Seneca | SDDS

Business Analytics

Introduction to Data Visualization

BAN140 - Section NBB /NCC

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Week Topics

Previous Week

- Lessons in storytelling

Current Week

- Pulling it all together

pulling it all together

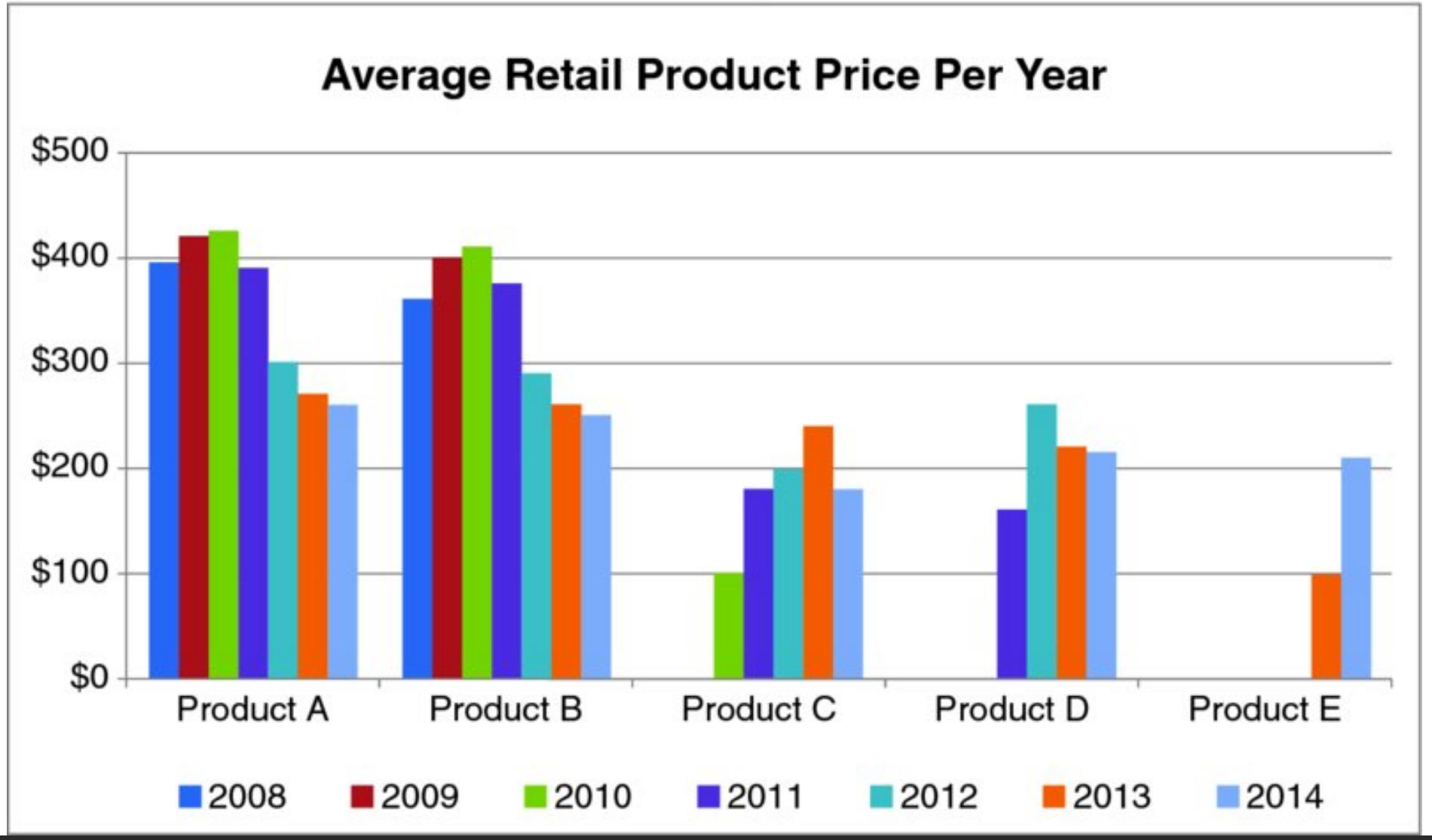
Chapter Seven: From Storytelling with Data: A Data Visualization Guide for Business Professionals, Wiley, 2017

Available online through Seneca Libraries: https://senecacollege-primo.hosted.exlibrisgroup.com/permalink/f/t3376v/01SENC_ALMA51463742800032 26

Pulling it all together

- What we learned so far:
  - Understand the context (Chapter 1)
  - Choose an appropriate display (Chapter 2)
  - Eliminate clutter (Chapter 3)
  - Draw attention where you want it (Chapter 4)
  - Think like a designer (Chapter 5)
  - Tell a story (Chapter 7)
- Now let’s apply it all to an example

Price has declined for all products on the market since the launch of Product C in 2010



Lesson 1: understand the context

- Identify a **specific audience** and what they need to know or do
  - ➔ Big Idea

