

The Invisible Hand

Determining the Economic Effects of Gasoline Price Controls

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Foreword

Students learn more when they care about what they are learning. Students understand concepts better if they see how these concepts apply to the world outside of school. Students retain information longer if they are actively engaged in discussion and demonstration of what they are learning.

These are hardly new ideas, but too much of what happens in American classrooms does not meet this ideal. *Project Based Economics (PBE)* is built upon these principles. It addresses the concepts and content defined by the *Voluntary National Content Standards in Economics*, but does it in such a way that this material becomes meaningful and involving to students. *PBE* reverses the traditional method of “teach the concepts first, then give students the opportunity to apply them.” Instead, *PBE* places students in an interesting scenario with an open-ended problem to solve and asks them to arrive at a justifiable solution using economic concepts. The project thus “pulls” students through the content. The teacher’s role is to clarify, facilitate, and guide, rather than “push” unmotivated students toward the learning objectives.

Additionally, the *PBE* methodology helps teachers build valuable interdisciplinary “21st-century skills” including collaboration, critical thinking/problem solving, and making a presentation. We have found that *PBE* works well for diverse students in a variety of school settings. Research comparing students’ economic knowledge gained from *PBE* versus that gained by students who received traditional instruction has demonstrated that the *PBE* students learn more, and that this difference is statistically significant.

These units were developed collaboratively by the Buck Institute for Education, and the HIRE Center, California State University–East Bay. They have been pilot-tested and critiqued by a group of energetic and insightful teachers throughout California. Although too many teachers have been involved in the development of these units to thank each teacher by name, we are extremely grateful for their time, insight, and contributions to making these units successful. In addition, there have been a number of university professors, staff developers, and school district staff who have contributed to unit development. We have benefited from their observations and suggestions, and offer a collective “Thank you!”

Please visit the Interact website (www.teachinteract.com) to find out about professional development offerings and conference presentations.

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The Invisible Hand

Chapter Four

Purpose and Overview

Time required

5–6 class periods

5–6 class periods

Project scenario

In a market economy, market forces set a price at which consumers are willing and able to purchase all the goods they want and producers are able to sell all they want. When a government sets a price below the market-determined price (i.e., sets a price ceiling), shortages occur and create nonprice distributional mechanisms such as black markets and waiting in queues. To explore how benefits and costs arise with all methods of allocating goods and services, students are presented with the following problem-solving scenario in this project:

U.S. Department of Energy Secretary Les Singer asks his policy group for help in planning how to implement legislation on gasoline price controls that was passed by Congress. He asks the policy group to start the process by trying to decide which consumers should be given high, medium, or low priority when gasoline is allocated. The group listens to messages from consumers who are concerned that shortages may occur with price controls and explain why they need gasoline. The situation soon is complicated when a critical op-ed piece appears in a petroleum industry newsletter and reporters start asking questions about possible negative effects of price controls. Secretary Singer, realizing he doesn't know enough about economics to respond to these concerns, asks his policy group to write a memo to him explaining why price controls might cause problems in a free market system. Finally, he asks the policy group to write an op-ed piece announcing the Energy Department's plan for implementing price controls.

Concepts to be learned

To successfully resolve the problem and complete the products required in this project, students need to understand and be able to apply the following economic concepts:

Purpose and Overview

- Black market
- Demand
- Equilibrium price
- Equilibrium quantity
- Market
- Market economy
- Nonprice rationing
- Opportunity cost
- Price
- Price ceiling
- Price control
- Scarcity
- Shortage
- Supply
- Tradeoff
- Unfettered market

Although an understanding of the following economic concepts is not essential to complete project tasks, teachers can use the unit to explain additional economic concepts including:

- Command economy
- Price floor
- Surplus

NCEE content standards addressed

The Invisible Hand addresses the following *Voluntary National Content Standards in Economics* codified by The National Council on Economic Education, in partnership with the National Association of Economic Educators and the Foundation for Teaching Economics. For more information see www.ncee.net/ea/standard.

