

Ecosystem Valuation



Methods, Section 6

Contingent Valuation Method

Purposes &
Uses of this
Website

The Big
Picture

Essentials
of
Ecosystem
Valuation

Dollar-based
Ecosystem
Valuation
Methods

Ecosystem
Benefit
Indicators

Feedback

Links

Glossary



1. [Overview](#)
2. [Application of the Contingent Valuation Method](#)
3. [Case Study Examples of the Contingent Valuation Method](#)
4. [Case # 1: Mono Lake](#)
5. [Case # 2: Water Over the Falls](#)
6. [Case # 3: Glen Canyon Dam](#)
7. [Case # 4: Economic Value of Noncommercial Fish](#)
8. [Case # 5: Salmon Restoration](#)
9. [Summary of the Contingent Valuation Method](#)
10. [Applying the Contingent Valuation Method](#)
11. [Advantages of the Contingent Valuation Method](#)
12. [Issues and Limitations of the Contingent Valuation Method](#)

Overview

The contingent valuation method (CVM) is used to estimate economic values for all kinds of ecosystem and environmental services. It can be used to estimate both [use](#) and [non use values](#), and it is the most widely used method for estimating non-use values. It is also the most controversial of the non-market valuation methods.

The contingent valuation method involves directly asking people, in a survey, how much they would be willing to pay for specific environmental services. In some cases, people are asked for the amount of compensation they would be willing to accept to give up specific environmental services. It is called contingent valuation, because people are asked to state their willingness to pay, *contingent* on a specific hypothetical scenario and description of the environmental service.

The contingent valuation method is referred to as a *stated preference* method, because it asks people to directly state their values, rather than inferring values from actual choices, as the *revealed preference* methods do. The fact that CV is based on what people say they would do, as opposed to what people are observed to do, is the source of its greatest strengths and its greatest weaknesses.

Contingent valuation is one of the only ways to assign dollar values to non-use values of the environment; values that do not involve market purchases and may not involve direct participation. These values are sometimes referred to as *passive use* values. They include everything from the basic life support functions associated with ecosystem health or biodiversity, to the enjoyment of a scenic vista or a wilderness experience, to appreciating the option to fish or bird watch in the future, or the right to bequest those options to your grandchildren. It also includes the value people place on simply knowing that giant pandas or whales exist.

**Definitions
in this
text:**

Total economic
value

Non use values

Use value

Existence Value

Option Value

Bequest Value

It is clear that people are willing to pay for non-use, or passive use, environmental benefits. However, these benefits are likely to be implicitly treated as zero unless their dollar value is somehow estimated. So, how much are they worth? Since people do not reveal their willingness to pay for them through their purchases or by their behavior, the only option for estimating a value is by asking them questions.

However, the fact that the contingent valuation method is based on asking people questions, as opposed to observing their actual behavior, is the source of enormous controversy. The conceptual, empirical, and practical problems associated with developing dollar estimates of economic value on the basis of how people respond to hypothetical questions about hypothetical market situations are debated constantly in the economics literature. CV researchers are attempting to address these problems, but they are far from finished. Meanwhile, many economists, as well as many psychologists and sociologists, for many different reasons, do not believe the dollar estimates that result from CV are valid. More importantly, many jurists and policy-makers will not accept the results of CV. Because of its controversial nature, users must be extremely cautious about spending money on CV studies and about using the results of CV studies.

This section continues with some example applications of the contingent valuation method, followed by a more complete technical description of the method and its advantages and limitations.

Hypothetical Scenario:

A remote site on public land provides important habitat for several species of wildlife. The management agency in charge of the area must decide whether to issue a lease for mining at the site. Thus, they must weigh the value of the mining lease against the wildlife habitat benefits that may be lost if the site is developed. Because the area is remote, few people actually visit it, or view the animals that rely on it for habitat. Therefore, non-use values are the largest component of the value for preserving the site.

Why Use the Contingent Valuation Method?

The contingent valuation method was selected in this case because of the importance of non-use values, and their potentially significant levels.

Alternative Approaches:

Since non-use values are significant, and few people actually visit the site, other methods, such as the travel cost method, will underestimate the benefits of preserving the site. In this case, contingent choice methods might also be used, depending on the questions that must be answered, and whether contingent choice question formats are more effective than standard contingent valuation questions. This would be decided in the survey development stage of the application.