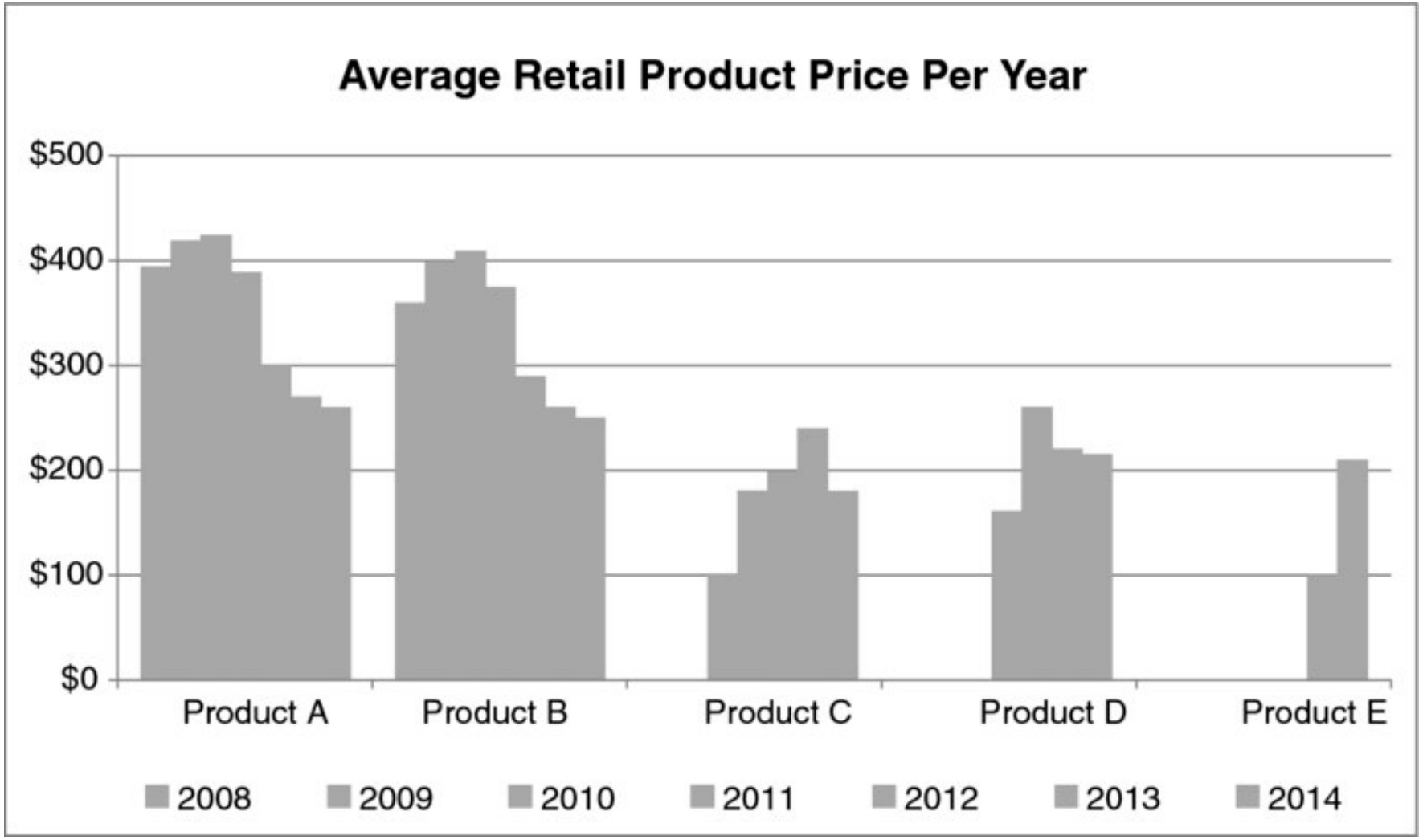
- **Who**: VP of Product, the primary decision maker in establishing our product's price.
- **What**: Understand how competitors' pricing has changed over time and recommend a price range.
- **How**: Show average retail price over time for Products A, B, C, D, and E.
- **Big Idea**: Based on analysis of pricing in the market over time, to be competitive, we recommend introducing our product at a retail price in the range $ABC–$XYZ.

