

The DESIGN

A Case Study on UX Design

THINGS

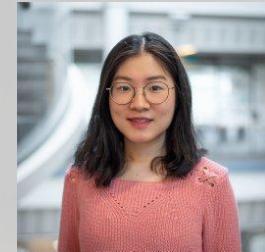
User Interface Development
EECS 493 - Winter 2025



Goals for today:

Review the design and development process of a user interface that uses AI to assist feedback provision.

Hope this will give you inspirations on your final project, both on design ideas, and also on usability issues to look for when you iteratively improve your product.



Xinyi Lu



Adi Mahesh



Zejia Shen

Context

In the course - Introduction to Economics (ECON 101), there are a series of writing assignments (in which students write short essays to explain economic phenomenon). Writing fellows provide feedback to students' written essays.

The goal of the system FeedbackWriter is to help writing fellows to more effectively provide feedback to students' essays.

Currently writing fellows use Canvas speed grader.

Demo

Initial Prototype

786131.docx

[Home](#) [Generate AI comments](#) [Highlight text and add comment](#) [Font Size](#) [Mark assignment as complete](#)

Scroll down for peer review feedback

Assignment

Date: January 21st, 2024

To: U.S Senate Candidate

From: Advisor

Subject: Understanding the Dynamics of the Labor Market and Automation's Impact

When learning the fundamentals of a market, one of the first concepts to grasp is the concept of market equilibrium. When the price of the amount supplied and the quantity demanded are equal, a market is in equilibrium. Said another way, this indicates that every seller in the market who was prepared to sell at a specific price has found a buyer, and every buyer has located a seller who is willing to trade at a price they can accept.

Within a market, supply and demand can be influenced by six factors. First off, the costs of items associated with production, such as complements and substitutes, can be affected by the pricing of other goods. A complement is anything generated to go with another good that is produced, whereas a substitute replaces another good that would have been made in its absence. The second is resource/input, and taxes make up the third. The final three are technology, expectations, and the quantity of producers. All of these factors influence consumers and suppliers, which affect the amount supplied and demanded. Automation can also lead to increased income inequality as jobs are replaced by machines which are lower-paying and skilled.

With respect to the scenario, an improvement in the technology within the automation market will affect the labor market negatively. Technological improvements lead to an increase in efficiency within the automation market. The demand for automation will increase, which will cause the labor market to decrease, as they are substitute goods. In regards to the impact on the markets, as efficiency increases, so does supply. This means prices will fall and increase demand. Contrarily, unemployment rates will increase.

Word Count: 257

Bibliography:

S, Alisha. "The Rise of Automation-How It Is Impacting the Job Market." Medium, Towards AI, 23 June 2023, pub.towardsai.net/the-rise-of-automation-how-it-is-impacting-the-job-market-e8a6c7d5e6e3.

Rubric Group Table

Rubric Group	Rubric Item	Accepted	Comment
	Correct	Correct	You included a lot of good information and factors that I feel would help the candidate who is reading your memo but I do think you could show more of a connection between all the terms you included especially on the first page. By connecting these different factors in a way that is easy to visualize, you will have a strong memo that is informative on the factors and variables that lead to changes in the market. In addition, I would simplify certain factors because you just dropped "resources/input" and "taxes" but didn't elaborate on them for the audience to understand
	Incorrect	Incorrect	The advisor explained the concepts of market equilibrium in two ways, one more difficult and one easier to understand for the candidate. In the second paragraph, the advisor fails to identify the shifters of supply and demand, respectively. It is important to note that there are different effects. The effects on goods and services are not explained, except that "prices will fall and increase"

Changes we've made during the iterations (through user testing, think aloud, prototyping)

- Changes of UI elements (lower-level usability issues)
 - Fitts' Law, Gulf of execution/evaluation, usability, efficiency, discoverability, learnability
 - Nielsen's heuristic rules
- Changes based on users' mental models
 - The users don't do the tasks in a similar way as we anticipated
- Changes for responsible use of AI
- Changes based on technical feasibilities, e.g., databases.

Changes we've made during the iterations (through user testing, think aloud, prototyping)

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 - Nielsen's heuristic rules
- Changes based on users' mental models
 - The users don't do the tasks in a similar way as we anticipated
- Changes for responsible use of AI
- Changes based on technical feasibilities, e.g., databases.

Changes of UI elements (lower-level usability issues)

1. Minimize scrolling/traveling of cursor

Example 1: One page to multiple pages

Originally, everything is on the same page (to make it simpler and assuming people need to view all the information at the same time). Later, we changed it to three tabs. Scrolling takes longer than switching tabs, and people can't view all the information at the same time, even when they're on the same page.

1. One page to multiple pages (Original: one page)

Sample_222_fakefinal_draft.docx

Home Generate AI comments Highlight & Comment Font Size Mark assignment as complete ✓

Scroll down for peer review feedback

Assignment

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

The rising popularity of alternative milk substitutes, such as oat and soy milk, has significantly reduced demand for almond milk. As consumers shift their preferences, the quantity demanded for almond milk decreases, leading to financial distress for almond farmers in California. Simultaneously, reduced almond production has led to a decrease in agricultural water usage, a positive outcome in a state frequently experiencing drought conditions. Given the environmental concerns surrounding water consumption in almond farming, implementing a tax on agricultural water usage is a viable policy to address both economic and environmental issues.

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more

Feedback

Rubric Group: Clarity/conciseness

Rubric Item: Essays/most sentences are understandable/clean/proof read.

GPT Feedback: Your essay is clear and well-organized, demonstrating careful proofreading and attention to detail.

Pre-designed Feedback: No predesigned feedback available.

Remove GPT Feedback Remove Predesigned Feedback Revert to Original Feedback

Rubric Group: Clarity/conciseness

Rubric Group Table

Rubric Group	Rubric Item	Judgment	Comment
Citations and Word Count	At most 500 words.	✗ False	<p>GPT Feedback: Please revise your essay to ensure it does not exceed the 500-word limit, focusing on conciseness and clarity.</p> <p>Pre-designed Feedback: Remember to limit the length to be within 500 words.</p>
Clarity/conciseness	Essays/most sentences are understandable/clean/proof read.	✓ True	<p>GPT Feedback: Your essay is clear and well-organized, demonstrating careful proofreading and attention to detail.</p> <p>Pre-designed Feedback: No predesigned feedback available.</p>

1. One page to multiple pages (Updated: three tabs)

Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#)) 0/1 Graded

[Highlight & Comment](#) [Essay](#) [Table](#) [Preview](#) [^ Collapse All](#) [Sort by: Rubric Order ▾](#)

Assignment (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Feedback

Know the difference between [demand] and [quantity demanded].

Necessary Basic Economic Concepts (General Economic Structure) ✖️ trash ^

Historic Feedback [Add to feedback](#)

Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback [Add to feedback](#) ✖️

Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

Add some feedback here...

Know the difference between [supply] and [quantity supplied].

Necessary Basic Economic Concepts (General Economic Structure) ✖️ trash ^

Historic Feedback

Not available

GPT Feedback [Add to feedback](#) ✖️

You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

Changes of UI elements (lower-level usability issues)

1. One page to multiple pages

Originally, everything is on the same page (to make it simpler and assuming people need to view all the information at the same time). Later, we changed it to three tabs. Scrolling takes longer than switching tabs, and people can't view all the information at the same time, even when they're on the same page.

How is Fitts' Law related to this re-design?

Changes of UI elements (lower-level usability issues)

1. Minimize scrolling/traveling of cursor

Example 2: Collapse comment boxes

1. Minimize scrolling/traveling of cursor (Example 2: Collapse comment boxes)

(Original: all comment boxes are displayed by default)

Sample_222_fakefinal_draft.docx

The screenshot shows a Microsoft Word document titled "Sample_222_fakefinal_draft.docx". At the top, there's a toolbar with buttons for Home, Generate AI comments, Highlight & Comment, Font Size, and Mark assignment as complete. Below the toolbar, a message says "Scroll down for peer review feedback".

Assignment

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

The rising popularity of alternative milk substitutes, such as oat and soy milk, has significantly reduced demand for almond milk. As consumers shift their preferences, the quantity demanded for almond milk decreases, leading to financial distress for almond farmers in California. Simultaneously, reduced almond production has led to a decrease in agricultural water usage, a positive outcome in a state frequently experiencing drought conditions. Given the environmental concerns surrounding water consumption in almond farming, implementing a tax on agricultural water usage is a viable policy to address both economic and environmental issues.

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more

Feedback

Rubric Group: Clarity/conciseness

| Rubric Item: Essays/most sentences are understandable/clean/proof read.

GPT Feedback: Your essay is clear and well-organized, demonstrating careful proofreading and attention to detail.

Pre-designed Feedback: No predesigned feedback available.

Buttons at the bottom of the feedback section: Remove GPT Feedback, Remove Predesigned Feedback, Revert to Original Feedback.