Standard #	Economic Concept
1	Scarcity
2	Opportunity cost
3	Market systems (allocation of goods and services)
4	Economic incentives
7	Market economies
8	Supply and demand

The Invisible Hand can also be used to teach the following standards:

5	Free trade and voluntary exchange
9	Effects of competition

Teaching *The Invisible Hand*

Sequence of the unit

Like the other BIE *Project Based Economics* units, students complete *The Invisible Hand* by following a standard set of activities in a proscribed order. But within these activities, there will be variation in the timing and in the way students complete them.

The sequence of instructional activities is described below. This sequence is logical, and is based upon extensive pilot testing in high school economics classrooms. It is also informed by research into effective instruction. Although changes may be necessary to meet time constraints, address the needs of specific student populations, or include additional instructional materials and learning opportunities, we strongly encourage teachers to adhere to the sequence of activities as closely as possible—at least during the first several times *The Invisible Hand* is taught. Each instructional activity is discussed in more detail in the following section, the **Step-by-Step Teaching Guide**.

Pre-project planning

0. **Prepare** for successful project implementation.

Launching the project

1. Students listen to the **voicemail from Secretary Singer**, read the transcript, and discuss it as a whole class.

Framing the inquiry

2. Students develop the **initial “Know” list** with you (whole-class discussion).
3. Students develop the **initial Driving Question** with you (whole-class discussion).
4. Students develop the **initial “Need-to-Know” list** with you (whole-class discussion).

Problem-solving and learning activities

5. Provide (optional) **Clarifying Lesson #1** on *market economies*.
6. Students individually write **first Project Log entry**.
7. **Review individual Project Log entries** to assess understanding of economic concepts.
8. Students listen to and discuss the **voicemail messages** forwarded from Secretary Singer (whole-class discussion).

9. Students **revise the Know/Need-to-Know list** with you (whole-class discussion).
10. Students use worksheet to **allocate points** to decide who should get gasoline (in pairs/threes) and discuss results as a whole class.
11. Provide **Clarifying Lesson #2** on *black markets*.
12. Students individually write **second Project Log entry**
13. **Review individual Project Log entries** to assess understanding of economic concepts.
14. Students read the **memo and Op-Ed piece** and discuss it as a whole class.
15. Students **revise the Driving Question** with you (whole-class discussion).
16. Students **revise the Know/Need-to-Know List** with you (whole-class discussion).
17. Provide **Clarifying Lesson #3** on *demand and supply*.
18. Students individually write **third Project Log entry**.
19. **Review individual Project Log entries** to assess understanding of economic concepts.
20. Students write **memo on markets**, in small groups, in pairs, or individually.
21. Use the supplied rubric to **assess memos** on markets.
22. Students listen to **final voicemail** from Secretary Singer and discuss it as a whole class.
23. Students **finalize the Driving Question** with you (whole-class discussion).
24. Students **revise the Know/Need-to-Know List** with you (whole-class discussion).
25. Provide **Clarifying Lesson #4** on *price controls and market prices*.
26. Students individually write **fourth Project Log entry**.
27. **Review individual Project Log entries** to assess understanding of economic concepts.
28. **Share supplied rubric with students** to guide their work.
29. Students review the **final Know/Need-to-Know List** with you (whole-class discussion).

Purpose and Overview

Presentation, assessment, and debrief

- 30.** Students **discuss policy on price controls** in small groups.
- 31.** Students **write Op-Ed pieces** in small groups, pairs, or individually.
- 32.** Students **report on and compare Op-Ed pieces** (whole-class discussion).
- 33.** Use the supplied rubric to **assess Op-Ed pieces**.
- 34.** Conduct a **debrief to clarify and consolidate** students' understanding of key economic concepts (as necessary).
- 35.** Manage **student reflection** on the 21st-century skills practiced, and the process of learning in PBL.
- 36.** Use the supplied **multiple-choice test** to assess individual students' knowledge of key economic concepts.
- 37.** Make **notes on adjustments to the unit** to improve student learning for the next time the unit is taught.