Lesson 2: choose an appropriate display

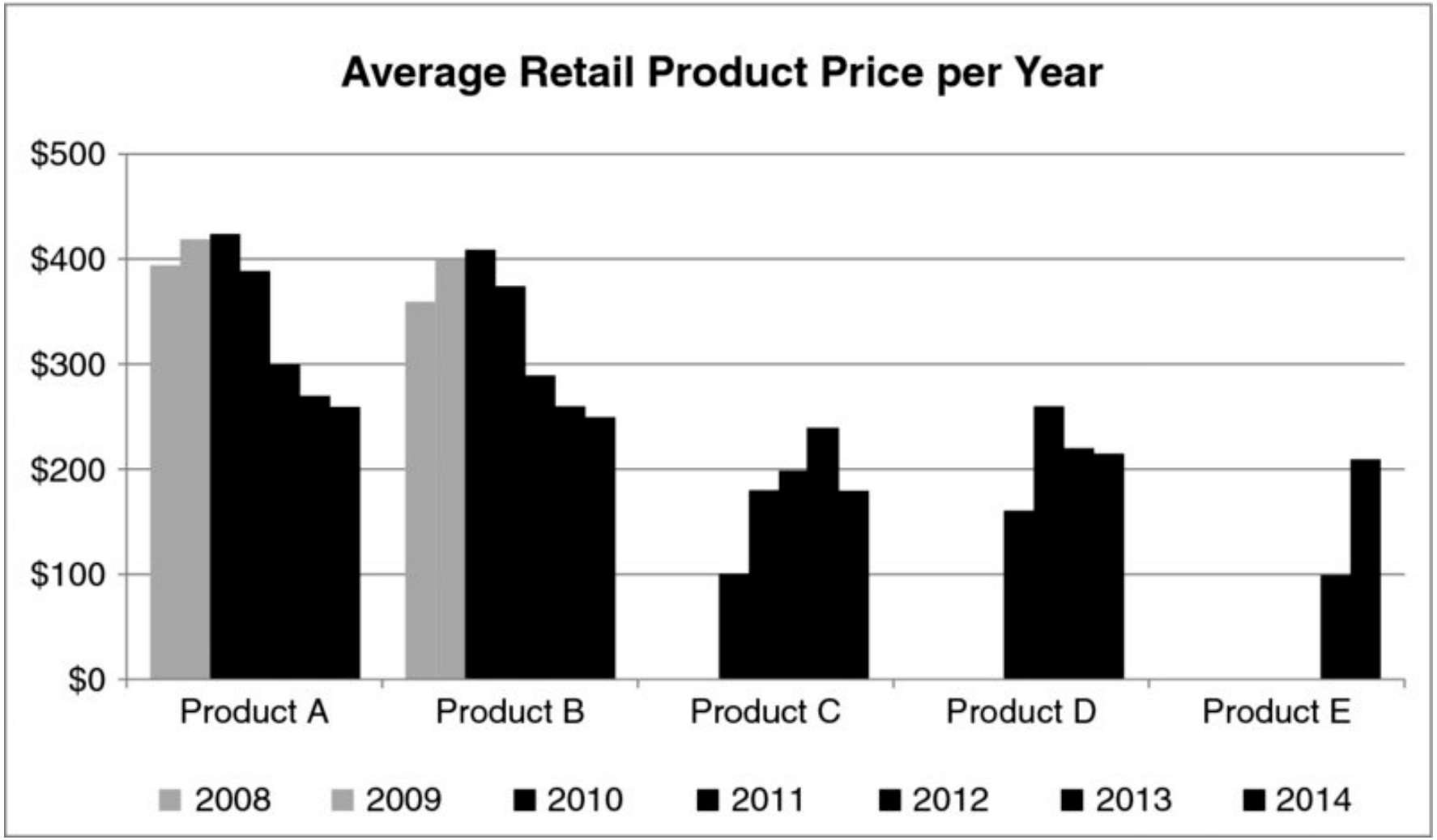
- Interested in the trend in price over time for each product.

- Distractions:
  - Variance in colors across bars
  - Not highlighted the important data
  - Not a good graph type for trend over time