Feedback

Rubric Group: Clarity/conciseness

1. Minimize scrolling/traveling of cursor (Example 2: Collapse comment boxes)

Updated: Collapse All/Expand All

The screenshot shows a writing assignment interface with the following elements:

- Header:** Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#))
- Grade:** 0/1 Graded
- Tools:** Highlight & Comment, Essay, Table, Preview, **Collapse All** (button highlighted with a red box), Sort by: Rubric Order
- Assignment Summary:** Assignment (531 words)
- Text Content:** A paragraph about almond milk substitutes and market dynamics.
- Feedback Section:** Titled "Feedback". It contains two items:
 - Historic Feedback:** Know the difference between [demand] and [quantity demanded].
Feedback: Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.
 - GPT Feedback:** Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.
- Second Feedback Item:** Titled "Know the difference between [supply] and [quantity supplied]".
 - Historic Feedback:** Not available
 - GPT Feedback:** You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

Changes of UI elements (lower-level usability issues)

1. Minimize scrolling/traveling of cursor

Example 3: change highlights

1. Minimize scrolling/traveling of cursor (Example 3: change highlights)

(Original: click a button on the right, and paint on the left)

Student, Unnamed (Writing Assignment 2 first draft) 0/1 Graded

Highlight & Comment Font Size + Expand All Essay Table Feedback Tutorial

Assignment (540 words)

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

The rising popularity of alternative milk substitutes, such as oat and soy milk, has significantly reduced the demand for almond milk. As consumers shift their preferences, almond milk sales decline, leading to financial distress for almond farmers in California. Simultaneously, reduced almond production has led to a decrease in agricultural water usage, a positive outcome in a state frequently experiencing drought conditions. Given the environmental concerns surrounding water consumption in almond farming, implementing a tax on agricultural water usage is a viable policy to address both economic and environmental issues.

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further reducing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use.

The market for alternative milk substitutes would also be affected by the tax on agricultural water consumption. As the price of almond milk increases, consumers will continue shifting towards oat and soy milk, increasing demand in the alternative milk market. Producers of these substitutes may respond by expanding production, potentially benefiting from economies of scale and lowering their costs. The increased availability of alternative milk substitutes would further reduce almond milk's market share, accelerating the trend away from almond-based dairy alternatives.

In the water market, the tax would serve to decrease overall agricultural water consumption. Since almond farming is particularly water-intensive, a tax would likely reduce water demand among almond farmers. This could lead to a reallocation of water resources toward other agricultural sectors or non-agricultural uses that may provide higher economic or environmental benefits. The tax revenue collected could be reinvested into water conservation initiatives, further improving the state's ability to manage its limited water supply efficiently.

Feedback Sort by: Rubric Order

The student correctly used the term changes in [demand] -- which are only due to change in consumer preference, or price of substitutes, or demand of the final good-- and changes in [quantity demanded] -- which are due to change in price of the same good without these scenarios for change in demand.

Necessary Basic Economic Concepts (General Economic Structure) 

Historic Feedback Add to feedback Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback [object Object] Add to feedback

The student correctly used the term changes in [supply] -- which are due to change in price of the input-- and changes in [quantity supplied] -- which are due to change in price of the same good without these scenarios for change in supply.

Necessary Basic Economic Concepts (General Economic Structure) 

Historic Feedback Add to feedback Make sure you understand the difference between supply and quantity supplied when discussing adjustments in the market.

GPT Feedback [object Object] Add to feedback

The student did not demonstrate the market equilibrium as always efficient.

Necessary Basic Economic Concepts (General Economic Structure) 

1. Minimize scrolling/traveling of cursor (Example 3: change highlights)

(Updated: cursors at the beginning and end of each sentence, can drag to paint)

Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#)) 0/1 Graded

Highlight & Comment Essay Table Preview Collapse All Sort by: Rubric Order

Assignment (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increased. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Feedback

Know the difference between [demand] and [supply].
Necessary Basic Economic Concepts

Historic Feedback Add to feedback
Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

Add some feedback here...

Know the difference between [supply] and [quantity supplied].
Necessary Basic Economic Concepts (General Economic Structure)

Historic Feedback Not available

GPT Feedback Add to feedback
You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

< 1/2 >

Changes of UI elements (lower-level usability issues)

2. Reduce clickable elements. Group functionalities. Simplify the UI.

2. Reduce clickable elements. Group functionalities. Simplify the UI.

(Original: a lot of buttons - Flip judgement is a button)

Sample_222_fakefinal_draft.docx

Home Generate AI comments Highlight & Comment Font Size Mark assignment as complete ✓

Scroll down for peer review feedback

Assignment

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

The rising popularity of alternative milk substitutes, such as oat and soy milk, has significantly reduced demand for almond milk. As consumers shift their preferences, the quantity demanded for almond milk decreases, leading to financial distress for almond farmers in California. Simultaneously, reduced almond production has led to a decrease in agricultural water usage, a positive outcome in a state frequently experiencing drought conditions. Given the environmental concerns surrounding water consumption in almond farming, implementing a tax on agricultural water usage is a viable policy to address both economic and environmental issues.

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more

Feedback

Collapse Flip Judgment

Rubric Group: Clarity/conciseness

| Rubric Item: Essays/most sentences are understandable/clean/proof read.

GPT Feedback: Your essay is clear and well-organized, demonstrating careful proofreading and attention to detail.

Pre-designed Feedback: No predesigned feedback available.

Remove GPT Feedback Remove Predesigned Feedback Revert to Original Feedback

Collapse Flip Judgment

Rubric Group: Clarity/conciseness

2. Reduce clickable elements. Group functionalities. Simplify the UI. (Updated: integrate Flip Judgement into the UI element itself)

Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#)) 0/1 Graded

Highlight & Comment Essay Table Preview ⌂ Collapse All Sort by: Rubric Order ▾

Assignment (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

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A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Feedback

Know the difference bewteen [demand] and [quantity demanded].

Necessary Basic Economic Concepts (General Economic Structure) ⌂

Historic Feedback Add to feedback
Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback Add to feedback ⌂
Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

Add some feedback here...

Know the difference between [supply] and [quantity supplied].

Necessary Basic Economic Concepts (General Economic Structure) ⌂

Historic Feedback
Not available

GPT Feedback Add to feedback ⌂
You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

2. Reduce clickable elements. Group functionalities. Simplify the UI.

(Original - Another version : a lot of buttons)

Sample_222_fakefinal_draft.docx

Home Generate AI comments Highlight & Comment Font Size Mark assignment as complete ✓

Scroll down for peer review feedback

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To: Governor of California
From: Economic Advisor
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A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further decreasing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use. Additionally, the tax burden may be shared by consumers in the form of higher almond milk prices, as well as by agricultural suppliers who may experience reduced demand for their products.

The market for alternative milk substitutes would also be affected by the tax on agricultural water consumption. As the price of almond milk increases, consumers will continue shifting towards oat and soy milk, increasing demand in the alternative milk market. Producers of these substitutes may respond by expanding production, potentially benefiting from economies of scale and lowering their costs. The increased availability of alternative milk substitutes would further reduce almond milk's market share, accelerating the trend away from almond-based dairy alternatives. Additionally, the degree to which consumers switch between almond milk and other alternatives depends on the cross-price elasticity of

Feedback

Mentions that before the policy, change in preferences causes [demand] for oat and soy (alternative) milk to increase, and mention that the price increases in the oat and soy (alternative) milk market due to preference change.

Pre-designed Feedback GPT Feedback

Add some feedback here...

Remove GPT Feedback Remove Predesigned Feedback Revert to Original Feedback Get Alternative Feedback

Mentions that before the policy, change in Preferences also causes [demand] for Almond Milk to decrease, and mention that the price decreases in the almond milk market due to preference change.

Pre-designed Feedback GPT Feedback

Add some feedback here...

Remove GPT Feedback Remove Predesigned Feedback Revert to Original Feedback Get Alternative Feedback

2. Reduce clickable elements. Group functionalities. Simplify the UI.

Left: Old; Right: New.

First button is displayed as a drawdown; The edit button is removed, users can double click to edit

The image shows two identical feedback sections side-by-side. Each section has a title bar with a speech bubble icon and the word "Feedback". Below the title bar is a text area containing a paragraph about policy changes affecting milk markets. Underneath the text area are two buttons: "Pre-designed Feedback" and "GPT Feedback". Below these buttons is a text input field with placeholder text "Add some feedback here...". At the bottom of each section are four buttons: "Remove GPT Feedback", "Remove Predesigned Feedback", "Revert to Original Feedback", and "Get Alternative Feedback". Each section also features a small vertical scroll bar on its right side. A red box highlights the edit icons (a pencil, a magnifying glass, a plus sign, and a minus sign) located at the top right of each text area.

