Economics 6th edition Mankiw Solutions Manual

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(These are the instructors' Solutions to the Maths for Economics Problems provided on MindTap)

Maths for Economics: Chapter 1: Problem Solutions

PROBLEM

1. Some people pride themselves on not knowing maths. And some of them have even become very rich. Give three good reasons why you should not follow their example in regard to maths.

SOLUTION

Maths (and statistics):
… are a way of training in logical reasoning.
… are analytical tools.
… help to expresses yourself exactly and allows for precision.

PROBLEM

2. Stephanie has been promoted to become the general manager of a medium-sized firm because she has made several very profitable decisions for the firm over the last couple of months and she is also very good at negotiating with suppliers, customers and employees. However, she claimed that she has not used any of the complicated formulas that she learned in her advanced maths classes in ten years. Do you think her training in maths did not help her in any way to be successful?

SOLUTION

Think about what the term 'profitable' means. Stephanie always needs to think about how much she will gain from tough negotiating, versus giving into the demand of her partner. Essentially, this way of thinking is applied maths.

PROBLEM

3. After talking to a couple of market players you tell your boss that introducing a new product into the market will probably increase the firm's revenues. He tells you that this answer is not good enough and sends you back to do some more work. Why?

SOLUTION

Firstly, it is likely that the manager is interested in profits, not only revenues. Secondly, you should try to estimate how strongly the revenues will increase.

PROBLEM

4. Create an example of false causation or the post hoc fallacy.

SOLUTION

This could be any situation in which you observe that two things occur in sequence, even though you cannot find any theoretical reasoning why these things should be in a causal relationship, or where the two aspects are correlated to a third unobserved variable, which is the true causation for the second variable in the sequence.

PROBLEM

5. There are always discussions about normative issues in politics. Which possible uses do statistics have in such a discussion?

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SOLUTION

Without these methods empirical data cannot be used in a meaningful way as a foundation for decision-making.

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2 THINKING LIKE AN ECONOMIST

LEARNING OBJECTIVES:

By the end of this chapter, students should understand:

- how economists apply the methods of science.
- how assumptions and models can shed light on the world.
- research can be conducted through using inductive and deductive reasoning – no one way is the 'right way'.
- how theories can be used to explain and to make predictions.
- the principle of falsifiability.
- that there are different schools of thought.
- the difference between positive and normative statements.
- the role of economists in making policy.
- why economists sometimes disagree with one another.

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CONTEXT AND PURPOSE:

This chapter is the second chapter in a two-chapter section that serves as the introduction of the text. The first introduced principles of economics that will be revisited throughout the text. This chapter develops how economists approach problems.

The purpose of this chapter is to familiarize students with how economists approach economic problems. With practice, they will learn how to approach similar problems in this dispassionate systematic way. They will see how economists employ the scientific method, the role of assumptions in model building. Students will also learn the important distinction between two roles economists can play: as scientists when we try to explain the economic world and as policymakers when we try to improve it.

KEY POINTS:

- Economics is characterized by different methodologies and approaches, including neo-classical, feminist, Marxist and Austrian.
- There is a debate about whether economics is a 'science'. It does follow certain scientific methodologies, but it must be accepted that economists are working with human behaviour.
- Economists make assumptions and build simplified models in order to understand the world around them. Economists use empirical methods to develop and test hypotheses.
- Economists must try to distinguish between cause and effect, and this is not always easy to do.
- Research can be conducted through using inductive and deductive reasoning – no one way is the 'right way'.
- Economists develop theories which can be used to explain phenomena and make predictions.
- The principle of falsifiability is based on the assumption that we cannot know everything for sure and, as a result, researchers should clarify the conditions under which a theory can be proved false.
- Using theory and observation is part of scientific method, but economists must always remember that they are studying human beings and humans do not always behave in consistent or rational ways.
- Economists can conduct experiments in laboratory settings and use 'natural experiments' observing outcomes from changes in policy or when events occur.
- A positive statement is an assertion about how the world *is.* A normative statement is an assertion about how the world *ought to be.*

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- Economists who advise policymakers offer conflicting advice either because of differences in scientific judgements or because of differences in values. At other times, economists are united in the advice they offer, but policymakers may choose to ignore it.
- Decision-making in economics can be made more informed by assessing the costs and benefits of a decision and attempting to quantify the costs and benefits to provide the basis for an informed decision.