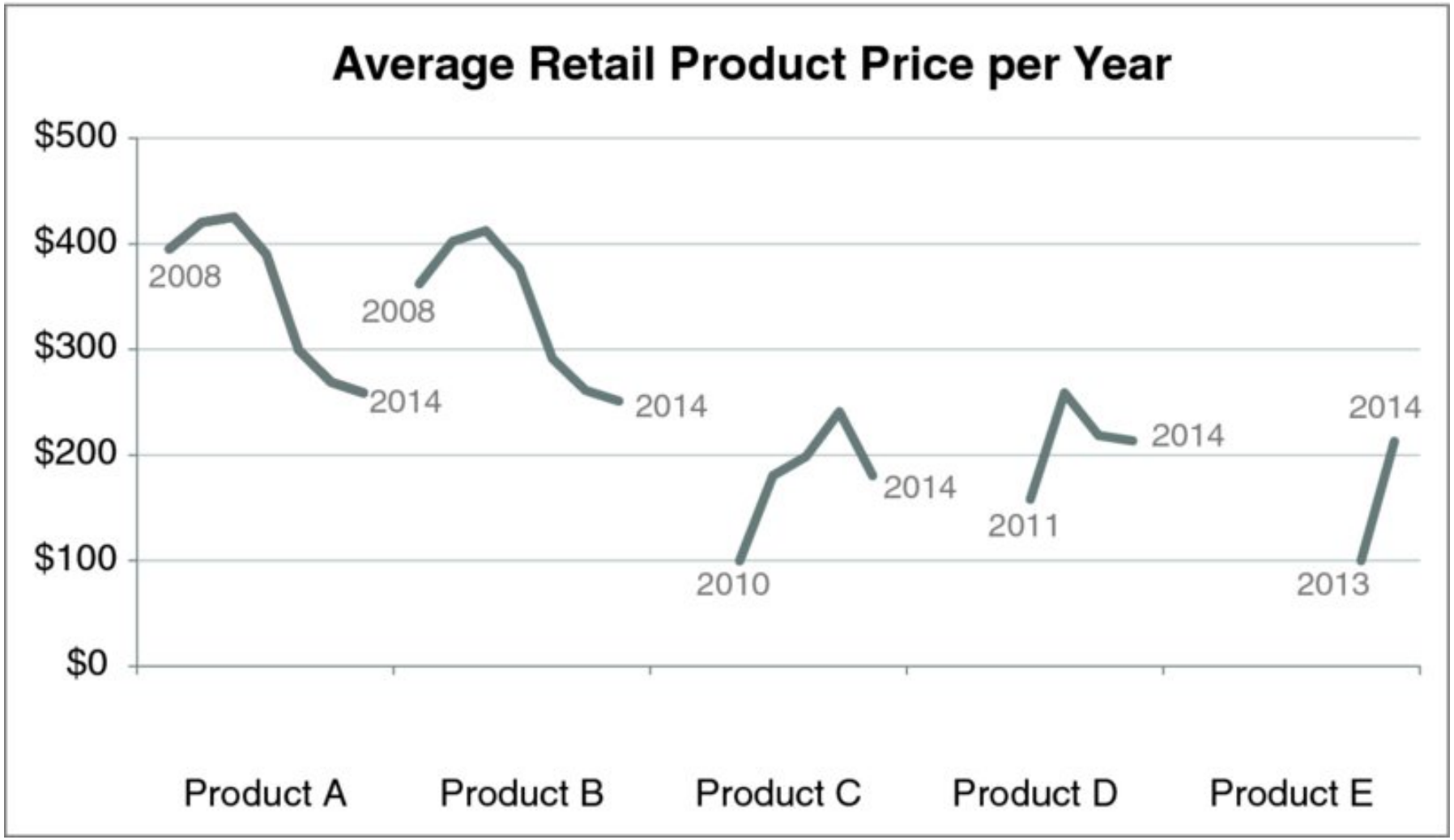
Remove the variance in color



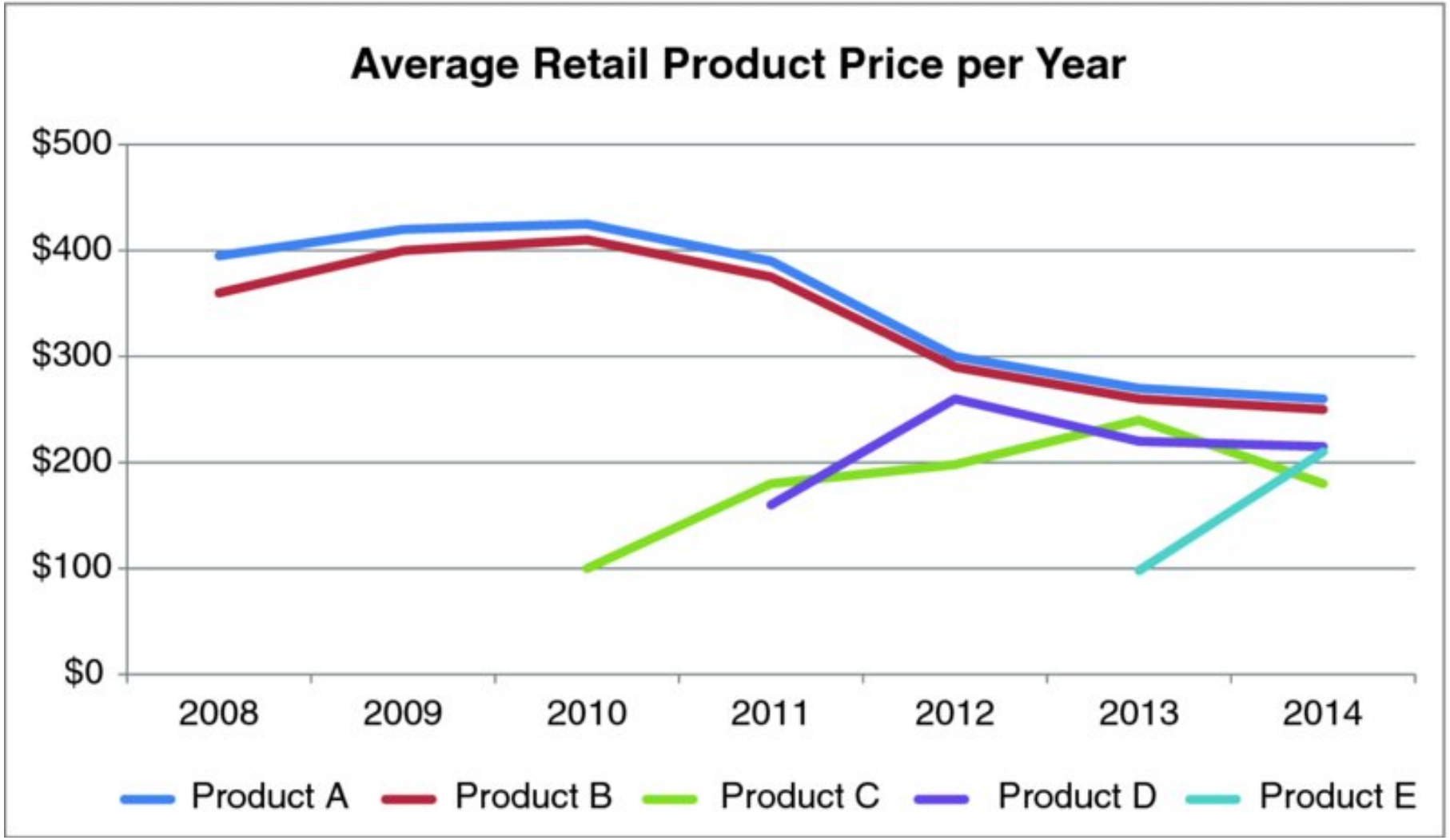
Emphasize 2010 forward



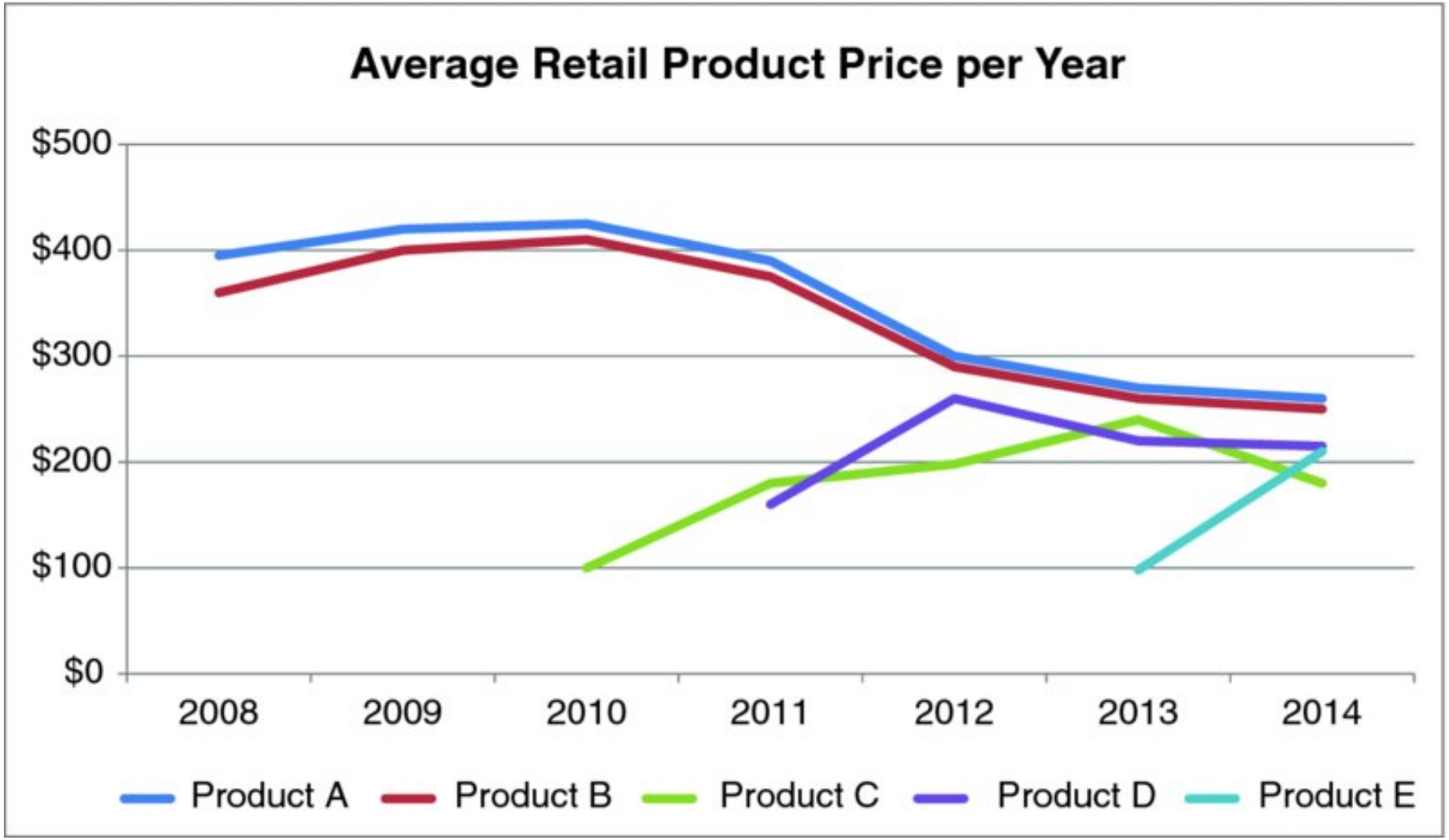
Change to line graph



Single line graph for all products

