage = | | | | <input type="text" value="14"/> | Average Wage | |
| Number Unemployed at High Reservation Wage = | | | | <input type="text" value="13"/> | \$15.13 | |

| SESSION 3 | | | | | | | | |
|--|--------|--------|--------|--------------------------------|---------------|-------------|--------|----|
| Number of Firms = <input type="text" value="14"/> Workers with Low Reservation Wage = <input type="text" value="21"/> Workers with High Reservation Wage = <input type="text" value="21"/> | | | | | | | | |
| Round 1 | | | | | | | | |
| | Wage 1 | Wage 2 | Wage 3 | Wage 4 | Total Revenue | Total Costs | PROFIT | |
| FIRM ID | 1 - C | 15 | 15 | 15 | | 75 | 45 | 30 |
| | 2 - C | 16 | 16 | 16 | 16 | 95 | 64 | 31 |
| | 3 - C | 15 | 15 | 15 | 15 | 95 | 60 | 35 |
| | 4 - C | 15 | 15 | 15 | 15 | 95 | 60 | 35 |
| | 5 - C | 17 | 17 | 15 | 16 | 95 | 65 | 30 |
| | 6 - C | 15 | 16 | 18 | 15 | 95 | 64 | 31 |
| | 7 - C | 16 | | | | 30 | 16 | 14 |
| | 8 - C | 15 | | | | 30 | 15 | 15 |
| | 9 - C | 15 | 15 | 15 | 15 | 95 | 60 | 35 |
| | 10 - C | 20 | 16 | | | 55 | 36 | 19 |
| | 11 - C | 15 | 16 | 16 | | 75 | 47 | 28 |
| | 12 - C | 16 | 16 | | | 55 | 32 | 23 |
| | 13 - C | 15 | 15 | 15 | 15 | 95 | 60 | 35 |
| | 14 - C | 15 | 15 | | | 55 | 30 | 25 |
| Number Unemployed at Low Reservation Wage = | | | | <input type="text" value="0"/> | Average Wage | | | |
| Number Unemployed at High Reservation Wage = | | | | <input type="text" value="0"/> | \$15.57 | | | |

About the Author



Vance Ginn, Ph.D. is an economist in the Center for Fiscal Policy at the Texas Public Policy Foundation. In 2006, he graduated with honors from Texas Tech University with a B.B.A in economics and accounting and minors in political science and mathematics. After interning for a U.S. Texas Congressman in Washington, D.C., he started his doctoral degree in economics at Texas Tech University and graduated in 2013. Before joining the Foundation in September 2013, Ginn interned at the Foundation as a Charles G. Koch Summer Fellow in 2011 and taught at three universities and one community college across Texas. He has successfully published peer-reviewed articles in academic journals, commentaries in multiple outlets, and posts in free market blogs. His research interests include free markets, fiscal policy, energy topics, monetary issues, and economic modeling.

About the Texas Public Policy Foundation

The Texas Public Policy Foundation is a 501(c)3 non-profit, non-partisan research institute. The Foundation's mission is to promote and defend liberty, personal responsibility, and free enterprise in Texas and the nation by educating and affecting policymakers and the Texas public policy debate with academically sound research and outreach.

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The public is demanding a different direction for their government, and the Texas Public Policy Foundation is providing the ideas that enable policymakers to chart that new course.