The image shows a single feedback section with a title bar "Feedback" and a speech bubble icon. The main content area contains a list item with a checkbox and a pink background. The text in the list item is "Know the difference bewteen [demand] and [quantity demanded].". Below this is a dropdown menu labeled "Necessary Basic Economic Concepts (General Economic Structure)" with a "▼" icon. To the right of the dropdown are three small icons: a plus sign, a trash can, and an upward arrow. The section is divided into two panels: "Historic Feedback" and "GPT Feedback". The "Historic Feedback" panel contains the text "Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market." The "GPT Feedback" panel contains the text "Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis." At the bottom of the section is a text input field with placeholder text "Add some feedback here...". A red box highlights the edit icons (a pencil, a magnifying glass, a plus sign, and a minus sign) located at the top right of the text area. Below the main section is another identical section, partially visible, with a blue header and a checked checkbox. The bottom right corner of the page shows a navigation bar with arrows and the number "2/2".

Changes of UI elements (lower-level usability issues)

3. Enhance visualization to improve discoverability and understandability (gulf of execution and evaluation)

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(Original: these are supposed to be clickable to flip the judgement , but not obvious to users)

The screenshot displays a user interface for peer review, likely from a platform like Turnitin or相似的系统. At the top, there are navigation buttons: Home, Generate AI comments, Highlight & Comment, Font Size, and Mark assignment as complete. Below these, a message says "Scroll down for peer review feedback".

Assignment

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

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A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further decreasing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use. Additionally, the tax burden may be shared by consumers in the form of higher almond milk prices, as well as by agricultural suppliers who may experience reduced demand for their products.

The market for alternative milk substitutes would also be affected by the tax on agricultural water consumption. As the price of almond milk increases, consumers will continue shifting towards oat and soy milk, increasing demand in the alternative milk market. Producers of these substitutes may respond by expanding production, potentially benefiting from economies of scale and lowering their costs. The increased availability of alternative milk substitutes would further reduce almond milk's market share, accelerating the trend away from almond-based dairy alternatives. Additionally, the degree to which consumers switch between almond milk and other alternatives depends on the cross-price elasticity of

Feedback

Mentions that before the policy, change in preferences causes [demand] for oat and soy (alternative) milk to increase, and mention that the price increases in the oat and soy (alternative) milk market due to preference change.

Mentions that before the policy, change in Preferences also causes [demand] for Almond Milk to decrease, and mention that the price decreases in the almond milk market due to preference change.

3. Enhance visualization to improve discoverability and understandability (gulf of execution and evaluation)

Improvement 1: make it a checkbox

Sample_222_fakefinal_draft.docx

From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

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In the water market, the tax would serve to decrease the quantity demanded for agricultural water, as opposed to reducing overall demand for water, which is determined by broader factors such as population growth and industrial use.

Feedback

Mentions that before the policy, change in preferences causes [demand] for oat and soy (alternative) milk to increase, and mention that the price increases in the oat and soy (alternative) milk market due to preference change.

Initial Market Change Analysis (Market Analysis)

Historic Feedback

Not available

GPT Feedback

I would have liked to see you mention that the change in preferences not only increases demand for oat and soy milk but also leads to a price increase in that market.

Screenshot

Initial Market Change Analysis (Market Analysis)

3. Enhance visualization to improve discoverability and understandability (gulf of execution and evaluation)

Improvement 2 (final version) : added color coding

Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#)) 0/1 Graded

Highlight & Comment Essay Table Preview ^ Collapse All Sort by: Rubric Order ▾

Assignment (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Feedback

Know the difference bewteen [demand] and [quantity demanded].
Necessary Basic Economic Concepts (General Economic Structure) ▾

Historic Feedback Add to feedback
Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback Add to feedback
Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

Add some feedback here...

Know the difference between [supply] and [quantity supplied].
Necessary Basic Economic Concepts (General Economic Structure) ▾

Historic Feedback
Not available

GPT Feedback Add to feedback
You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

3. Enhance visualization to improve discoverability and understandability (gulf of execution and evaluation)

Example 2: highlight the working comment box

Original: no visualization

Student, Unnamed (Writing Assignment 2 first draft) 0/1 Graded

Home Highlight & Comment Font Size + Expand All Essay Table Feedback Tutorial

Assignment (540 words)

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

The rising popularity of alternative milk substitutes, such as oat and soy milk, has significantly reduced the demand for almond milk. As consumers shift their preferences, almond milk sales decline, leading to financial distress for almond farmers in California. Simultaneously, reduced almond production has led to a decrease in agricultural water usage, a positive outcome in a state frequently experiencing drought conditions. Given the environmental concerns surrounding water consumption in almond farming, implementing a tax on agricultural water usage is a viable policy to address both economic and environmental issues.

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further reducing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use.

The market for alternative milk substitutes would also be affected by the tax on agricultural water consumption. As the price of almond milk increases, consumers will continue shifting towards oat and soy milk, increasing demand in the alternative milk market. Producers of these substitutes may respond by expanding production, potentially benefiting from economies of scale and lowering their costs. The increased availability of alternative milk substitutes would further reduce almond milk's market share, accelerating the trend away from almond-based dairy alternatives.

In the water market, the tax would serve to decrease overall agricultural water consumption. Since almond farming is particularly water-intensive, a tax would likely reduce water demand among almond farmers. This could lead to a reallocation of water resources toward other agricultural sectors or non-agricultural uses that may provide higher economic or environmental benefits. The tax revenue collected could be reinvested into water conservation initiatives, further improving the state's ability to manage its limited water supply efficiently.

Feedback Sort by: Rubric Order

The student correctly used the term changes in [demand] -- which are only due to change in consumer preference, or price of substitutes, or demand of the final good-- and changes in [quantity demanded] -- which are due to change in price of the same good without these scenarios for change in demand.

Necessary Basic Economic Concepts (General Economic Structure)

Historic Feedback Add to feedback Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback Add to feedback [object Object]

Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

The student correctly used the term changes in [supply] -- which are due to change in price of the input- and changes in [quantity supplied] -- which are due to change in price of the same good without these scenarios for change in supply.

Necessary Basic Economic Concepts (General Economic Structure)

Historic Feedback Add to feedback Make sure you understand the difference between supply and quantity supplied when discussing adjustments in the market.

GPT Feedback Add to feedback [object Object]

Make sure you understand the difference between supply and quantity supplied when discussing adjustments in the market.

The student did not demonstrate the market equilibrium as always efficient.

Necessary Basic Economic Concepts (General Economic Structure)

3. Enhance visualization to improve discoverability and understandability (gulf of execution and evaluation)

Example 2: highlight the working comment box

Updated: the current working comment box is in a different color

The screenshot shows a feedback interface with two main sections: a left panel for the student's essay and a right panel for the teacher's feedback.

Student Essay (Left Panel):

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. **Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases.** Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the governor will have to purchase the surplus. Because of the higher prices for almond milk, we will see a decrease in quantity demanded because consumers will pivot to cheaper alternative milks. The price floor will help almond farmers because it gives them a

Teacher Feedback (Right Panel):

Feedback

No grammatical errors.

Historic Feedback Add to feedback Remember to check for grammatical errors

GPT Feedback Add to feedback There's a small typo in your essay. Did you mean 'oat milk' instead of 'oak milk'? Double-check for such errors to ensure clarity.

Know Supply and Demand represents producers (or sellers) and consumers (or buyers), respectively.

Historic Feedback Not available

GPT Feedback Add to feedback You've shown a clear understanding of supply and demand as they relate to producers and consumers. This foundational knowledge is essential for

Changes of UI elements (lower-level usability issues)

1. Minimize scrolling/traveling of cursor
 - a. Think about what your user's cursor was before they do this activity, try to minimize the travel distance
 - b. Examples (change from one page to multiple tabs, support collapse all, add draggable elements outside each sentence)
2. Simplify UI, reduce unnecessary buttons, group functions
 - a. Think about do the users need this button? Can you make UI elements interactive instead of adding a button? For nested menus, are they discoverable enough? Are icons recognizable
 - b. Examples (make elements checkbox, text edit area interactive)
3. Visualizations to enhance discoverability and understandability
 - a. Think about will your users understand your interface? Would they know where to click? If they're working on something, is there a way for them to get feedback?
 - b. Examples (increase discoverability of buttons, use highlights to help users understand the interface)

Changes we've made during the iterations (through user testing, think aloud, prototyping)

- Changes of UI elements (lower-level usability issues)
 - Fitts' Law, Gulf of execution/evaluation, usability, efficiency, discoverability, learnability
 - Nielsen's heuristic rules
- **Changes based on users' mental models**
 - The users don't do the tasks in a similar way as we anticipated
- Changes for responsible use of AI
- Changes based on technical feasibilities, e.g., databases.

Changes based on users' mental models

Most important to look for during think-aloud, this suggests big changes to the design.