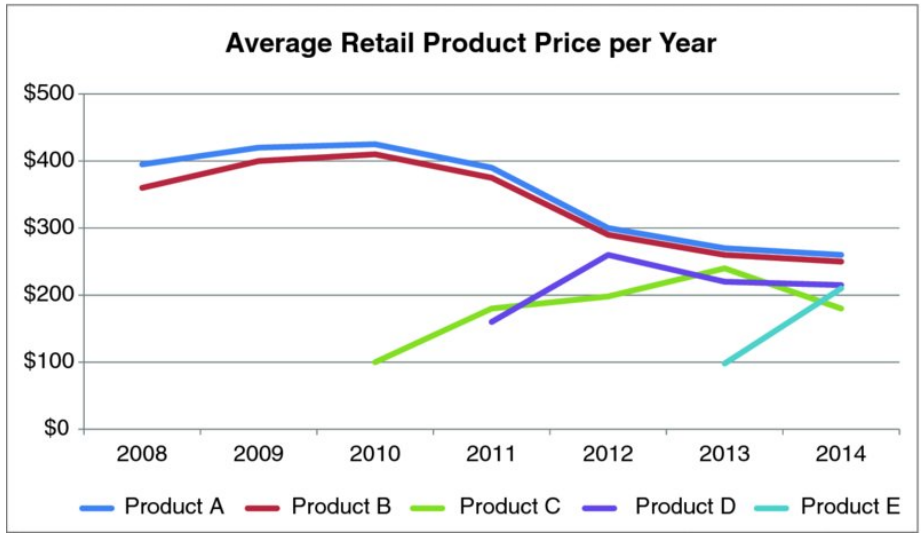


Lesson 3: eliminate clutter

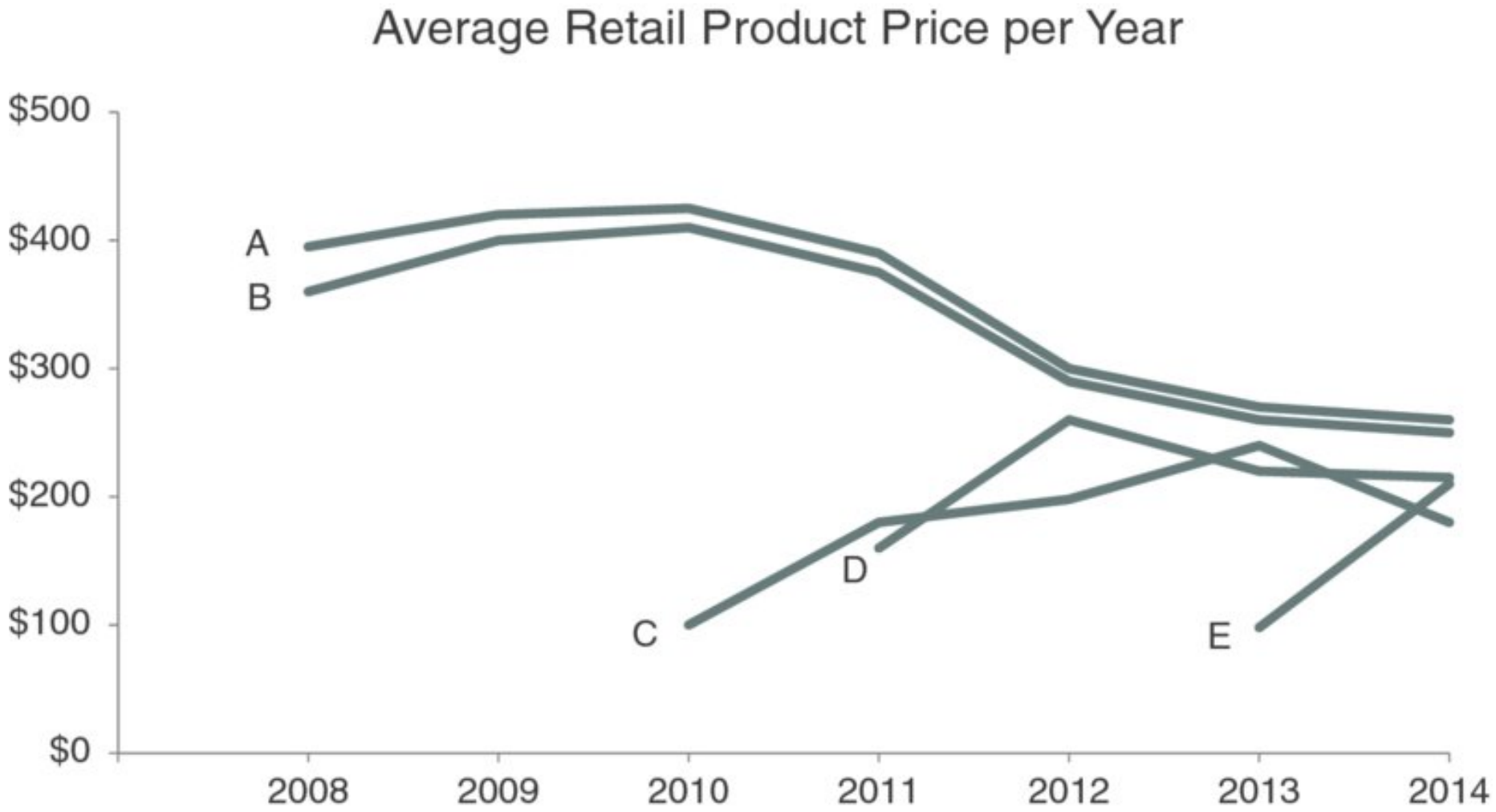


Lesson 3: eliminate clutter

- Starting from the last slide:
  - De-emphasize the chart title.