Application of the Contingent Valuation Method:**Step 1:**

The first step is to define the valuation problem. This would include determining exactly what services are being valued, and who the relevant population is. In this case, the resource to be valued is a specific site and the services it provides, primarily wildlife habitat. Because it is federally owned public land, the relevant population would be all citizens of the U.S.

Step 2:

The second step is to make preliminary decisions about the survey itself, including whether it will be conducted by mail, phone or in person, how large the sample size will be, who will be surveyed, and other related questions. The answers will depend,

among other things, on the importance of the valuation issue, the complexity of the question being asked, and the size of the budget.

In-person interviews are generally the most effective for complex questions, because it is often easier to explain the required background information to respondents in person, and people are more likely to complete a long survey when they are interviewed in person. In some cases, visual aids such as videos or color photographs may be presented to help respondents understand the conditions of the scenario that they are being asked to value.

In-person interviews are generally the most expensive type of survey. However, mail surveys that follow procedures that aim to obtain high response rates can also be quite expensive. Mail and telephone surveys must be kept fairly short, or response rates are likely to drop dramatically. Telephone surveys may be less expensive, but it is often difficult to ask contingent valuation questions over the telephone, because of the amount of background information required.

In this hypothetical case, the researchers have decided to conduct a mail survey, because they want to survey a large sample, over a large geographical area, and are asking questions about a specific site and its benefits, which should be relatively easy to describe in writing in a relatively short survey.

Step 3:

The next step is the actual survey design. This is the most important and difficult part of the process, and may take six months or more to complete. It is accomplished in several steps. The survey design process usually starts with initial interviews and/or focus groups with the types of people who will be receiving the final survey, in this case the general public. In the initial focus groups, the researchers would ask general questions, including questions about people's understanding of the issues related to the site, whether they are familiar with the site and its wildlife, whether and how they value this site and the habitat services it provides.

In later focus groups, the questions would get more detailed and specific, to help develop specific questions for the survey, as well as decide what kind of background information is needed and how to present it. For example, people might need information on the location and characteristics of the site, the uniqueness of species that have important habitat there, and whether there are any substitute sites that provide similar habitat. The researchers would also want to learn about people's

knowledge of mining and its impacts, and whether mining is a controversial use of the site. If people are opposed to mining, they may answer the valuation questions with this in mind, rather than expressing their value for the services of the site. At this stage, test different approaches to the valuation question and different payment mechanisms would be tested. Questions that can identify any 'protest' bids or other answers that do not reveal people's values for the services of interest would also be developed and tested at this stage.

After a number of focus groups have been conducted, and the researchers have reached a point where they have an idea of how to provide background information, describe the hypothetical scenario, and ask the valuation question, they will start pre-testing the survey. Because the survey will be conducted by mail, it should be pretested with as little interaction with the researchers as possible. People would be asked to assume that they've received the survey in the mail and to fill it out. Then the researchers would ask respondents about how they filled it out, and let them ask questions about anything they found confusing. Eventually, a mail pretest might be conducted. The researchers continue this process until they've developed a survey that people seem to understand and answer in a way that makes sense and reveals their values for the services of the site.

Step 4:

The next step is the actual survey implementation. The first task is to select the survey sample. Ideally, the sample should be a randomly selected sample of the relevant population, using standard statistical sampling methods. In the case of a mail survey, the researchers must obtain a mailing list of randomly sampled U.S. citizens. They would then use a standard repeat-mailing and reminder method, in order to get the greatest possible response rate for the survey. Telephone surveys are carried out in a similar way, with a certain number of calls to try to reach the selected respondents. In-person surveys may be conducted with random samples of respondents, or may use 'convenience' samples ' asking people in public places to fill out the survey.

Step 5:

The final step is to compile, analyze and report the results. The data must be entered and analyzed using statistical techniques appropriate for the type of question. In the data analysis, the researchers also attempt to identify any responses that may not express the respondent's value for the services of the site. In addition, they can deal

with possible non-response bias in a number of ways. The most conservative way is to assume that those who did not respond have zero value.

How Do We Use the Results?

From the analysis, the researchers can estimate the average value for an individual or household in the sample, and extrapolate this to the relevant population in order to calculate the total benefits from the site. For example, if they find that the mean willingness to pay is \$.10 per capita, the total benefits to all citizens would be \$26 million.