Changes based on users' mental models

1. Rubric Order / Highlight order

Original: comment boxes are organized by the highlights (the order they appear in the essay)

Student, Unnamed

Writing Assignment 2 first draft

1/1 Graded

[Home](#) [Generate AI comments](#) [Highlight & Comment](#) [Export Grading Data](#) [Font Size +](#) [Tutorial](#)

Assignment

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

The rising popularity of alternative milk substitutes, such as oat and soy milk, has significantly reduced the demand for almond milk. As consumers shift their preferences, almond milk sales decline, leading to financial distress for almond farmers in California. Simultaneously, reduced almond production has led to a decrease in agricultural water usage, a positive outcome in a state frequently experiencing drought conditions. Given the environmental concerns surrounding water consumption in almond farming, implementing a tax on agricultural water usage is a viable policy to address both economic and environmental issues.

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further reducing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use.

The market for alternative milk substitutes would also be affected by the tax on agricultural water consumption. As the price of almond milk increases, consumers will continue shifting towards oat and soy milk, increasing demand in the alternative milk market. Producers of these substitutes may respond by expanding production, potentially benefiting from economies of scale and lowering their costs. The increased availability of alternative milk substitutes would further reduce almond milk's market share, accelerating the trend away from almond-based dairy alternatives.

In the water market, the tax would serve to decrease overall agricultural water consumption. Since almond farming is

Add some feedback here...

Mention that the policy will make the [supply] (not quantity supplied) of both almond milk and alternative (oat and soy) milk decrease.

Structural Analysis of the Policy (Market Analysis)

Historic Feedback [Add to feedback](#)
Remember to discuss the influence of policy on the demand/supply for the soy and oat (alternative) milk market and/or the almond milk market. / Be sure to describe how the tax would affect all three markets

GPT Feedback [Add to feedback](#) [X](#)
[object Object] < 2/2 >

Add some feedback here...

Mention that the policy will make the price of both almond milk and alternative (oat and soy) milk increase, and quantity decrease.

Structural Analysis of the Policy (Market Analysis)

Historic Feedback [Add to feedback](#)
Remember to discuss the influence of policy on the

GPT Feedback [Add to feedback](#) [X](#)
[object Object]

Changes based on users' mental models

1. Rubric Order / Highlight order

Updated: Users can choose to organize the comment boxes on rubric order or highlight order

Student, Unnamed

Writing Assignment 2 first draft 0/1 Graded

Home Highlight & Comment Font Size + Expand All Tutorial

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further reducing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use.

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In the water market, the tax would serve to decrease overall agricultural water consumption. Since almond farming is particularly water-intensive, a tax would likely reduce water demand among almond farmers. This could lead to a reallocation of water resources toward other agricultural sectors or non-agricultural uses that may provide higher economic or environmental benefits. The tax revenue collected could be reinvested into water conservation initiatives, further improving the state's ability to manage its limited water supply efficiently.

While this policy may place additional financial burdens on almond farmers, it aligns with California's long-term environmental goals. Almond farmers could adapt by shifting to crops that require less water or by investing in water-saving technologies to mitigate the tax's impact. Additionally, government programs could be introduced to support farmers transitioning to more sustainable agricultural practices, ensuring a balance between economic viability and environmental responsibility.

In conclusion, implementing a tax on agricultural water consumption would reduce water usage and encourage more sustainable farming practices while reinforcing the current trend toward alternative milk substitutes. Although it would present challenges for almond farmers, it would also support California's broader efforts to address water scarcity and

Feedback Sort by: Rubric Order Highlight Order Rubric Order

The student correctly used the term changes in [demand] -- which are only due to change in consumer preference, or price of substitutes, or demand of the final good-- and changes in [quantity demanded] -- which are due to change in price of the same good without these scenarios for change in demand.

Necessary Basic Economic Concepts (General Economic Structure)

Historic Feedback Add to feedback Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback [object Object] Add to feedback Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

The student correctly used the term changes in [supply] -- which are due to change in price of the input-- and changes in [quantity]

Necessary Basic Economic Concepts (General Economic Structure)

Changes based on users' mental models

1. Rubric Order / Highlight order

Reasoning: Users want a fixed order of the rubrics, which reduces their cognitive load in processing them.

Student, Unnamed

Writing Assignment 2 first draft 0/1 Graded

Home Highlight & Comment Font Size + Expand All Tutorial

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further reducing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use.

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Feedback Sort by: Rubric Order ▾
Highlight Order
Rubric Order

The student correctly used the term changes in [demand] -- which are only due to change in consumer preference, or price of substitutes, or demand of the final good-- and changes in [quantity demanded] -- which are due to change in price of the same good without these scenarios for change in demand.

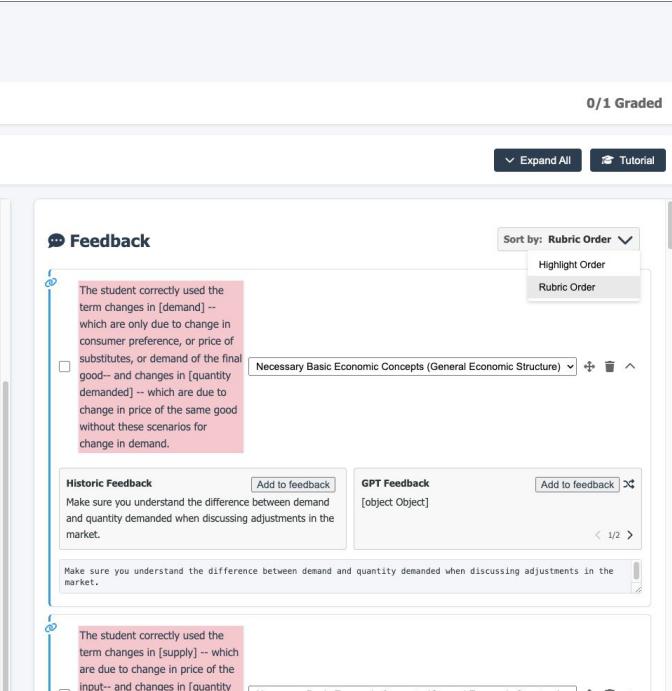
Historic Feedback Add to feedback
Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback Add to feedback
[object Object]

Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

The student correctly used the term changes in [supply] -- which are due to change in price of the input-- and changes in [quantity

Necessary Basic Economic Concepts (General Economic Structure) ↕ ⌂ ⌃



Changes based on users' mental models

2. Historic Feedback and GPT Feedback

Original: only GPT feedback is provided

786131.docx

Home Generate AI comments Highlight text and add comment ⚡ Font Size ⚡ Mark assignment as complete ✓

Scroll down for peer review feedback

Assignment

Date: January 21st, 2024

To: U.S Senate Candidate

From: Advisor

Subject: Understanding the Dynamics of the Labor Market and Automation's Impact

When learning the fundamentals of a market, one of the first concepts to grasp is the concept of market equilibrium. When the price of the amount supplied and the quantity demanded are equal, a market is in equilibrium. Said another way, this indicates that every seller in the market who was prepared to sell at a specific price has found a buyer, and every buyer has located a seller who is willing to trade at a price they can accept.

Within a market, supply and demand can be influenced by six factors. First off, the costs of items associated with production, such as complements and substitutes, can be affected by the pricing of other goods. A complement is anything generated to go with another good that is produced, whereas a substitute replaces another good that would have been made in its absence. The second is resource/input, and taxes make up the third. The final three are technology, expectations, and the quantity of producers. All of these factors influence consumers and suppliers, which affect the amount supplied and demanded. Automation can also lead to increased income inequality as jobs are replaced by machines which are lower-paying and skilled.

With respect to the scenario, an improvement in the technology within the automation market will affect the labor market negatively. Technological improvements lead to an increase in efficiency within the automation market. The demand for automation will increase, which will cause the labor market to decrease, as they are substitute goods. In regards to the impact on the markets, as efficiency increases, so does supply. This means prices will fall and increase demand. Contrarily, unemployment rates will increase.

Word Count: 257

Bibliography:

S, Alisha. "The Rise of Automation-How It Is Impacting the Job Market." Medium, Towards AI, 23 June 2023, pub.towardsai.net/the-rise-of-automation-how-it-is-impacting-the-job-market-e8a6c7d5e6e3.

Feedback



You included a lot of good information and factors that I feel would help the candidate who is reading your memo but I do think you could show more of a connection between all the terms you included especially on the first page. By connecting these different factors in a way that is easy to visualize, you will have a strong memo that is informative on the factors and variables that lead to changes in the market. In addition, I would simplify certain factors because you just dropped "resources/input" and "taxes" but didn't elaborate on them for the audience to understand



The advisor explained the concepts of market equilibrium in two ways, one more difficult and one easier to understand for the candidate. In the second paragraph, the advisor fails to identify the shifters of supply and demand, respectively. It is important to note that there are different effects. The effects on goods and services are not explained, except that "prices will fall and increas"

Changes based on users' mental models

2. Historic Feedback and GPT Feedback

Updated: both historic feedback and GPT feedback are provided.