  - Remove chart border and gridlines.
  - De-emphasize the x- and y-axis lines ; alignment for x-axis tick marks.
  - Remove the variance in colors (then emphasize the story).
  - Label the lines directly.



Eliminate clutter



Lesson 4: draw attention where you want your audience to focus

- Initial headline:

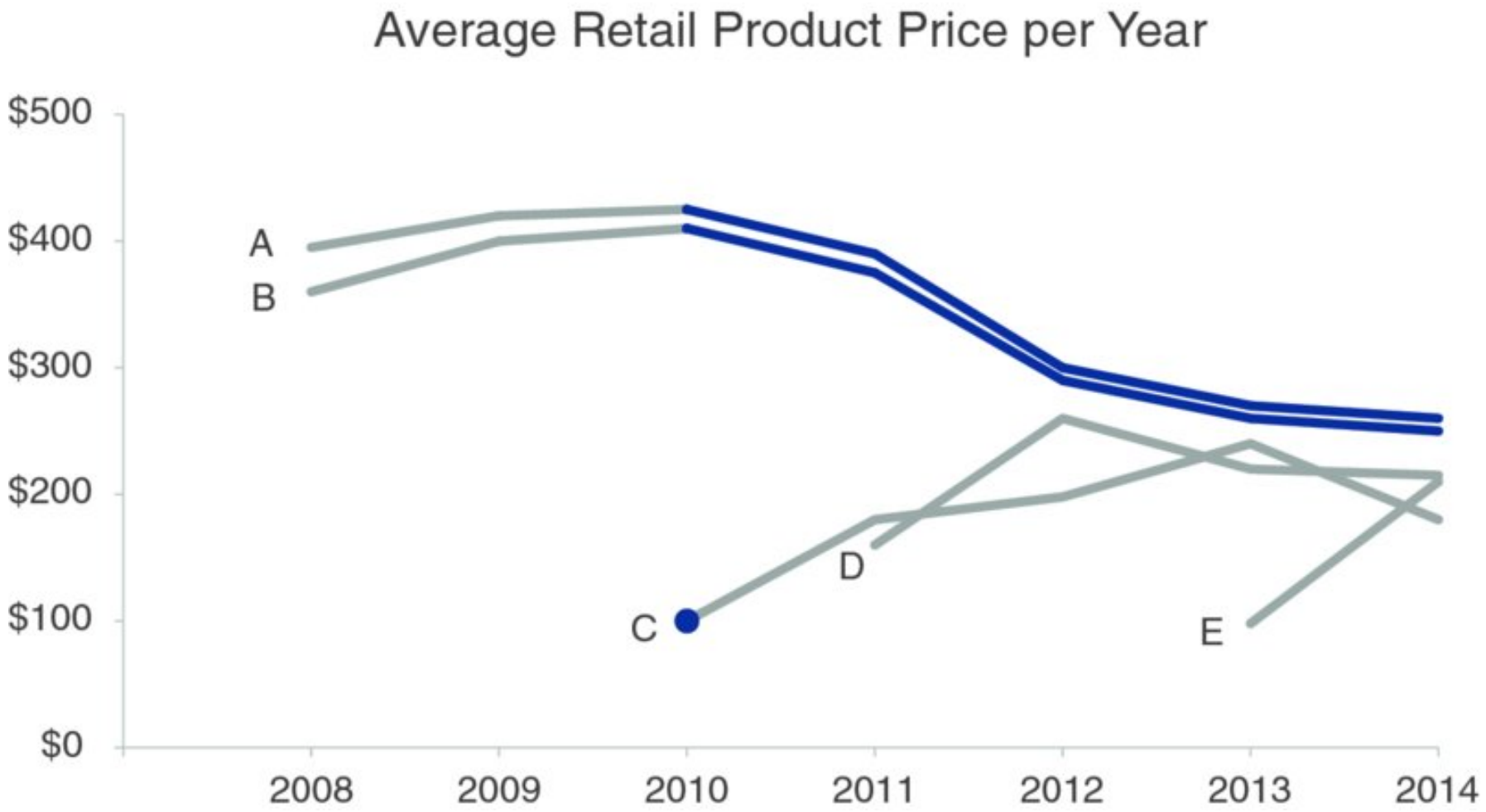
  "Price has declined for all products on the market since the launch of Product C in 2010."

