

Draw The The Kinked Demand Curve And Its Corresponding Marginal Revenue Curve And Carefully Explain The

Draw The The Kinked Demand Curve And Its Corresponding Marginal Revenue Curve And Carefully Explain The concept is fundamental in understanding how certain market structures, particularly oligopolies, behave. The kinked demand curve model helps explain price stability and competitive dynamics among firms that face a dualistic reaction to price changes. This article provides a comprehensive guide to drawing the kinked demand curve, deriving its corresponding marginal revenue (MR) curve, and carefully explaining the underlying economic principles.

Understanding the Kinked Demand Curve: An Introduction

What Is the Kinked Demand Curve?

The kinked demand curve is a theoretical model used primarily in oligopoly markets, where a few firms dominate the industry. It suggests that each firm faces a demand curve with a distinctive "kink" at the current market price. This kink reflects asymmetric consumer responses to price changes: competitors match price cuts but not price increases.

Why Is It Important?

This model helps explain why prices tend to be sticky or stable in oligopolistic markets. Firms are reluctant to change prices because:

- Price decreases will lead competitors to follow suit, eroding profits.
- Price increases will not be matched, leading to a loss of market share.

Understanding the kinked demand curve is crucial for analyzing pricing strategies, market stability, and the nature of competition among dominant firms.

Drawing the Kinked Demand Curve

Step-by-Step Process

To draw the kinked demand curve, follow these steps:

1. **Identify the current market price and quantity:** Begin with the prevailing market price (P_0) and the corresponding quantity (Q_0).
2. **Draw the demand curve segments:**
 - *Upper segment (D^U):* This represents the demand when prices are above P_0 . It is relatively elastic because consumers are sensitive to price increases.
 - *Lower segment (D^L):* This shows demand when prices are below P_0 . It is relatively inelastic because consumers are less responsive to price decreases.
3. **Connect the segments at the kink point:** The point where these two demand curves meet at P and Q_0 is the kink, representing the current equilibrium.
4. **Label the axes:** Price (P) on the vertical axis and Quantity (Q) on the horizontal axis.

Graphical Representation

When you plot the demand curve:

- Draw a relatively steep segment (DL) for prices below P_0 (less elastic).
- Draw a relatively flatter segment (DU) for prices above P_0 (more elastic).
- Mark the kink at the intersection point where these two segments meet at (Q_0, P_0) .

This visual representation captures the asymmetry of consumer responses to price changes, which is central to the model's implications.

Deriving the Corresponding Marginal Revenue (MR) Curve

From Demand to MR: The Connection

The marginal revenue curve illustrates the additional revenue generated from selling one more unit of output. In the case of the kinked demand curve:

- The MR curve is discontinuous and features a vertical gap at the quantity corresponding to the kink.
- This gap results from the differing elasticities of demand on either side of the kink.

Steps to Draw the MR Curve

To accurately derive the MR curve:

1. **Start with the demand segments:** Use the two demand curves (D^U and D^L) identified earlier.
2. **Calculate the MR for each segment:**
 - For the elastic upper segment (D^U), MR will be above the demand curve and decline faster.

- For the inelastic lower segment (D^L), MR declines more steeply and may become negative.

3. Draw the MR curve:

- Begin at the same point as the demand curve at the kink (Q_0, MR_0), where MR intersects the demand at the kink point.
- Extend the MR curve upward for prices above P_0 (elastic segment), showing a relatively flat or slightly declining line.
- Extend downward for prices below P_0 , with a sharp drop creating a discontinuity or vertical gap at Q_0 .

Key Characteristics of the MR Curve in the Kinked Demand Model

- The MR curve has a discontinuity at the quantity corresponding to the kink.
- The vertical gap reflects the differing elasticities of demand on either side.
- This gap indicates that small changes in marginal cost do not impact the profit-maximizing price or quantity, leading to price stability.

Explaining the Economic Implications of the Kinked Demand and MR Curves

Price Rigidity and Market Stability

The kinked demand and MR curves demonstrate that:

- Prices tend to remain stable despite shifts in marginal costs.
- Because the MR curve has a discontinuity, a firm's marginal cost changes may not influence the optimal price, leading to a price "stickiness."

Why Do Firms Keep Prices Stable?

Firms are reluctant to alter prices because:

- A price decrease below P_0 results in a relatively elastic demand, leading to lower revenue per unit.
- A price increase above P_0 is unlikely to be matched by competitors, causing a loss of market share.
- The discontinuity in the MR curve signifies that marginal costs can fluctuate within a certain range without prompting changes in price.

Limitations of the Model

While the kinked demand curve explains price stability, it has limitations:

- It assumes that firms believe competitors will match price cuts but not price increases, which may not always hold.
- It does not account for innovation, product differentiation, or other competitive strategies.
- The model is less effective in highly competitive or monopolistic markets.

Practical Applications and Real-World Examples

Industries Where the Kinked Demand Model Applies

- Automotive manufacturing
- Airline industries

- Telecommunications
- Oil and gas sectors

In these industries, prices tend to be stable over time, reflecting the principles of the kinked demand curve.