The screenshot shows a writing assignment interface with the following details:

- Assignment Title:** Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#))
- Status:** 0/1 Graded
- Tools:** Highlight & Comment, Essay, Table, Preview, Collapse All, Sort by: Rubric Order
- Assignment Content:** (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the
- Feedback Section:** (2 items)
- Feedback Item 1:** Know the difference between [demand] and [quantity demanded].
- Historic Feedback:** Add to feedback
Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.
- GPT Feedback:** Add to feedback
Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.
- Feedback Item 2:** Know the difference between [supply] and [quantity supplied].
- Historic Feedback:** Not available
- GPT Feedback:** Add to feedback
You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

Changes based on users' mental models

2. Historic Feedback and GPT Feedback

Updated: both historic feedback and GPT feedback are provided.

The screenshot shows a writing assignment interface with the following elements:

- Header:** Student, Unnamed (Writing Assignment 2 first draft -- [rubs](#) and [commenting box](#))
- Grading:** 0/1 Graded
- Tools:** Highlight & Comment, Essay, Table, Preview, Collapse All, Sort by: Rubric Order
- Assignment Content:** (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

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- Feedback Section:** (2/2)
- Feedback Item 1:** Know the difference between [demand] and [quantity demanded].
 - Historic Feedback:** Add to feedback
Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.
 - GPT Feedback:** Add to feedback
Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.
- Feedback Item 2:** Know the difference between [supply] and [quantity supplied].
 - Historic Feedback:** Not available
 - GPT Feedback:** Add to feedback
You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

Reasoning: Users first make judgements about whether the rubric is satisfied, and then write feedback.

We can have AI only help with judgement and provide an option of a more “deterministic” and “reliable” feedback.

Changes based on users' mental models

3. Paragraph starter

Original: paragraph starters (e.g., in the paragraph "xxx") were automatically added to the feedback

Rubric Group Table

Rubric Group	Rubric Item	Judgment	Comment (with Paragraph)	Exceeds Expectation	Meets Expectation	Missing Expectation
General	-	-				Score: 5 /6
Necessary Basic Economic Concepts (General Economic Structure)	Know the difference between [demand] and [quantity demanded].	False X	You've effectively distinguished between demand and changes in quantity supplied. This distinction is crucial for analyzing market behavior accurately. (e.g. In the paragraph starting with: "A price floor would impact...")			
	Know the difference between [supply] and [quantity supplied].	True ✓	You've accurately used the term quantity supplied. This precision helps in understanding the effects of price changes on supply. (e.g. In the paragraph starting with: "A price floor would impact...")			
	Should not mention that the market equilibrium is always efficient	True ✓				
	Know Supply and Demand represents producers (or sellers) and consumers (or buyers), respectively.	True ✓				
	Show understanding of the Law of Demand, that is, as the price of the good increases, the quantity demanded of the good decreases.	True ✓				

Feedback for this rubric group:

- You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply. (e.g. In the paragraph starting with: "A price floor would impact...")
- You've effectively distinguished between changes in demand and changes in quantity supplied. This distinction is crucial for analyzing market behavior accurately. (e.g. In the paragraph starting with: "A price floor would impact...")
- *(Add new feedback here if needed)*

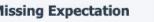
helps in understanding the effects of price changes on supply. (e.g. In the paragraph starting with: "A price floor would impact...")

- You've effectively distinguished between changes in demand and changes in quantity supplied. This distinction is crucial for analyzing market behavior accurately. (e.g. In the paragraph starting with: "A price floor would impact...")
- *(Add new feedback here if needed)*

Changes based on users' mental models

3. Paragraph starter

Update 1: add a “Remove All Paragraph Starter” button that automatically removes all paragraph starters

Rubric Group Table					 Remove All Paragraph Starters
Rubric Group	Rubric Item	Judgment	Comment (with Paragraph Starters)	Score	
General	-	-		<p>Comment Starter: Good first attempt at this prompt! Here's where your paper stands on the rubric and what you should address to improve your memo for the final draft:</p> <p>Additional Overall Comments:</p> <p>• (Add new feedback here if needed)</p>	
Necessary Basic Economic Concepts (General Economic Structure)	Know the difference between [demand] and [quantity demanded].	False 	You've effectively distinguished between changes in demand and changes in quantity demanded. This distinction is crucial for analyzing market behavior accurately. (e.g. In the paragraph starting with: "A price floor would impact...")	 Exceeds Expectation  Meets Expectation  Missing Expectation Score: 5 /6	
	Know the difference between [supply] and [quantity supplied].	True 	You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply. (e.g. In the paragraph starting with: "A price floor would impact...")		
	Should not mention that the market equilibrium is always efficient	True 			
	Know Supply and Demand represents producers (or sellers) and consumers (or buyers), respectively.	True 			
	Show understanding of the Law of Demand, that is, as the price of the good increases, the quantity demanded of the	True 			

Changes based on users' mental models

3. Paragraph starter

Update 2: by default, the paragraph starters are not shown, add a "Add All Paragraph Starter" that automatically adds all paragraph starters

Rubric Group Table

Rubric Group	Rubric Item	Judgment	Comment (with Paragraph Starters)
General	-	-	
Necessary Basic Economic Concepts (General Economic Structure)	Know the difference between [demand] and [quantity demanded].	False	Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.
	Know the difference between [supply] and [quantity supplied].	True	You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply. You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.
	Should not mention that the market equilibrium is always efficient	True	
	Know Supply and Demand represents producers (or sellers) and consumers (or buyers), respectively.	True	
	Show understanding of the Law of Demand, that is, as the price of the good increases, the quantity demanded of the good or service decreases.	True	

Add All Paragraph Starters

Exceeds Expectation

Meets Expectation

Missing Expectation

Score: 0 /6

Feedback for this rubric group:

- You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply. You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.
- Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.
- (Add new feedback here if needed)

Changes based on users' mental models

3. Paragraph starter

Update 2: by default, the paragraph starters are not shown, add a “Add All Paragraph Starter” that automatically adds all paragraph starters

The screenshot shows a digital rubric interface. At the top right is a button labeled "Add All Paragraph Starters". Below it is a horizontal bar with three segments: "Exceeds Expectation", "Meets Expectation", and "Missing Expectation". To the right of these segments is a score input field containing "0" and a maximum value of "/6". Below the segments is a section titled "Feedback for this rubric group:" containing the following text:

• You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply. You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

• Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

• *(Add new feedback here if needed)*

Reasoning:

When people grade and provide feedback, they don't find the paragraph starters to be very useful.

The location of the feedback is obvious based on the rubric and feedback content.

Changes based on users' mental models

Sample_222_fakefinal_draft.docx

The screenshot shows a digital assignment interface with three main sections: Assignment, Feedback, and Rubric Group Table.

Assignment: Shows basic document metadata: To: Governor of California, From: Economic Advisor, Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption. The text of the assignment discusses the impact of a tax on agricultural water usage on almond milk production and farmers.

Feedback: Displays two feedback sections. The first section, "Rubric Group: Clarity/conciseness", includes a GPT Feedback box stating the essay is clear and well-organized, and a Pre-designed Feedback box stating there is no pre-designed feedback available. The second section, "Rubric Group: Clarity/conciseness", also includes a GPT Feedback box and a Pre-designed Feedback box.

Rubric Group Table: A table mapping Rubric Groups to Rubric Items, Judgments, and Comments.

Rubric Group	Rubric Item	Judgment	Comment
Citations and Word Count	At most 500 words.	✗ False	GPT Feedback: Please revise your essay to ensure it does not exceed the 500-word limit, focusing on conciseness and clarity. Pre-designed Feedback: Remember to limit the length to be within 500 words.
Clarity/conciseness	Essays/most sentences are understandable/clean/proof read.	✓ True	GPT Feedback: Your essay is clear and well-organized, demonstrating careful proofreading and attention to detail. Pre-designed Feedback: No predesigned feedback available.

4. Three tabs to view information

Original:

Everything is one the same page. People provide feedback first in the essay, and then view the rubric group table to select the scores.

4. Three tabs to view information

Updated: three tabs

Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#)) 0/1 Graded

Highlight & Comment Essay Table Preview ▲ Collapse All Sort by: Rubric Order

Assignment (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Feedback

Know the difference bewteen [demand] and [quantity demanded]. Necessary Basic Economic Concepts (General Economic Structure) Add to feedback

Historic Feedback Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

Add some feedback here...

Know the difference between [supply] and [quantity supplied]. Necessary Basic Economic Concepts (General Economic Structure) Add to feedback

Historic Feedback Not available

GPT Feedback You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

4. Three tabs to view information

Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#)) 0 / 1 Graded

Highlight & Comment Essay Table Preview ▲ Collapse All Sort by: Rubric Order

Assignment (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Feedback

Know the difference between [demand] and [quantity demanded].

Necessary Basic Economic Concepts (General Economic Structure) Add to feedback

Historic Feedback Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

Add some Feedback here...

Know the difference between [supply] and [quantity supplied].

Necessary Basic Economic Concepts (General Economic Structure) Add to feedback

Historic Feedback Not available

GPT Feedback You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

Reasoning: everything on the same page would have worked if the users follow a sequential pattern.