Step-by-Step Teaching Guide

Each of the above instructional activities is discussed in more depth below, with tips for successful classroom implementation.

Pre-project planning

0. Prepare for successful project implementation.

There are a number of issues that must be considered before embarking on a project with students. These include:

- How much time will be devoted to the project?
- What economics content resources need to be prepared in advance (textbooks, articles, websites, etc.)?
- Do all students have the skills they need to tackle the project—including basic literacy skills as well as the ability to work in teams, make presentations, and conduct research? If not, is it necessary to pre-teach some of these skills, make sure students who need it have adequate support, or deal with these challenges in other ways?
- How will student groups be formed? (*See comments in Chapter Two.*)
- How will groups report on their progress and be held accountable? Do report forms or other tools need to be developed?
- Is it necessary to arrange access to the library/media center or computer lab?
- Do parents or administrators need to be informed about the process of Project Based Learning and be assured that time spent on the project is focused on standards-specific learning goals?

In addition to considering the above issues, be sure student handouts and clarifying lesson/mini-lecture materials are ready—or at least underway.

Finally, **decide if the culminating product will be done as a small group, in pairs, or individually.** This will affect how you present the task to students, use time, and assess their learning. Students are asked to write an Op-Ed piece—a relatively short persuasive essay. Although the scenario places students in the role of members of a Policy Group, you may ask them to discuss it first, then write in pairs or individually if you wish.

Important Note About Audio/Visual Materials: This unit features voicemail messages as part of the scenario. You may find these recordings on the accompanying CD-ROM. As an acceptable alternative, you and/or students may simply do a “dramatic reading” of the voicemail messages using the transcript provided in the **Student Materials**.



Important!
**Note About Audio/
Visual Materials:**

This unit features voicemail messages as part of the scenario. You may find these recordings on the accompanying CD-ROM. As an acceptable alternative, you and/or students may simply do a “dramatic reading” of the voicemail messages using the transcript provided in the **Student Materials**.

Daily Directions

Step-by-Step Teaching Guide

Launching the project

1. Students listen to the voicemail from Les Singer and/or read the transcript, and discuss it as a whole class.

The voicemail message is two minutes long and contains several important details. In order to more carefully analyze this message, students should also follow along with the transcript. As an alternative to playing the audio recording, you or students may do a “dramatic reading” of the transcript.

An audio recording of the voicemail messages is included on the accompanying CD-ROM.

*A transcript of the voicemail from Secretary Singer may be found in the **Student Materials**.*

The transcript could be projected so it can be read by the whole class. Alternatively, copies of the transcript could be duplicated and given to students.

Potential Hurdle

It is essential that the entire class be able to read and comprehend the text. If necessary, employ regular literacy-building strategies.



Potential Hurdle: Because this memo sets up the scenario and the problem to be solved, it is essential that the entire class be able to read and comprehend the text. If necessary, employ the same literacy-building strategies you would normally use for this kind of reading material.

Synopsis of voicemail: The two-minute message identifies the students’ role, tells them that price controls on gasoline have just been legislated, and requests that they rank various groups in American society according to how important it is that they receive gasoline. The message seeds the idea that setting the price of gasoline may not be easy because the controls could result in shortages. It promises students two more resources: a sampling of phone calls from consumer groups wanting gasoline, and a worksheet to help prioritize groups.

Economics Content Note: The voicemail message contains a number of economic terms, such as distributional concerns, price control, price ceiling, and so on. This is intentional. It is assumed that students will either not understand these terms or have misconceptions regarding their meanings. **Do not**, at this point, explain to students the meaning of these terms. Tell students they should put these terms on the list of what they “need to know” to solve the problem. Figuring out the meaning of economic terms is something students should, as much as possible, do for themselves (with your monitoring and guidance) once they begin working to solve the problem.