Analyzing Market Behavior

Economists and business strategists use this model to:

- Predict how firms might react to cost changes.
- Understand why prices in certain oligopolies remain stable.
- Develop strategies that leverage price stickiness for competitive advantage.

Conclusion

Drawing the kinked demand curve and its corresponding marginal revenue curve provides valuable insights into the pricing behavior of firms operating in oligopoly markets. The model reveals how asymmetric consumer responses lead to price stability, with the MR curve's discontinuity emphasizing the resistance to change in prices despite cost fluctuations. By understanding these curves, businesses and economists can better analyze market dynamics, predict competitive responses, and formulate effective pricing strategies.

In summary:

- The demand curve has a "kink" at the current market price, reflecting different elasticities above and below that point.
- The MR curve derived from this demand exhibits a discontinuity at the quantity corresponding to the kink.
- These features explain why prices tend to be sticky in oligopolistic markets, facilitating market stability and strategic decision-making.

By mastering the process of drawing these curves and understanding their implications, policymakers,

business leaders, and students can gain a deeper understanding of oligopoly behavior and market equilibrium.

Frequently Asked Questions

What is the kinked demand curve in economics?

The kinked demand curve is a model that explains price stability in an oligopoly market, where firms face a demand curve with a distinct 'kink' at the current price, indicating different elasticities of demand for price increases and decreases.

How is the kinked demand curve graphically represented?

It is represented as a demand curve that has a bend or kink at the prevailing market price, with a relatively elastic segment above the kink and a relatively inelastic segment below it, creating a 'zig-zag' shape in graphical form.

What is the relationship between the kinked demand curve and the marginal revenue (MR) curve?

The MR curve corresponding to the kinked demand curve has a discontinuity or gap at the quantity corresponding to the kink, reflecting the change in elasticity; it is typically kinked or discontinuous, mirroring the shape of the demand curve.

Why does the marginal revenue curve have a discontinuity at the kink?

Because the demand curve has different elasticities above and below the kink, the MR curve exhibits a discontinuity at that point, leading to a flat or vertical segment in MR which indicates price rigidity.

How does the kinked demand curve explain price stability in oligopolies?

Since the MR curve has a discontinuity at the kink, firms find it unprofitable to change their prices slightly, as they expect demand to be highly elastic for price increases and less elastic for decreases, leading to stable prices.

What are the limitations of the kinked demand curve model?

Limitations include assumptions of asymmetric demand elasticity, the model's inability to explain price changes outside the kink region, and its reliance on static market conditions, making it less applicable in dynamic or changing markets.

Can the kinked demand curve model predict long-term price changes?

No, the model primarily explains short-term price stability but does not account for long-term factors such as technological changes or shifts in market demand that can lead to price adjustments.

How do firms determine their profit-maximizing output using the kinked demand and MR curves?

Firms analyze the marginal cost and compare it with the marginal revenue curve; profit maximization occurs where marginal cost equals marginal revenue, which often falls within the kinked region, reinforcing price stability.

What role does the kinked demand curve play in understanding collusive behavior among oligopolists?

The kinked demand curve supports the idea that firms are reluctant to change prices due to demand elasticity differences, thereby fostering informal collusion and price rigidity in oligopolistic markets.

Additional Resources

Draw The Kinked Demand Curve And Its Corresponding Marginal Revenue Curve And Carefully Explain The Concept

The kinked demand curve is a fundamental concept in microeconomics, particularly in the analysis of oligopolistic markets where a few firms dominate the industry. This model illustrates how firms might face a unique demand scenario that leads to price stability and strategic interdependence.

Understanding how to draw the kinked demand curve and its corresponding marginal revenue (MR) curve, along with a comprehensive explanation of the mechanics behind it, is essential for students and economists analyzing firm behaviors in such markets. This guide will walk you through the process step-by-step, providing clarity and insight into this intriguing economic phenomenon.

Introduction to the Kinked Demand Curve

The kinked demand curve model was introduced by economist Paul Sweezy in 1939. It describes a situation where a firm believes that if it raises its price, competitors will not follow suit, leading to a significant loss in market share. Conversely, if it lowers its price, competitors will match the price cut, resulting in a relatively small increase in the firm's sales but a decrease in profit margins. This asymmetric response creates a demand curve with a distinctive "kink," which in turn influences the firm's pricing and output decisions.

Visual Representation: Drawing the Kinked Demand Curve

Step 1: Establish the Axes

- Horizontal Axis (Quantity, Q): Represents the quantity of the product the firm sells.
- Vertical Axis (Price, P): Represents the price at which the product is sold.

Step 2: Draw the Demand Curve

- Identify the section before the kink: Draw a relatively flatter demand curve (D_1) that slopes downward, indicating elastic demand—meaning that a small decrease in price leads to a relatively large increase in quantity demanded.
- Identify the section after the kink: Draw a steeper demand curve (D_2) that also slopes downward but is less elastic—meaning that a small increase in price results in a relatively small decrease in quantity demanded.
- Mark the kink point: The intersection of D_1 and D_2 at a specific price and quantity (P_k and Q_k).