Case Study Examples of the Contingent Valuation Method:

Case # 1; Mono Lake [\[ref.\]](#)

The Situation

The State of California Water Resources Control Board was faced with a decision about how much water to allocate to Los Angeles from sources flowing into Mono Lake. The reduced water flows to the lake were affecting food supplies for nesting and migratory birds. One of the first contingent valuation studies to measure the use and non-use values that citizens have for public trust resources was a survey of California households regarding willingness to pay for increased water flows into Mono Lake.

Initial Work

The initial academic study asked California households, in a mail survey, whether they would pay more on their water bill for higher cost replacement water supplies, so that natural flows could once again go into Mono Lake. They were told that, according to biologists, the higher flows to the lake were needed to maintain food supplies for nesting and migratory birds.

The average willingness to pay per household was estimated to be \$13 per month, or \$156 per year. When multiplied by the number of households in California, the total benefits exceeded the \$26 million cost of replacing the water supply by a factor of 50. One impact of the survey results was to change the nature of the debate over Mono Lake from "fish or people" to one that recognized that people care about fish and birds, as well as about inexpensive water supplies for Los Angeles.

Follow-up Work

The State of California determined that information about the general public's willingness to pay for increased water in Mono Lake could be an important part of the economic analysis of the water allocation decision. As part of an Environmental Impact Report, the State hired a consulting firm to perform a more detailed contingent valuation survey. This new survey involved the use of photo-simulations showing what the lake would look like at alternative water levels. It also gave detailed information about effects of changing lake levels on different bird species. The survey was conducted over the telephone, with people who had been mailed information booklets with maps and photo-simulations. Survey respondents were asked how they would vote in a hypothetical referendum regarding Mono Lake.

This study also showed that the benefits of a moderately high (but not the highest) lake level were greater than the costs. While one cannot claim the economic analysis was a deciding factor, the California Water Resources Control Board did reduce Los Angeles' water rights by half, from 100,000 acre feet to about 50,000 acre feet, to allow more flows into Mono Lake.

Case # 2 | Water Over the Falls [ref.]

The Situation

The Federal Energy Regulatory Commission faced a licensing decision where one important issue was how much water the utility company should allow to flow over the falls at a recreation area. Increasing the flow over the falls would result in less hydropower generated, but more water for recreation. The previous license required only a minimum instream flow of 50 cubic feet per second, which reduced the flow over the falls to a trickle.

The Application

A contingent valuation survey was developed to determine how much visitors to the falls would be willing to pay for increased overflow levels. The survey instrument included pictures of the falls at four different flow levels and a series of valuation questions. It was mailed to a sample of previous visitors to the site. The key survey questions asked how much individuals would pay to visit the falls with each of the four flow levels depicted in the photos, and how many times they would visit each year at

the four different flow levels.

Results

Since both visitation and value per day were sensitive to flow, a statistical analysis of the survey results was used to estimate a total recreation benefit function. Using this function, the economic value of additional flows in each month was calculated, and compared to the economic value of the foregone hydropower required to allow the additional flows. The resulting optimum flow level during the summer months, when visitation was high, was calculated as 500 cubic feet per second, which was ten times larger than the existing minimum instream flow.

Case # 3 | Glen Canyon Dam [\[ref.\]](#)

The Situation

One of the highest profile uses of the contingent valuation method in water resources management involved the re-regulation of Glen Canyon dam. In the early 1980s it became clear that continued operation of the dam to provide peak-load power was adversely affecting the downstream ecosystem in the Grand Canyon, and significantly reducing the quality of recreational rafting. The valuation question of concern was how much recreational rafting was worth, compared to the market value of the peak-load power supply.

Application

The Bureau of Reclamation and National Park Service worked with a consulting firm to develop a contingent valuation survey to estimate how the value of rafting changed with different flows in the Grand Canyon. The study attempted to quantify how the value of rafting in the Grand Canyon would change with more even base flows, as compared to reduced flows during peak-power periods. The study found substantial economic values for rafting with increased water flows | \$2 million per year.

As in the Mono Lake study, the impact of the contingent valuation analysis helped change perspectives about how economic tradeoffs should be discussed. Rather than recreation versus hydropower, the challenge was now to find a release pattern that increased the economic value of all uses of the river water.