Economics Content Note

Do not at this point explain to students the meaning of the economic terms in the memo. They will do this for themselves once they begin working to solve the problem.



● Concept Definitions ●

The curriculum is designed to teach the following concepts:

Black market: A market in which sellers illegally sell to buyers at higher than legal prices

Demand: Purchases of a good or service that consumers are able and willing to make, given its price and the choices available to them. The law of demand states that a negative (or inverse) relationship exists between price and quantity demanded. That is, as price increases (decreases) the amount of a good purchased decreases (increases). Demand is determined by consumer tastes and income and by the price of other goods. The demand schedule is a table showing the quantities of a good that will be purchased at various prices. The demand curve relates the price of a good and the quantity of the good that individuals are able and willing to purchase. Aggregate demand is the total demand for goods and services in the economy, including households (for consumer goods), firms and government (for investment goods), and other countries (for exports).

Equilibrium price: The price where the quantity demanded and the quantity supplied are equal. The price where neither shortages nor surpluses exist and no incentive exists for prices to rise or fall.

Equilibrium quantity: The quantity at which the amount that buyers are able and willing to purchase exactly equals the amount of the product that sellers will sell. This occurs at equilibrium price.

Market: An arrangement that allows buyers and sellers to exchange things. A buyer exchanges money for a product, while a seller exchanges a product for money.

Market economy: An economic system (method of organization) in which only the private decisions of consumers, resource suppliers, and producers determine how resources are allocated

Nonprice rationing: Controlled distribution of scarce resources, goods, and services by means other than price. Examples include resources or goods being distributed on a particular day or at a particular time through queues (standing in line; coupons; first come, first served; lottery, etc.). Nonprice rationing stands in contrast to price rationing, which means that those with the most money or assets and who want the good the most get it.

Opportunity costs: The real sacrifice involved in achieving something. The value of the next best opportunity that would have to be foregone in order to achieve a particular thing.

Transcript of Voicemail From Les Singer

(Total running time: two minutes)

Voice of Les Singer, Secretary, Department of Energy:

Hi, Bill. Les Singer here. I'm really pleased to have you on board as head of my Policy Group. I know you just finished an assignment working for Congress, spearheading the Energy Committee's gas price control legislation—and several members of Congress have told me that your work was critical in getting that bill passed. While the legislation is supposed to help ease the strain of high gas prices, the Department of Energy now needs to figure out the details. I'm counting on your group in a big way. As head of the Department I know how to run a large bureaucracy, but I really don't know much about setting the price of gas. I know how important gas is to our economy, but not much else. So here's where I need your help.

The legislation says that we have to set the price of gas and make sure high-priority users get the gas they need. I'm not sure exactly how this all works, but I'm told there could be distributional concerns that come with a ceiling on the price of gas, and this sure looks likely. I'm already getting phone calls from people who are worried that a price ceiling will produce shortages and not everyone who wants gas will be able to get it.

Here's what I'm thinking. If price controls will produce gas shortages, then we might want to set prices based on who we think should get gas. Let's set the price of gas so that high-priority groups can get all the gas they want, medium-priority groups can get most of the gas they want, and low-priority groups will get any gas that is left. Of course, this means we will have to do some ranking to see who should have priority.

I'll forward a sampling of phone calls we've been getting from groups of consumers who want gas. I'll also fax over a worksheet I designed to help with the ranking. The worksheet has 25 points to allocate among groups who have expressed their concerns. If there is anyone else who you think should be included, please add them to the list. With this point scheme we'll be able to see at a glance who should get gas, and who might not get it. Let's discuss your rankings when I get back.

I'm sorry I can't be there to welcome you aboard in person, but the President needed me to give a speech in Guadalajara—sure wish I'd taken Spanish in high school!