CHAPTER OUTLINE:

I. Economic Methodology

A. Many of the concepts you will come across in this book are abstract. Abstract concepts are ones which are not concrete or real – they have no tangible qualities

B. Economics as a Science

1. There is a debate to what extent economics can be considered a science.

C. Models

1. Economics often uses models to help understand the real world. For example, models help economists understand how markets work, how consumers and firms behave and how the economy functions.

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Activity 1 — Realism and Models: An Analogy

Type: *In-class demonstration*
Topics: *Models*
Materials needed: *Aeroplane kit, sheet of paper, whirl-a-gig wing toy (Note: the whirl-a- gig wing toy is a helicopter wing on a stick; it is often sold in museum gift shops as well as toy stores.)*
Time: *5 minutes*
Class limitations: *Works in any class size*

Ask the class if a realistic model is better than an unrealistic model.

Show them the aeroplane model kit. Describe some of the details included in model (rivets, canopy, struts, etc.). Shake the box to rattle the large number of parts. This is a fairly realistic model, although obviously not a real aeroplane. Its complexity adds realism, but at a cost; assembling the model is very time consuming. Drop the box on the floor. Tell the class, "This model, even when completed, cannot fly."

Take a sheet of paper and fold it into a paper aeroplane. Show the class this new model. Its virtues include simplicity and ease of assembly, but it is less realistic than the aeroplane model kit. Throw the aeroplane and explain, "While less detailed, this model can glide through the air."

Show the students the whirl-a-gig wing toy. This model looks nothing like an aeroplane – just a T-shaped piece of wood. Yet, this model does something that the other two models cannot do: it actually generates lift. This toy demonstrates the same aerodynamic principles as a real aeroplane wing. Twirl the stick between your palms and the whirl-a-gig wing toy will fly over your head.

Economic models are like the whirl-a-gig wing toy. They are much less complex than the real world, but they can show how markets actually work.

2. Models use equations and diagrams to help predict or forecast what will happen as a consequence of say a policy change. They also are able to simulate an event.

   a. Definition of counterfactual: analysis based on a premise of what would have occurred if something had not happened.

   b. Models contain a number of variables.

      i. Definition of an **endogenous variable**: a variable whose value is determined within the model.

      ii. Definition of an **exogenous variable**: a variable whose value is determined outside the model.

      iii. An example: A market model looking at the link between price and quantity. Quantity is dependent on the price, so it is

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endogenous, whilst price is not determined by the quantity or dependent on the quantity, so it is exogenous.

c. Models are more unstable the longer the time period being considered and forecast.

d. Cause and effect. Does a change in price cause a change in the amount bought or does the amount bought affect price?

i. Holding other variables constant can help economists to negate other factors that might affect outcomes.

ii. Definition of **ceteris paribus (other things being equal):** a term used to describe analysis where one variable in the model is allowed to vary while others are held constant.

e. Human values in models.

i. There is disagreement over the significance and values associated with policy decision outcomes.

ii. Models also allow inferences to be made.

iii. An **inference** is a conclusion or explanation derived from evidence and reasoning.

f. Manipulating models.

i. Modellers can manipulate the numbers in a model's formula and so identify the extent to which outcomes differ.

ii. It is then possible to compare outcomes of models with actual data. Then refinements to the model can be made.

D. Types of reasoning

1. Deductive reasoning begins with a theory from which a hypothesis is drawn. The hypothesis is then subject to observation and either confirmation or rejection.
   a. **Hypothesis** is an assumption, tentative prediction, explanation, or supposition for something.

2. Inductive reasoning refers to the process of observation from which patterns might be formed which provides evidence for a hypothesis which may lead to a theory.

a. **Generalization** is the act of formulating general concepts or explanations by inferring from specific instances of an event or behaviour.

E. Experiments in economics

1. Economics is a science based on human behaviour, so it is not possible to conduct experiments in the way physical sciences can.

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2. Laboratory type experiments in economics is where:

a. Data can be collected via observations on individual or group behaviour, through questionnaires and surveys, interviews and so on.

b. Through the collection and analysis of data that exists such as wages, prices, stock prices.

3. A natural experiment is one where the study of phenomena is determined by natural conditions which are not in the control of the experimenter.

a. An example of natural experiment is observing the effects of bans on smoking in public places on the number of people smoking or the possible health benefits.

b. It can use statistical tools of correlation and regression to establish the strength of the relationship between two variables.