Results

For a variety of reasons, more even flows were put into place while the final environmental impact studies were being prepared, and Congress formalized these flows when it passed the Grand Canyon Protection Act of 1992. Whatever the effects of the contingent valuation study on that decision, the study did represent one of the first federally-funded projects to estimate non-use values. It was also one of the first contingent valuation studies included as part of a federally funded economic analysis.

Additional Research

As it became clear that more than recreation was at stake in re-regulation of the dam, it became more obvious that citizens throughout the U.S., not just rafters, cared about how dam operations affected the natural resources of the Grand Canyon. In particular, people were concerned about threatened and endangered fish, native vegetation, and birds, which were all being adversely affected by "unnatural" water flows and a lack of high spring water flows. As a result, the Bureau of Reclamation funded a major contingent valuation study of households throughout the U.S. to estimate their willingness to pay for flow regimes that would protect the natural resources in the Grand Canyon.

The results showed strong support for a more natural flow regime. While it would be difficult to point to any one study as definitively affecting the management of the Glen Canyon dam, the public support illustrated through the contingent valuation study, and in other ways, resulted in substantial changes in the management of the dam. This included large spills during the spring of 1995 to emulate the natural high spring flows.

Case Study # 4 ¶ Economic Value of Noncommercial Fish [\[ref.\]](#)

Situation

Rivers in the Four Corners Region provide 2,465 river miles of critical habitat for nine species of fish that are listed as threatened or endangered. Continued protection of these areas required habitat improvements, such as fish passageways, as well as bypass releases of water from dams to imitate natural water flows needed by fish. A contingent valuation survey was used to estimate the economic value for preserving the critical habitat.

Application

Survey respondents were provided detailed maps that highlighted the areas

designated as critical habitat units for the fish. They were told that some State and Federal officials thought the combined costs of the habitat improvements and the restrictions on hydropower were too costly and had put forward a proposal to eliminate the critical habitat unit designation. They were asked if they would contribute to the Four Corners Region Threatened and Endangered Fish Trust Fund.

Respondents were also told that efforts to raise funds would involve contributions from all U.S. taxpayers. If a majority of households voted in favor of the fund, the fish species would be protected from extinction. This would be accomplished through water releases from Federal dams timed to benefit fish, and through the purchase of water rights to maintain instream flows. Also, within the next 15 years, three fish species would increase in population to the point that they would no longer be listed as threatened species.

On the other hand, if a majority of households in the U.S. voted not to approve the fund, the critical habitats shown on the map would be eliminated. This would mean that water diversion activity and maximum power production would reduce the amount of habitat for these nine fish species. Respondents were told that if this occurred, biologists expected that four of the nine fish species would likely become extinct in 15 years.

The exact wording on the questionnaire was:

Suppose a proposal to establish a Four Corners Region Threatened and Endangered Fish Trust Fund was on the ballot in the next nationwide election. How would you vote on this proposal? Remember, by law, the funds could only be used to improve habitat for fish. If the Four Corners Region Threatened and Endangered Fish Trust Fund was the only issue on the next ballot and it would cost your household \$ _____ every year, would you vote in favor of it?

(Please circle one.) YES / NO

The dollar amount, blank in the above illustration, was filled in with one of 14 amounts ranging from \$1-\$3 to \$350, which were randomly assigned to survey respondents.

Results

The questionnaire was sent to a random sample of 800 households in the Four Corners states of Arizona, Colorado, New Mexico, and Utah (with the proportions based on the states' relative populations). An additional 800 households were sampled from the rest of the U.S. The average willingness to pay was estimated to be \$195 per household. When extrapolated to the general population, the value of preserving the habitat areas was determined to be far in excess of the costs.

Case Study # 5 | Salmon Restoration [\[ref.\]](#)

Situation

As more and more anadromous fish species have been added to the Endangered Species list, the removal of dams blocking salmon migration routes has been proposed. The first dams to receive a formal environmental impact analysis for removal are the Elwha and Glines dams on the Elwha River on the Olympic Peninsula in Washington. These 200-foot dams are very old and have no fish ladders. They block migration of fish to 70 miles of pristine spawning grounds in Olympic National Park, and it was estimated that their removal would more than triple salmon populations on the Elwha River. However, the cost to remove the dams and the 50 years of sediment build-up behind them was estimated to be in the neighborhood of \$100-\$125 million.

Application

A contingent valuation survey was developed to estimate the economic values associated with the removal of the dams. Households in Washington and elsewhere were asked if they would vote in favor of removing the dams and restoring the river, in order to triple salmon populations at an annual cost that varied across households.