Step 3: Connect the Demand Curves at the Kink

- Draw a horizontal segment at the kink, connecting the two demand curves at P_k and Q_k . This horizontal segment reflects the idea that consumers perceive the demand as highly elastic above the kink (D_1) and inelastic below the kink (D_2).

Visual Summary:

- The demand curve consists of two segments meeting at the kink point:
- Elastic segment (D_1): Flatter, above the kink.
- Inelastic segment (D_2): Steeper, below the kink.
- The kink point acts as a pivot, leading to a distinctive shape.

Deriving the Corresponding Marginal Revenue (MR) Curve

Step 1: Understand the Relationship Between Demand and MR

- The marginal revenue curve is derived from the demand curve.
- For a linear demand curve, MR has the same intercept as the demand curve but is twice as steep.

Step 2: Draw the MR Curve Segments

- Above the kink:
 - The MR curve begins at a higher intercept and slopes downward, reflecting the elastic segment.
 - Because the demand is elastic, MR remains relatively high for each additional unit sold.
- Below the kink:
 - The MR curve continues downward but is steeper, reflecting the inelastic demand segment.
 - The slope of MR doubles that of the corresponding demand segment.

Step 3: Connect the MR Segments

- The MR curve will have a discontinuity (gap) at the point corresponding to the kink on the demand curve.
- This gap indicates a range of prices and quantities where the MR curve is undefined or discontinuous, representing the price rigidity characteristic of the kinked demand curve.

Summary of the Shape and Features

- The kinked demand curve has a distinctive "kink" at the equilibrium point where the firm perceives demand responses differently above and below the current price.
- The MR curve is discontinuous at the kink point, with a vertical gap or jump, illustrating the potential for price rigidity.
- The price and quantity at the kink are often considered the equilibrium point in this model, where firms are reluctant to change prices because of the asymmetric demand response.

Why the Kinked Demand Curve Leads to Price Stability

The Basic Intuition

- Price rigidity arises because:
- If a firm raises its price above P_k :
- Competitors will not follow, leading to a sharp drop in demand for the firm, as consumers switch to rivals.
- Demand becomes highly elastic, discouraging price increases.
- If a firm cuts its price below P_k :
- Competitors will match the price cut, leading to a small gain in market share but a significant reduction in profit margins.
- Demand becomes inelastic, discouraging price cuts.

The Role of MR Discontinuity

- The discontinuity in MR at the kink signifies that small changes in marginal cost may not affect the equilibrium price.
- As a result, prices tend to remain stable even when costs fluctuate within certain ranges, contributing to price stickiness observed in real-world oligopolies.

Step-by-Step Guide to Drawing the Kinked Demand and MR Curves

1. Draw the axes: Price (vertical) and Quantity (horizontal).
2. Plot the demand curve:
 - Draw a downward-sloping demand with an elastic upper segment.
 - Draw a steeper, inelastic lower segment.

- Mark the kink point where these segments meet.
- 3. Connect the demand segments at the kink: Use a horizontal line at the kink point.
- 4. Plot the MR curve:
 - Starting from the same intercept as the demand's elastic segment, draw a downward-sloping MR curve steeper than the demand curve.
 - Extend the MR curve downward until it reaches the same quantity as the demand curve at the kink.
 - At the kink point, introduce a discontinuity (a vertical gap) in MR, illustrating the jump.
- 5. Label all curves and points:
 - Demand segments (D_1 and D_2).
 - The kink point (P_k, Q_k).
 - The corresponding MR segments, noting the discontinuity.

Practical Implications of the Kinked Demand Model

Price Stability in Oligopolistic Markets

- Firms in oligopolies often prefer to maintain stable prices to avoid damaging price wars.
- The kinked demand curve explains why prices tend to be "sticky" or resistant to change unless there are significant shifts in costs or demand.

Limitations and Criticisms

- The model assumes firms believe competitors will match price cuts but not price increases, which may not always hold.
- It simplifies complex strategic behaviors and may not account for innovation, product differentiation, or other competitive strategies.
- Empirical evidence for the existence of the kinked demand curve is mixed, but it remains a useful conceptual tool.

Conclusion

Drawing the kinked demand curve and its corresponding marginal revenue curve provides valuable insights into price rigidity and strategic behavior in oligopolistic markets. By carefully plotting the demand with its characteristic kink and deriving the MR curve with its discontinuity, economists can better understand how firms make pricing decisions amidst strategic interdependence. While the model has its limitations, it remains a powerful framework for analyzing real-world market dynamics where firms are interdependent and price stability is prevalent.

Remember: The key to mastering this concept is visualizing the demand curve's shape, understanding the asymmetric responses above and below the kink, and recognizing how these influence the MR curve's shape and the firm's pricing stability. Practice drawing these curves, labeling the key points, and relating them to real-world market behaviors for a thorough grasp of the kinked demand model.

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