F. *Case study: The Basic Income Experiment*

1. If an individual receives a guaranteed basic income, would this help alleviate poverty and inequality and encourage individuals to find work?

Case Study Questions

1. Do you think the basic income experiment in Finland used a deductive or inductive approach? Explain.

2. How might the experimenters have assessed the degree of cause and effect given the results of the experiment in Finland?

3. Where do you think the hypothesis that giving people money reduces the incentive to find work arose from? Is the evidence from the Finland experiment sufficient to reject this hypothesis?

G. Theories

1. Theories can be used to explain something and to make predictions.

2. Theories based on deductive reasoning and not drawing on data or evidence have been criticized for making incorrect assumptions. Predictions arising from these theories are unreliable or wrong.

H. Falsifiability

1. **Falsifiability** is the possibility of a theory being rejected as a result of the new observations or new data.

2. Things change, new information, experience or observations may be made which render the original hypothesis redundant and subject to revision or refinement; there is a process which is never ending.

3. Economics is a dynamic subject. Past models help us understand the historical development of economics. There is still much to be discovered and perhaps you will have a role in that.

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4. Cause and Effect

a. Example: is a rise in the price level caused by an increase in the money supply or does an increase in the money supply cause a rise in the price level?
b. Separating out cause and effect can be informed by statistical tests but it is also subject to interpretation. It is not always easy to establish cause and effect particularly when controlled experiments are not possible, and this characterizes much of economics.

I. The Role of Assumptions

1. Example: to understand international trade, it may be helpful to start out assuming that there are only two countries in the world producing only two goods. Once we understand how trade would work between these two countries, we can extend our analysis to a greater number of countries and goods.

2. One important role of a scientist is to think imaginatively about what assumptions could be made
and to understand which assumptions are the most helpful ones to make.

3. Economists often use assumptions that appear somewhat unrealistic but will have small effects on the actual outcome of the answer.

To illustrate to the class how simple but unrealistic models can be useful, bring a road map to class. Point out how unrealistic it is. For example, it does not show where all of the stop signs, gas stations, or restaurants are located. It assumes that the earth is flat and two-dimensional. But, despite these simplifications, a map usually helps travellers get from one place to another. Thus, it is a good model.

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II. Schools of Thought

A. Neo-classical Economics

1. Mainstream economics or the neo-classical approach takes the view that the market is a central feature in generating well-being and in answering the three questions all societies have to face.

2. Decisions are based on rationality and economic agents act out of self-interest and are autonomous.

3. Critics of this approach argue that the assumptions are flawed and that what is observed about human behaviour does not conform to the neo-classical view. As such, the hold of the neo-classical on economics means heterodox economics (views at odds with the mainstream), finds it hard to gain any ground.

B. Feminist Economics

1. Feminist economists argue that economic well-being is not simply provided through market exchange but also includes unpaid work carried out in the home.

C. Marxist Economics

1. Marxist economics views firms and markets not as entities but as collections of humans and it is these humans who make decisions. Some humans have control over the means of production and are able to exploit that power in ways which lead to different outcomes and which drive dynamism in economies.

D. The Austrian School

1. Individual liberty is a fundamental principle in Austrian school economics and markets should be allowed to do their own work.

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III. The Economist as Policy Adviser

A. Positive Versus Normative Analysis

1. Example of a discussion of minimum-wage laws: Polly says, "Minimum-wage laws cause unemployment." Norma says, "The government should raise the minimum wage."

2. Definition of **positive statements:** claims that attempt to describe the world as it is.

3. Definition of **normative statements:** claims that attempt to prescribe how the world should be.

4. Positive statements can be evaluated using data, while normative statements involve personal viewpoints.

Use several examples to illustrate the differences between positive and normative statements and stimulate classroom discussion. Possible examples include minimum wage laws, budget deficits, tobacco taxes, legalization of marijuana, and seat-belt laws.

Have students bring in newspaper articles and in groups, identify each statement in an editorial paragraph as being a positive or normative statement. Discuss the difference between straight news stories and editorials and the analogy to economists as scientists and as policy advisers.

IV. Why Economists Disagree

A. Differences in Scientific Judgments

1. Economics is not a true science as it deals with human behaviour.

2. Economists often disagree about the validity of alternative theories or about the size of the effects of changes in the economy on the behaviour of households and firms.

a. Example: some economists feel that a change in the tax system that eliminates tax on income and creates tax on consumption would increase saving. However, other economists feel there would be little effect on saving behaviour.