Results

The estimated economic values per household ranged from \$73 for Washington households to \$68 for the rest of the U.S. households. Using these results, the economic value to Washington residents alone would nearly be enough to justify removing the dams and restoring the river. If one applied the average willingness to pay per household to the remaining 86 million households in the rest of the U.S., national willingness to pay was in excess of \$1 billion. Researchers concluded that

despite any upward bias in the estimates of willingness to pay, the national benefits of removing the dams, in all likelihood, far exceeded the costs.

These results were included in the draft and final Environmental Impact Statements on dam removal which were prepared by the National Park Service. The recommendation in both the draft and final Environmental Impact Statement was to remove both dams and restore the Elwha River. In its budget request to Congress, the Clinton Administration included a request for money to purchase the dams from the private owners, with the intent of requesting funds for dam removal and restoration in subsequent years.

Summary of the Contingent Valuation Method:

The contingent valuation method (CVM) is used to estimate economic values for all kinds of ecosystem and environmental services. The method has great flexibility, allowing valuation of a wider variety of non-market goods and services than is possible with any other non-market valuation technique. It can be used to estimate both use and non-use values, and it is the most widely used method for estimating non-use values. It is also the most controversial of the non-market valuation methods.

The contingent valuation method involves directly asking people, in a survey, how much they would be willing to pay for specific environmental services. In some cases, people are asked for the amount of compensation they would be willing to accept to give up specific environmental services. It is called 'contingent' valuation, because people are asked to state their willingness to pay, contingent on a specific hypothetical scenario and description of the environmental service.

The contingent valuation method is referred to as a 'stated preference' method, because it asks people to directly state their values, rather than inferring values from actual choices, as the 'revealed preference' methods do. It circumvents the absence of markets for environmental goods by presenting consumers with hypothetical markets in which they have the opportunity to pay for the good in question. The hypothetical market may be modeled after either a private goods market or a political market.

The fact that contingent valuation is based on what people say they would do, as opposed to what people are observed to do, is the source of its greatest strengths

and its greatest weaknesses. Contingent valuation is one of the only ways to assign dollar values to non-use values of the environment; values that do not involve market purchases and may not involve direct participation. These values are sometimes referred to as passive use values. They include everything from the basic life support functions associated with ecosystem health or biodiversity, to the enjoyment of a scenic vista or a wilderness experience, to appreciating the option to fish or bird watch in the future, or the right to bequest those options to your grandchildren. It also includes the value people place on simply knowing that giant pandas or whales exist.

It is clear that people value non-use, or passive use, environmental benefits. However, these benefits are likely to be implicitly treated as zero unless their dollar value is somehow estimated. So, how much are they worth? Since people do not reveal their willingness to pay for them through their purchases or by their behavior, the only option for estimating a value is by asking them questions.

However, the fact that the contingent valuation method is based on asking people questions, as opposed to observing their actual behavior, is the source of enormous controversy. The conceptual, empirical, and practical problems associated with developing dollar estimates of economic value on the basis of how people respond to hypothetical questions about hypothetical market situations are debated constantly in the economics literature. CV researchers are attempting to address these problems, but they are far from finished. Meanwhile, many economists, psychologists and sociologists, for many different reasons, do not believe the dollar estimates that result from CV are valid. More importantly, many jurists and policy-makers will not accept the results of CV. Because of its controversial nature, users must be extremely cautious about spending money on CV studies and about using the results of CV studies.

Applying the Contingent Valuation Method:

Applying the contingent valuation method is generally a complicated, lengthy, and expensive process. In order to collect useful data and provide meaningful results, the contingent valuation survey must be properly designed, pre-tested, and implemented. Contingent valuation survey questions must focus on specific environmental service(s) and a specific context that is clearly defined and understood by survey respondents. In other words, a CV survey to assess the dollar value of the results of an environmental improvement cannot be based on the environmental improvement

itself, but on increases in specific environmental services that the improvement is expected to provide.

The results of contingent valuation surveys are often highly sensitive to what people believe they are being asked to value, as well as the context that is described in the survey. Thus, it is essential for CV researchers to clearly define the services and the context, and to demonstrate that respondents are actually stating their values for these services when they answer the valuation questions.