But in fact, they go back and forth between the essay, and the table, which requires a lot of scrolling.

Design Feature based on users' mental models

5. Show first draft when grading revised draft

Design Feature: Enable users to access the changes from first to the revised draft.

Student, Unnamed (Writing Assignment 2 final draft -- [rubrics](#) and [commenting box](#)) 0 / 1 Graded

Highlight & Comment Hide First Draft First Draft Table Essay Table Preview Expand All Sort by: Rubric Order

First Draft Show Changes

To the Governor of California,

After the rise in popularity of almond milk, we have also seen a growing demand for alternatives rise in alternative milk substitutes like oat milk and soy milk. Alternative milk substitutes have started taking market share from almond milk, reflecting shifting consumer preferences (Fonseca, 2024). Because so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and these alternatives water. Almond milk and alternative milks are substitutes, an increase substitutes in one product's consumption, so when the price or perceived desirability leads to greater one substitutes increases, the demand for the other, either increases. Before any policy intervention, these changing tastes have boosted the government gets involved with the market, the demand for alternative milks and reduced almond milk would increase because of consumer preferences, the demand for almond milk. Water usage is also relevant: alternative milk would decrease because it's a substitute in consumption to almond farming traditionally uses large amounts of water, while oat milk and soy

Assignment (499 words)

To the Governor of California,

After the rise in popularity of almond milk, we have also seen a growing demand for alternatives like oat and soy milk, reflecting shifting consumer preferences (Fonseca, 2024). Because almond milk and these alternatives are substitutes, an increase in one product's price or perceived desirability leads to greater demand for the other. Before any policy intervention, these changing tastes have boosted the demand for alternative milks and reduced demand for almond milk. Water usage is also relevant: almond farming traditionally uses large amounts of water, while oat and soy farming generally requires less, though the overall impact on water demand depends on the magnitude of almond's decline versus the expansion of alternatives.

As the newly elected governor, you may wish to support almond farmers by implementing a binding price floor in the almond milk market. Setting a minimum price above the equilibrium raises the price of almond milk, lowers its quantity demanded, and increases quantity supplied, causing a surplus. The government must purchase this

Know the difference between [demand] and [quantity demanded].
Necessary Basic Economic Concepts

First Draft (Missed ✗)
Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

Know the difference between [supply] and [quantity supplied].
Necessary Basic Economic Concepts

First Draft (Met ✓)
You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply. You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

Historic Feedback Add to feedback **GPT Feedback** Add to feedback
Make sure you understand the difference between Remember that changes in supply and changes in

Changes based on users' mental models

Most important to look for during think-aloud, this suggests big changes to the design.

Examples: the way they grade/provide feedback

1. They go back and forth between the essay and the rubric table
2. They check against the rubric list and expect the rubrics to be in a fixed order.
3. The process of providing feedback is broken down into making judgment on whether a rubric is satisfied, and what feedback message could help students to improve on this dimension
4. People don't find the paragraph starters to be helpful. The feedback is explanatory of the location.
5. People need extra information when providing feedback to a revised draft.

Changes based on users' mental models

Most important to look for during think-aloud, this suggests big changes to the design.

Things to ask yourself and reflect on your previous need-finding studies and think-aloud studies

1. How will your users complete this task naturally?
2. Is the flow designed in your app aligned with their mental model? If there are multiple paths, do you support that?
3. Is the information you are providing useful/critical to them?
4. What information do they need when they complete the task and is that provided to them?

Changes we've made during the iterations (through user testing, think aloud, prototyping)

- Changes of UI elements (lower-level usability issues)
 - Fitts' Law, Gulf of execution/evaluation, usability, efficiency, discoverability, learnability
 - Nielsen's heuristic rules
- Changes based on users' mental models
 - The users don't do the tasks in a similar way as we anticipated
- **Changes/Design Features for responsible use of AI**
- Changes based on technical feasibilities, e.g., databases.

Changes for responsible use of AI

1. Textbox under each rubric to be empty

Original: the comment box under each rubric is pre-populated with AI feedback.

Sample_222_fakefinal_draft.docx

Home Generate AI comments Highlight & Comment Font Size Mark assignment as complete ✓

Scroll down for peer review feedback

Assignment

To: Governor of California
From: Economic Advisor
Subject: Evaluating the Economic Effects of a Tax on Agricultural Water Consumption

The rising popularity of alternative milk substitutes, such as oat and soy milk, has significantly reduced demand for almond milk. As consumers shift their preferences, the quantity demanded for almond milk decreases, leading to financial distress for almond farmers in California. Simultaneously, reduced almond production has led to a decrease in agricultural water usage, a positive outcome in a state frequently experiencing drought conditions. Given the environmental concerns surrounding water consumption in almond farming, implementing a tax on agricultural water usage is a viable policy to address both economic and environmental issues.

A tax on agricultural water consumption would directly impact the almond milk market by increasing the cost of production for almond farmers. Since almonds require substantial water inputs, the additional tax would make almond farming more expensive, leading to a decrease in supply. As a result, the equilibrium price of almond milk would rise, making it less competitive compared to alternative milk substitutes. Consumers may respond by purchasing more oat and soy milk, further decreasing demand for almond milk and exacerbating the financial struggles of almond farmers. However, the tax would also create an incentive for farmers to adopt more water-efficient farming practices, ultimately promoting sustainable resource use. Additionally, the tax burden may be shared by consumers in the form of higher almond milk prices, as well as by agricultural suppliers who may experience reduced demand for their products.

The market for alternative milk substitutes would also be affected by the tax on agricultural water consumption. As the price of almond milk increases, consumers will continue shifting towards oat and soy milk, increasing demand in the alternative milk market. Producers of these substitutes may respond by expanding production, potentially benefiting from economies of scale and lowering their costs. The increased availability of alternative milk substitutes would further reduce almond milk's market share, accelerating the trend away from almond-based dairy alternatives. Additionally, the degree to which consumers switch between almond milk and other alternatives depends on the cross-price elasticity of

Feedback

Flip Judgment Reposition

Rubric Group: Initial Market Change Analysis (Market Analysis)

✖ | Rubric Item: Mentions that before the policy, change in preferences causes [demand] for oat and soy (alternative) milk to increase, and mention that the price increases in the oat and soy (alternative) milk market due to preference change. [Edit](#)

GPT Feedback: I would have liked to see you mention that the change in preferences not only increases demand for oat and soy milk but also leads to a price increase in that market.

Pre-designed Feedback: No predesigned feedback available.

[Remove GPT Feedback](#) [Remove Predesigned Feedback](#) [Revert to Original Feedback](#) [Get Alternative Feedback](#)

Flip Judgment Reposition

Rubric Group: Initial Market Change Analysis (Market Analysis)

✖ | Rubric Item: Mentions that before the policy, change in Preferences also causes [demand] for Almond Milk to decrease, and mention that the price decreases in the almond milk market due to preference change. [Edit](#)

Changes for responsible use of AI

1. Textbox under each rubric to be empty

Updated: the comment box is empty by default. Users need to decide whether to add AI or historic feedback to the comment box.

The screenshot shows a writing assignment interface with the following elements:

- Header:** Student, Unnamed (Writing Assignment 2 first draft -- [rubs](#) and [commenting brw](#))
- Feedback Section:** Titled "Feedback".
- Assignment Summary:** Assignment (531 words).
- Text Content:** A paragraph about almond milk substitutes and its impact on the market.
- Feedback Rubric:** A table with columns for "Historic Feedback" and "GPT Feedback".
- Historic Feedback:** "Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market."
- GPT Feedback:** "Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis."
- Empty Textbox:** "Add some feedback here..."
- Footnote:** A detailed note explaining the effect of a price floor on the almond milk market.

Design Features for responsible use of AI

2. Highlight as explanations

Design Feature: Use the highlight in the essay as a way to explain how the AI makes the judgement and generates the feedback.

The screenshot shows a writing assignment interface with the following details:

- Student, Unnamed** (Writing Assignment 2 first draft [rubrics](#))
- 0/1 Graded**
- Assignment** (531 words)
- Feedback** section:

 - Question:** Know the difference bewteen [demand] and [quantity demanded].
 - Necessary Basic Economic Concepts (General Economic Structure):** Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.
 - Historic Feedback:** Add to feedback
 - GPT Feedback:** Add to feedback
 - Answer:** Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

- Question:** Know the difference between [supply] and [quantity supplied].
- Necessary Basic Economic Concepts (General Economic Structure):** You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.
- Historic Feedback:** Not available
- GPT Feedback:** Add to feedback

Essay Content:

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

Highlighted Text:

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Design Features for responsible use of AI

3. Design Feature: Give users the flexibility to edit the feedback in anyway they want.

Student, Unnamed (Writing Assignment 3 first draft -- [rubrics](#) and [commenting box](#)) 1/10 Graded

Highlight & Comment 1/10 Graded

To understand market failure, you must understand what it means when the price is defined as the price and quantity where the total surplus in society is maximized without outside intervention like the government, the market fails to reach efficient equilibrium). The four market failures are externalities, common resources, public goods. Common resources are non-excludable, but rival in consumption. Non-rival goods prevent consumers who don't pay for the good from using it. **Rival in consumption can't simultaneously consume the same unit of the good.** Common resources because there is nothing in place (no payoff) to prevent consumers from over-consuming it, which depletes the amount left for everyone else. So market quantity is greater than Whelan's article *Disney Raises Prices of Most Streaming Plans* discusses Disney artificially scarce goods and examples of market failure. Artificially scarce goods but non-rival in consumption. Excludable means the supplier of the good can prevent others from consuming it. These streaming services are excludable because of the platform access and consuming the content unless they pay the subscription fees, which make this good excludable, are increasing across Disney+, Hulu, and ESPN+ (Whelan, 2024). The services are also non-rivals in that one unit of goods can be consumed by more than one person at the same time because multiple users of the streaming service can watch the same content simultaneously.