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B. Differences in Values

1. Economists may have different values and, therefore, different normative views about what policy should try to accomplish.

Emphasize that there is more agreement among economists than most people think. The reason for this is probably that the things that are generally agreed upon are boring to most non-economists.

C. Decision-making in Economics

1. It could be said that economics is the science of decision-making. Economists adopt a specific approach to decisions.

2. Economists identify costs and benefits of decisions. These costs and benefits are not just the private costs and benefits to the individual concerned; however, they will also include the costs and benefits to third parties who are not directly involved in the actual decision.

3. Economists need to attach values to the costs and benefits. If the benefits outweigh the costs, then the decision may be warranted.

4. Every day, millions of decisions are made by individuals, businesses and governments. Some will be rational, but others will not.

V. *In The News: Models, Theories and Realities*

Critical Thinking Questions

1. There has been much criticism of some economic models in recent years and of economics in general. Some of this criticism has been levelled because economists failed to predict major economic shocks such as the Financial Crisis in 2007–9 and the Covid-19 pandemic from 2020 onwards. Why do you think economists fail to predict such events and does this render the discipline of limited benefit?

2. What does the story about Harry S Truman and the one-handed economist tell you about how economists think and the methodologies used in the subject?

3. Try to think of another theoretical relationship that economists might study which could be described as a 'law' and which is based on stylized facts. How might economists go about testing such a theory and what would be required to make the assessment of the theory 'good science'?

4. The pattern of oil prices prior to and during the Covid-19 pandemic seemed to conform to the laws of supply and demand and the theory of determination of market prices. Do you think that there are any exceptions to the laws of demand and supply and, if so, should we still continue to refer to these as 'laws' if there are exceptions?

5. The pandemic led to short-term changes in demand and supply of things like housing and the use of office space. The longer-term predictions on how these markets will be affected are more difficult to make with any certainty. Why do you think this is and what sort of factors might influence the future direction of these markets?

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SOLUTIONS TO TEXT PROBLEMS:

Case Study Questions

The hypothesis being investigated was whether giving the unemployed a guaranteed basic income had an impact on their employment prospects. The inductive approach depends on empirical evidence to draw conclusions whereas the deductive approach is based on assumptions. The basic income experiment therefore uses the inductive approach.

One of the arguments against a basic income is that if you give people money but do not insist that they be actively looking for work (which is invariably the basis of unemployment insurance schemes), people will just get lazy and lose the incentive to find work. The results of the Finnish experiment seemed to reject this hypothesis. The basic income people receive from the government may be insufficient for their needs so they may look for work which will give them higher incomes.

The evidence from the Finland experiment does seem to suggest that giving people money does not necessarily reduce their incentive to work. The hypothesis that giving people money reduces the incentive to find work may have arisen from political beliefs or from observations in some cultures.

In The News: Critical Thinking Questions

1. Economic theory is based is based on abstract assumptions such as:
   a) Firms maximize profits,
   b) Consumers maximize utility,
   c) Consumers make rational choices,
   d) We live in a world of perfect knowledge with the implication that there is no uncertainty.

   These abstract assumptions are required in order to simplify the world to facilitate its mathematical modelling. But, just because economic models are a very crude representation of reality, it does not mean that the discipline is of limited benefit. This is particularly because economic models act as a benchmark of economic reality and give policymakers a basis for improving that reality through the formulation of economic policy. However, the limitation of using abstract models is that they do not accurately and realistically reflect economic life. As a result, economists were unable to either predict the economic consequences of the Financial Crisis of 2007-9 and the Covid-19 Pandemic of 2020.

2. There is a story that US President Harry S Truman asked for a one-handed economist because his economic advisors tended to say, 'on the one hand … but then on the other…'. Those looking for some order among the seeming chaos of uncertainty and unpredictability of the world and of economies might take some comfort in the existence of what are known as 'stylized facts'. These are relationships that seem to apply in general to almost every case but not necessarily all. Economists and economic models therefore tend to generalize economic activity in a mathematical way. The problem is that external factors, which are not able to be generalized, such as Covid-19, may disrupt economic models and generate an economic reality which such models may not be able to predict. Moreover, the different methodologies available to economists may mean that two economists using different methodologies to analzse an economic situation may come up with different economic interpretations.