A good CV study will consider the following in its application:

- Before designing the survey, learn as much as possible about how people think about the good or service in question. Consider people's familiarity with the good or service, as well as the importance of such factors as quality, quantity, accessibility, the availability of substitutes, and the reversibility of the change.
- Determine the extent of the affected populations or markets for the good or service in question, and choose the survey sample based on the appropriate population.
- The choice scenario must provide an accurate and clear description of the change in environmental services associated with the event, program, investment, or policy choice under consideration. If possible, convey this information using photographs, videos, or other multi-media techniques, as well as written and verbal descriptions.
- Unlike ordinary survey questions, which sometimes ask respondents whether they are willing to pay x dollars to improve air quality, the nature of the good and the changes to be valued must be specified in detail in a CV survey. It is also important to make sure that respondents do not inadvertently assume that one or more related improvements are included. For example, if people are asked to value only air visibility, it would be important to make sure that they do not include their value for health-related improvements in their stated willingness to pay amount. Similarly, if people have a tendency to think of environmental improvements in general, even when asked about water quality alone, it would be necessary to point out specifically that environmental quality, other than water quality, would remain the same.
- Questions can be asked in a variety of ways, using both open-ended and closed-ended formats. In the open-ended format, respondents are asked to state their maximum willingness to pay for the environmental improvement. With the closed-ended format, also referred to as discrete choice, respondents are asked whether or not they would be willing to pay a particular amount for the

environmental improvement, or whether they would vote yes or no for a specific policy at a given cost. The discrete choice format is generally accepted as the preferred method.

- In addition to the hypothetical question that asks for willingness to pay, the survey must specify the mechanism by which the payment will be made, for example through increased taxes. In order for the question to be effective, the respondent must believe that if the money was paid, whoever was collecting it could effect the specified environmental change.
- Respondents should be reminded to consider their budget constraints.
- Specify whether comparable services are available from other sources, when the good is going to be provided, and whether the losses or gains are temporary or permanent.
- Respondents should understand the frequency of payments required, for example monthly or annually, and whether or not the payments will be required over a long period of time in order to maintain the quantity or quality change. They should also understand who would have access to the good and who else will pay for it, if it is provided.
- In the case of collectively held goods, respondents should understand that they are currently paying for a given level of supply. The scenario should clearly indicate whether the levels being valued are improvements over the status quo, or potential declines in the absence of sufficient payments.
- If the household is the unit of analysis, the reference income should be the household's, rather than the respondent's, income.
- Thoroughly pre-test the valuation questionnaire for potential biases. Pre-testing includes testing different ways of asking the same question, testing whether the question is sensitive to changes in the description of the good or resource being valued, and conducting post-survey interviews to determine whether respondents are stating their values as expected.
- Include validation questions in the survey, to verify comprehension and acceptance of the scenario, and to elicit socioeconomic and attitudinal characteristics of respondents, in order to better interpret variation in responses across respondents.
- CVM can be conducted as in-person interviews, telephone interviews or mail surveys. The in-person interview is the most expensive survey administration format, but is generally considered to be the best approach, especially if visual materials are to be presented.
- Interview a large, clearly defined, representative sample of the affected population.

- Achieve a high response rate and a mix of respondents that represents the population.
- Whatever survey instruments and survey designs are used, and whatever response rate is achieved, make sure that survey results are analyzed and interpreted by professionals before making any claims about the resulting dollar values.

Advantages of the Contingent Valuation Method:

- Contingent valuation is enormously flexible in that it can be used to estimate the economic value of virtually anything. However, it is best able to estimate values for goods and services that are easily identified and understood by users and that are consumed in discrete units (e.g., user days of recreation), even if there is no observable behavior available to deduce values through other means.
- CV is the most widely accepted method for estimating total economic value, including all types of non-use, or passive use, values. CV can estimate use values, as well as existence values, option values, and bequest values.
- Though the technique requires competent survey analysts to achieve defensible estimates, the nature of CV studies and the results of CV studies are not difficult to analyze and describe. Dollar values can be presented in terms of a mean or median value per capita or per household, or as an aggregate value for the affected population.
- CV has been widely used, and a great deal of research is being conducted to improve the methodology, make results more valid and reliable, and better understand its strengths and limitations.