Artificially scarce goods are a market failure because there is no marginal cost additional customer to consume the goods. Thus, the efficient outcome is to a good, which typically means the price is zero. So, without intervention, the market price would be lower than the efficient quantity. If Disney wanted to maximize revenue, they could remove the subscription from their streaming services, allowing anyone to access them. This would encourage people to turn their streaming services into public goods because, without a subscription fee, they would no longer be excludable.

This option is unrealistic unless Disney has an alternative revenue stream because they wouldn't make money. One solution is to get rid of the subscription fee and introduce ads on the platform which would serve as the

Preview Expand All Sort by: Rubric Order

Define and discuss FREE RIDERS as its nonexcludable Market Failure Comparison to

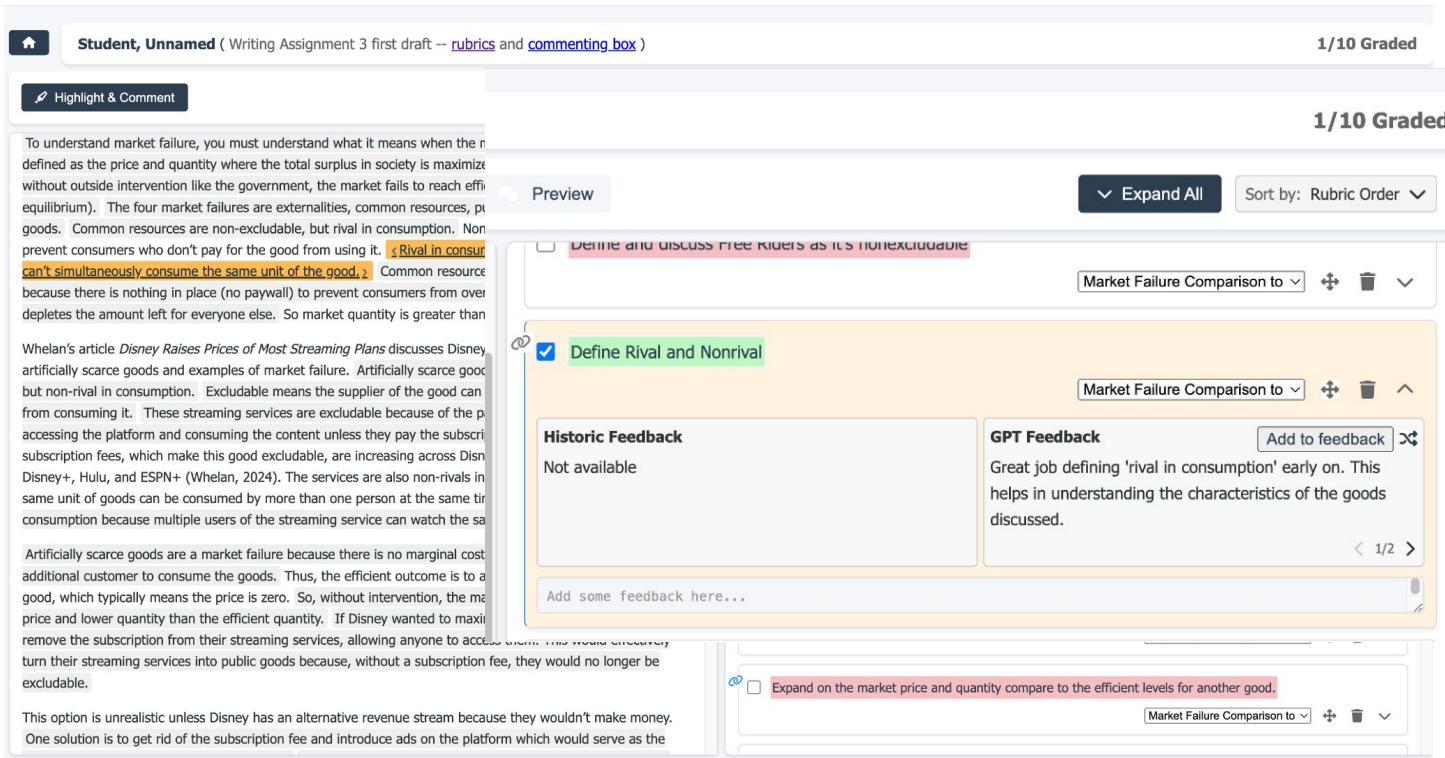
Define Rival and Nonrival Market Failure Comparison to

Historic Feedback
Not available

GPT Feedback Add to feedback
Great job defining 'rival in consumption' early on. This helps in understanding the characteristics of the goods discussed.

Add some feedback here...

Expand on the market price and quantity compare to the efficient levels for another good. Market Failure Comparison to



Rubric is met, and there's a positive feedback.

Design Features for responsible use of AI

3. Design Feature: Give users the flexibility to edit the feedback in anyway they want.

The screenshot shows a digital assignment interface for a student named "Student, Unnamed". The assignment is titled "Writing Assignment 3 first" and is marked as "1/10 Graded". The interface includes a toolbar with "Highlight & Comment" and "Double-click to edit" buttons. A preview section shows a list of tasks:

- Define and discuss Free Riders as its nonexcludable**: Contains a note from the student: "To understand market failure, you must understand what it means defined as the price and quantity where the total surplus in society without outside intervention like the government, the market fails equilibrium). The four market failures are externalities, common goods. Common resources are non-excludable, but rival in consumption prevent consumers who don't pay for the good from using it. ~~if can't simultaneously consume the same unit of the good.~~ Con" and a note from GPT: "Market Failure Comparison to" with comparison icons.
- Define Rival and Nonrival**: Contains a note from the student: "Whelan's article Disney Raises Prices of Most Streaming Plans is artificially scarce goods and examples of market failure. Artificial but non-rival in consumption. Excludable means the supplier of from consuming it. These streaming services are excludable because accessing the platform and consuming the content unless they pay subscription fees, which make this good excludable, are increasing Disney+, Hulu, and ESPN+ (Whelan, 2024). The services are also same unit of goods can be consumed by more than one person at consumption because multiple users of the streaming service can" and a note from GPT: "Market Failure Comparison to" with comparison icons. The GPT feedback suggests defining rivalry before discussing the article.
- Expand on the market price and quantity compare to the efficient levels for another good.**: Contains a note from the student: "Artificially scarce goods are a market failure because there is no additional customer to consume the goods. Thus, the efficient output is good, which typically means the price is zero. So, without intervention, the price is lower than the efficient quantity. If Disney were to remove the subscription from their streaming services, allowing anyone to access them. This would effectively turn their streaming services into public goods because, without a subscription fee, they would no longer be excludable." and a note from GPT: "Market Failure Comparison to" with comparison icons.

At the bottom, there is a note from the student: "This option is unrealistic unless Disney has an alternative revenue stream because they wouldn't make money. One solution is to get rid of the subscription fee and introduce ads on the platform which would serve as the" and a note from GPT: "Market Failure Comparison to" with comparison icons.

Flip the judgement, and then there's a constructive feedback

Design Features for responsible use of AI

3. Design Feature: Give users the flexibility to edit the feedback in anyway they want.

The screenshot shows a user interface for editing feedback. At the top left is a checkbox labeled "Define Rival and Nonrival". Below it are two feedback panels: "Historic Feedback" and "GPT Feedback". The "Historic Feedback" panel contains the text: "In discussion of market failures, it would be good to define the 'rival vs. nonrival' and 'excludable vs. nonexcludable'". The "GPT Feedback" panel contains the text: "You should define rivalry before discussing the article. This would help clarify why Disney's streaming services are considered non-rival in consumption." Below these panels is a summary box containing the text: "It would be good to define the 'rival vs. nonrival' and 'excludable vs. nonexcludable'. This would help clarify why Disney's streaming services are considered non-rival in consumption." There is a "2/2" indicator at the bottom right of this box.