3. Another 'law' which economists have devised is the law of diminishing returns. This law applies to the short run production of firms during which as the firm hires more and more workers to work in a factory with a limited number of machines, productivity begins to decline. This is because in the

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short run, the firm can hire more workers but cannot buy new machinery or build more factories as there is not enough time to negotiate contracts with suppliers. Economists would test the law by observing what happens to a firms productivity as it hires more and more workers over a period of a month but does not change the number of machines used in the factory. This 'experiment' would make the assessment of the theory 'good science'.

4. The law of supply and demand depends on the assumption of 'ceteris paribus' or all other things unchanged. In this case, if the price of a good changes, it is assumed that no other factor affecting the quantity supplied or demanded will change. In reality the world is a dynamic place, so not only does the price of a good change, but also other factors such as consumer expectations and income for example. The model cannot explain why during the Covid pandemic demand for toilet paper went up. However, we can still continue to refer to these as 'laws' because it represents a generic, generalized model even if there are exceptions.

5. The pandemic saw a shift away from working in the office and commuting to work each day to working from home and a greater reliance on digital technology. As a result, there was an increase in demand for housing in rural areas as people moved out of urban centres like London with office space lying empty. The future direction of these markets will depend upon a combination of company policy, worker preferences as well as the cost of housing and the use of digital technology.

Questions for Review

1. Economics is like a science because economists use the scientific method. They devise theories, collect data, and then analyze these data in an attempt to verify or refute their theories about how the world works. Economists use theory and observation like other scientists, but they are limited in their ability to run controlled experiments. Instead, they must generally rely on natural experiments.

2. Economists make assumptions to simplify the complex world and make it easier to understand.

3. An economic model should not describe reality exactly because such a model would be too complex to be helpful in understanding the way the world works. A model is a simplification that allows the economist to see what is truly important.

4. Empirical study means that information has been gathered either by observation, experience or experiment of an event or phenomena (such as a period of rising prices), the formulation of a hypothesis (that prices rise when government prints too much money) and the testing of the hypothesis.

5. Inductive reasoning refers to the process of observation from which patterns might be formed which provides evidence for a hypothesis which may lead to a theory. In contrast, deductive reasoning begins with a theory from which a hypothesis is drawn. The hypothesis is then subject to observation and either confirmation or rejection.

6. One is not any better than the other – they are different ways of approaching research and may be closely linked. Whatever method is chosen; it should be up to rigorous testing.

7. Positive statements are descriptive and make a claim about how the world is, while normative statements are prescriptive and make a claim about how the world ought to be. Here is an example. Positive: A rapid growth rate of money is the cause of inflation. Normative: The government should keep the growth rate of money low.

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8. The positivist approach to economic analysis would involve mathematically modelling the real world based on a set of assumptions. Assumptions can simplify the complex world and make it easier to understand and focus our attention. This is especially important in economics where there are a large number of interacting agents. Economics often assumes everything, but two variables are held constant. This allows us to understand what is going on. This modelling would allow for a scientific analysis. However, economists may also have their own personal, subjective values about economic policy and the interpretation of results of analysis. Therefore, differences in values may lead to disagreements between economists.

9. An endogenous variable is a variable whose value is determined within the model such as the quantity demanded which is dependent on the price. An exogenous variable is a variable whose value is determined outside the model. Price is an example, because it affects the model, but is not affected by it. Understanding the difference between endogenous and exogenous variables is important because it helps us to separate out cause and effect.

10. Economists sometimes offer conflicting advice to policy makers for two reasons: (1) economists may disagree about the validity of alternative positive theories about how the world works; and (2) economists may have different values and, therefore, different normative views about what public policy should try to accomplish.

Problems and Applications

1. Economists have developed precise terms in order to mathematically model the real world. Special terms are useful because they allow people talk about very specific ideas in a very precise way. For example, to an economist the term 'Capital' would represent the factories and machinery that a firm uses in production. The term 'Interest' would represent either payment that a firm would have to pay in order to borrow money above the repayment amount or the return a saver would receive for depositing money in a savings account with a bank. 'Price' would represent the money amount that would have to be paid by consumers and 'cost' would define the expense incurred by a firm in order to produce goods. Economists use specific terms in order to contextualize economic analysis.