Issues and Limitations of the Contingent Valuation Method:

- Although the contingent valuation method has been widely used for the past two decades, there is considerable controversy over whether it adequately measures people's willingness to pay for environmental quality.
- People have practice making choices with market goods, so their purchasing decisions in markets are likely to reflect their true willingness to pay. CV assumes that people understand the good in question and will reveal their preferences in the contingent market just as they would in a real market. However, most people are unfamiliar with placing dollar values on

environmental goods and services. Therefore, they may not have an adequate basis for stating their true value.

- The expressed answers to a willingness to pay question in a contingent valuation format may be biased because the respondent is actually answering a different question than the surveyor had intended. Rather than expressing value for the good, the respondent might actually be expressing their feelings about the scenario or the valuation exercise itself. For example, respondents may express a positive willingness to pay because they feel good about the act of giving for a social good (referred to as the 'warm glow' effect), although they believe that the good itself is unimportant. Respondents may state a positive willingness to pay in order to signal that they place importance on improved environmental quality in general. Alternatively, some respondents may value the good, but state that they are not willing to pay for it, because they are protesting some aspect of the scenario, such as increased taxes or the means of providing the good.
- Respondents may make associations among environmental goods that the researcher had not intended. For example, if asked for willingness to pay for improved visibility (through reduced pollution), the respondent may actually answer based on the health risks that he or she associates with dirty air.
- Some researchers argue that there is a fundamental difference in the way that people make hypothetical decisions relative to the way they make actual decisions. For example, respondents may fail to take questions seriously because they will not actually be required to pay the stated amount. Responses may be unrealistically high if respondents believe they will not have to pay for the good or service and that their answer may influence the resulting supply of the good. Conversely, responses may be unrealistically low if respondents believe they will have to pay.
- The payment question can either be phrased as the conventional 'What are you willing to pay (WTP) to receive this environmental asset?', or in the less usual form, 'What are you willing to accept (WTA) in compensation for giving up this environmental asset?'. In theory, the results should be very close. However, when the two formats have been compared, WTA very significantly exceeds WTP. Critics have claimed that this result invalidates the CVM approach, showing responses to be expressions of what individuals would like to have happen rather than true valuations.
- If people are first asked for their willingness to pay for one part of an environmental asset (e.g. one lake in an entire system of lakes) and then asked to value the whole asset (e.g. the whole lake system), the amounts stated may be similar. This is referred to as the 'embedding effect'.

- In some cases, people's expressed willingness to pay for something has been found to depend on where it is placed on a list of things being valued. This is referred to as the "ordering problem."
- Respondents may give different willingness to pay amounts, depending on the specific payment vehicle chosen. For example, some payment vehicles, such as taxes, may lead to protest responses from people who do not want increased taxes. Others, such as a contribution or donation, may lead people to answer in terms of how much they think their 'fair share' contribution is, rather than expressing their actual value for the good.
- Many early studies attempted to prompt respondents by suggesting a starting bid and then increasing or decreasing this bid based upon whether the respondent agreed or refused to pay a such sum. However, it has been shown that the choice of starting bid affects respondents' final willingness to pay response.
- Strategic bias arises when the respondent provides a biased answer in order to influence a particular outcome. If a decision to preserve a stretch of river for fishing, for example, depends on whether or not the survey produces a sufficiently large value for fishing, the respondents who enjoy fishing may be tempted to provide an answer that ensures a high value, rather than a lower value that reflects their true valuation.
- Information bias may arise whenever respondents are forced to value attributes with which they have little or no experience. In such cases, the amount and type of information presented to respondents may affect their answers
- Non-response bias is a concern when sampling respondents, since individuals who do not respond are likely to have, on average, different values than individuals who do respond.
- Estimates of nonuse values are difficult to validate externally.
- When conducted to the exacting standards of the profession, contingent valuation methods can be very expensive and time-consuming, because of the extensive pre-testing and survey work.
- Many people, including jurists policy-makers, economists, and others, do not believe the results of CV.



[Back to top](#)

Continue to:

[**Method 7: Contingent Choice Methods**](#)

Back to:

[**Method 5: Damage Cost Avoided, Substitute Cost, and Replacement Cost Methods**](#)

Back to:

[**Dollar-Based Ecosystem Valuation Methods**](#)

Environmental Links:

- WeriGuam.org - Water and Environmental Research Institute of Guam.
- SolarStorms.org - Solar Storms and Space Weather.
- StopClimateChange.net - Stop climate change, play your part.
- FaceTheFactsUSA.org - USA facts.

Ecosystem Valuation



Purposes & Uses of this Website