The screenshot shows a user interface for editing feedback. At the top left is a checkbox labeled "Define Rival and Nonrival". Below it are two feedback panels: "Historic Feedback" and "GPT Feedback". The "Historic Feedback" panel contains the text: "In discussion of market failures, it would be good to define the 'rival vs. nonrival' and 'excludable vs. nonexcludable'". The "GPT Feedback" panel contains the text: "You should define rivalry before discussing the article. This would help clarify why Disney's streaming services are considered non-rival in consumption." Below these panels is a summary box containing the text: "Define rival and non-rival." There is a "2/2" indicator at the bottom right of this box.

Users can use the AI feedback (combine them) or write from scratch

Consider responsible use of AI

1. Give users sufficient space to make decisions on whether or not to use AI
2. Try to make it easier for people to make sense of AI outcomes (e.g., AI suggestions)
3. Give users flexibility to correct AI mistakes, modify AI results, or not use AI at all

Changes we've made during the iterations (through user testing, think aloud, prototyping)

- Changes of UI elements (lower-level usability issues)
 - Fitts' Law, Gulf of execution/evaluation, usability, efficiency, discoverability, learnability
 - Nielsen's heuristic rules
- Changes based on users' mental models
 - The users don't do the tasks in a similar way as we anticipated
- Changes for responsible use of AI
- **Changes based on technical feasibilities, e.g., databases.**

Changes based on technical feasibilities, e.g., databases.

Syncing data and warning on different views

Student, Unnamed (Writing Assignment 2 first draft -- [rubrics](#) and [commenting box](#)) 0/1 Graded

Highlight & Comment Essay Table Preview ^ Collapse All Sort by: Rubric Order

Assignment (531 words)

To Governor of California,

After the rise in popularity of almond milk, we have seen a rise in alternative milk substitutes like oak and soy milk. Alternative milk substitutes have started taking market share from almond milk, so the increase in popularity of alternative milk substitutes affects the markets for alternative milk substitutes, almond milk and water. Almond milk and alternative milks are substitutes in consumption, so when the price of one substitutes increases, the demand for the other increases. Before the government gets involved with the market, the demand for almond milk would increase because of consumer preferences, the demand for alternative milk would decrease because it's a substitute in consumption to almond milk and the demand for water would increase because water is an input for almond milk.

As the newly elected governor of California, you should support the almond farmers and their families and consider passing a law to institute a binding price floor in the almond milk market to support farmers. A price floor sets a minimum limit on the price in the almond milk market, but at this price, there will be a surplus of almond milk. This will result in you purchasing the resulting surplus of almond milk.

A price floor would impact the almond milk market because if the price is set above the equilibrium, prices would increase and the quantity demanded would decrease. Quantity supplied would also increase because prices increase. If the quantity supplied outweighs the quantity demanded, then we will have a surplus of almond milk and the

Feedback

Know the difference between [demand] and [quantity demanded].

Necessary Basic Economic Concepts (General Economic Structure) Add to feedback

Historic Feedback Add to feedback Make sure you understand the difference between demand and quantity demanded when discussing adjustments in the market.

GPT Feedback Add to feedback Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.

Add some feedback here...

Know the difference between [supply] and [quantity supplied].

Necessary Basic Economic Concepts (General Economic Structure) Add to feedback

Historic Feedback Not available

GPT Feedback Add to feedback You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.

View 1: the essay and the AI feedback suggestions

Changes based on technical feasibilities, e.g., databases.

Syncing data and warning on different views

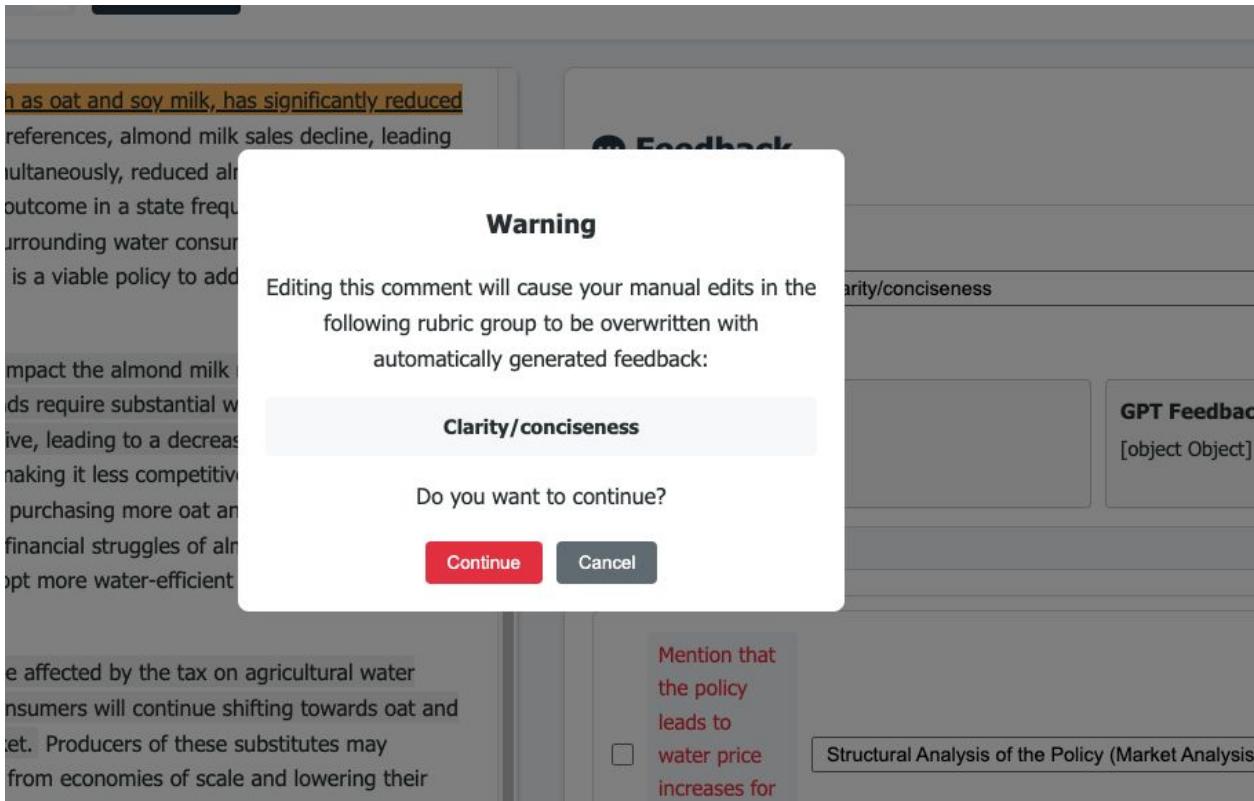
Rubric Group Table

Rubric Group	Rubric Item	Judgment	Comment (with Paragraph Starters)	Score
General	-	-	<p>Comment Starter: Good first attempt at this prompt! Here's where your paper stands on the rubric and what you should address to improve your memo for the final draft:</p> <p>Additional Overall Comments:</p> <ul style="list-style-type: none">(Add new feedback here if needed)	<button>Add All Paragraph Starters</button>
Necessary Basic Economic Concepts (General Economic Structure)	Know the difference bewteen [demand] and [quantity demanded].	False X	Consider reviewing the distinction between changes in demand and changes in quantity demanded to ensure clarity in your analysis.	
	Know the difference between [supply] and [quantity supplied].	True ✓	You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply. You've accurately used the term changes in quantity supplied. This precision helps in understanding the effects of price changes on supply.	<div style="display: flex; justify-content: space-around;">Exceeds ExpectationMeets ExpectationMissing Expectation</div> <p>Score: 0 /6</p>
	Should not mention that the market equilibrium is always efficient	True ✓		
	Know Supply and Demand represents producers (or sellers) and consumers (or buyers), respectively.	True ✓		
	Show understanding of the Law of Demand, that is, as the price of the good increases, the quantity demanded of the good decreases	True ✓		

View 2: the in-text feedback are automatically populated in the rubric table.

Changes based on technical feasibilities, e.g., databases.

Syncing data and warning on different views



If syncing isn't done well, e.g., people make changes to View 2 and then come back to make changes to the same element in View 1, could give users a warning that this may override their changes.

May not end up needing it because users don't tend to make changes back and forth.

Design considerations, and things to ask yourselves, things to look for in think-aloud sessions

- Usability of your UI (lower-level usability issues)
 - Fitts' Law, Gulf of execution/evaluation, usability, efficiency, discoverability, learnability, understandability
 - Nielsen's heuristic rules
- Users' mental models and flows to complete the task
 - Will user complete the task using the path/flow that I designed? If not, how would they naturally approach this task?
- If AI is involved, how to give users control to use or not use AI, how to make sure users understand where the AI outcome is coming from
- Technical feasibilities (not a huge concern for now)

Goals for today:

Review the design and development process of a user interface that uses AI to assist feedback provision.

Hope this will give you inspirations on your final project, both on design ideas, and also on usability issues to look for when you iteratively improve your product.



Xinyi Lu



Adi Mahesh



Zejia Shen