2. a. Steel is a fairly uniform commodity, though some firms produce steel of inferior quality.

   b. Novels are each unique, so they are quite distinguishable.

   c. Wheat produced by one farmer is generally indistinguishable from wheat produced by another, though there are different varieties and some grow better in some areas than others and some varieties are better for some uses than others.

   d. Fast food is more distinguishable than steel or wheat, but certainly not as much as novels.

   e. Mobile phones have common features, but can be distinguished by shape, brand and extra features.

   f. Hairdressers are more distinguishable than steel or wheat since some hairdressers will offer more fashionable cuts than others, but not as much as novels where each is unique.

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3. The researcher has arrived at the theory through general observation from which the researcher made a hypothesis which needs to be tested. This is inductive reasoning. To apply scientific method, the researcher could gather more specific data for average prices to a range of holiday dates both during and outside semester dates and quantify the figures into percentage differences.

4. The politician thinks they are being rational by stating that immigration is too loose and that this encourages more people to enter the country and take away jobs from local people. The economist needs to be empirical and will want to collect evidence to test the validity of the politician's comments. The economist will need data on immigration to see if changes in the laws have encouraged larger numbers to enter the country. Next the economist will need to establish a statistical link between immigrant numbers and local unemployment rates.

5. Models are important because by simplifying or isolating variables, economists can see what is truly important. It allows us to focus on specific things we are interested in and help explain or predict what might happen as a result of certain decisions. It is important to review models regularly since the assumptions on which they are based may no longer be valid in our complex and ever-changing world.

6. A school of economic thought represents economists who share a certain view. Having different schools of thought among economists does not reduce its validity as an academic discipline but serves to contribute to debate and encourages the questioning of others' views. Such debates are at the heart of an academic approach. Whilst most economists hold a mainstream or neoclassical view, some subscribe to others such as the Austrian school supporting laissez faire or Marxist economics with an emphasis on state intervention. Modern challenges bring with them new approaches such as feminist economics, but also see the decline of some past influential approaches.

7. It costs money to place speed cameras on the side of roads and this money has alternative uses. Therefore, policymakers want to be as sure as possible about the value and effectiveness to speed cameras. They will want to know the costs associated with putting in the cameras including the disruption to traffic that the installments might produce and set these against the benefits such as lower speeds being adhered to and the number of accidents being reduced and the value of less accidents to the economy. Different types of accidents have different costs associated with them including loss of income and taxes from those involved in accidents, through to extra traffic congestion and a cost to the NHS and public services. They will also need to estimate the numbers caught by the cameras and the incomes from these. They will want to know the relationship between the level of the fine and the numbers caught. There will be challenges in placing values onto some of these and also to be confident that the predictions will be accurate.

8. As the prime minister, you'd be interested in both the positive and normative views of economists, but you'd probably be *most* interested in their positive views. Economists are on your staff to provide their expertise about how the economy works. They know many facts about the economy and the interaction of different sectors. So, you would be most likely to call on them about questions of fact - positive analysis. Since you are the prime minister, you are the one who has to make the normative statements as to what should be done, with an eye to the political consequences. The normative statements made by economists represent their own views, not necessarily your views or the electorate's views.

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9. As time goes on, you might expect economists to disagree less about public policy because they will have opportunities to observe different policies that are put into place. As new policies are tried, their results will become known, and they can be evaluated better. It's likely that the disagreement about them will be reduced after they've been tried in practice. For example, many economists thought that wage and price controls would be a good idea for keeping inflation under control, while others thought it was a bad idea. But when the controls were tried in the early 1970s, the results were disastrous. The controls interfered with the invisible hand of the marketplace and shortages developed in many markets. As a result, most economists are now convinced that wage and price controls are a bad idea for controlling inflation.
But it is unlikely that the differences between economists will ever be completely eliminated. Economists differ on too many aspects of how the world works.

   Plus, even as some policies get tried out and are either accepted or rejected, circumstances change and solutions to new problems are needed. Moreover, creative economists keep coming up with new ideas even for old problems.

10. Ceteris Paribus is the Latin term for "other things being equal". By using the idea of ceteris paribus, economists can focus on the effect of what happens when one factor, for example when interest rates change, but the other factors are held constant. It is a core feature of neoclassical economics. It means that all additional factors that could influence the outcome, such as people's level of confidence, remain the same. This would allow economists to test the assumption that when interest rate change so do savings levels.

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