- Modify it to:

  "After the launch of Product C in 2010, the average retail price of existing products declined."

Focus the audience's attention

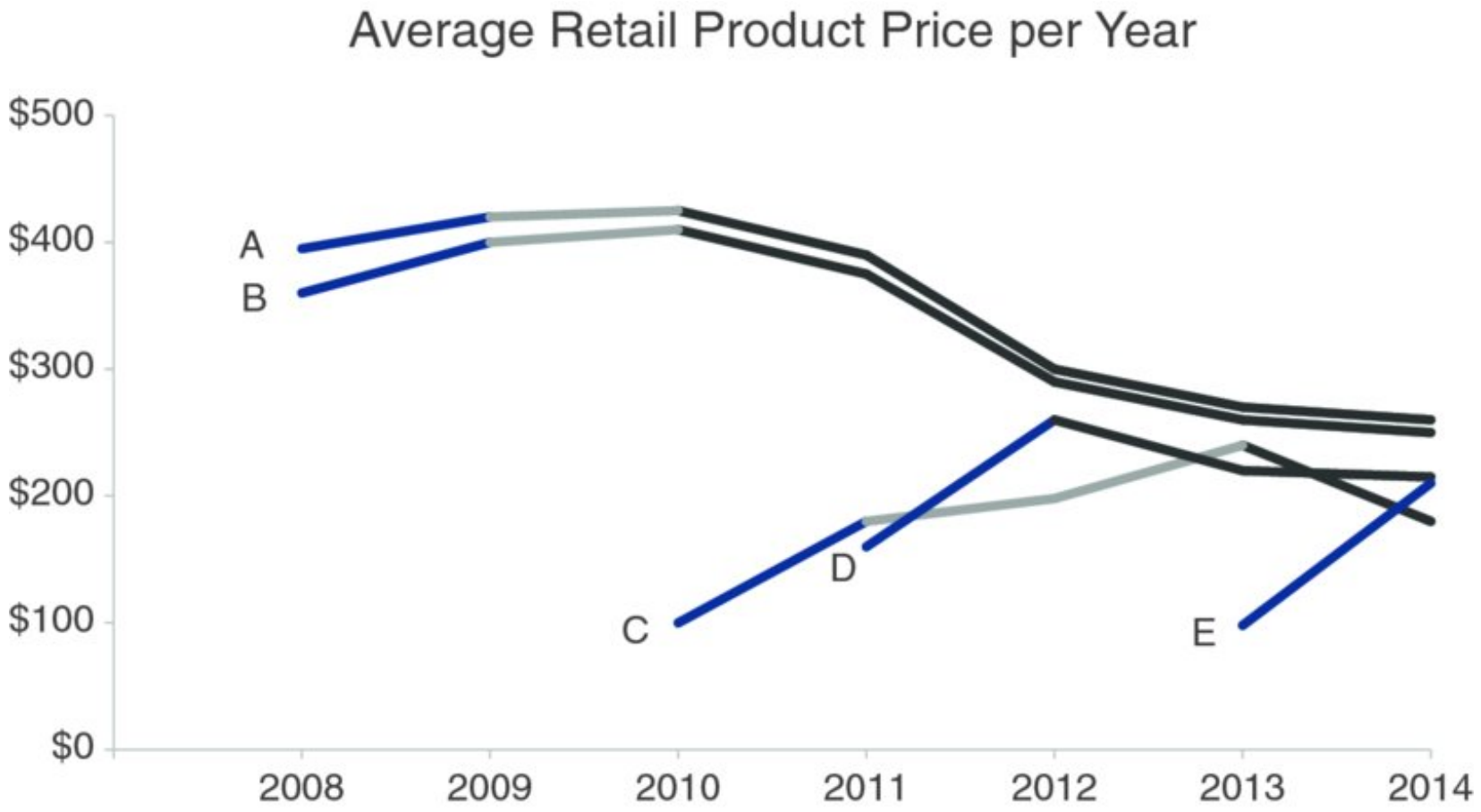
"After the launch of Product C in 2010, the average retail price of existing products declined."



Refocus the audience's attention

Another story:

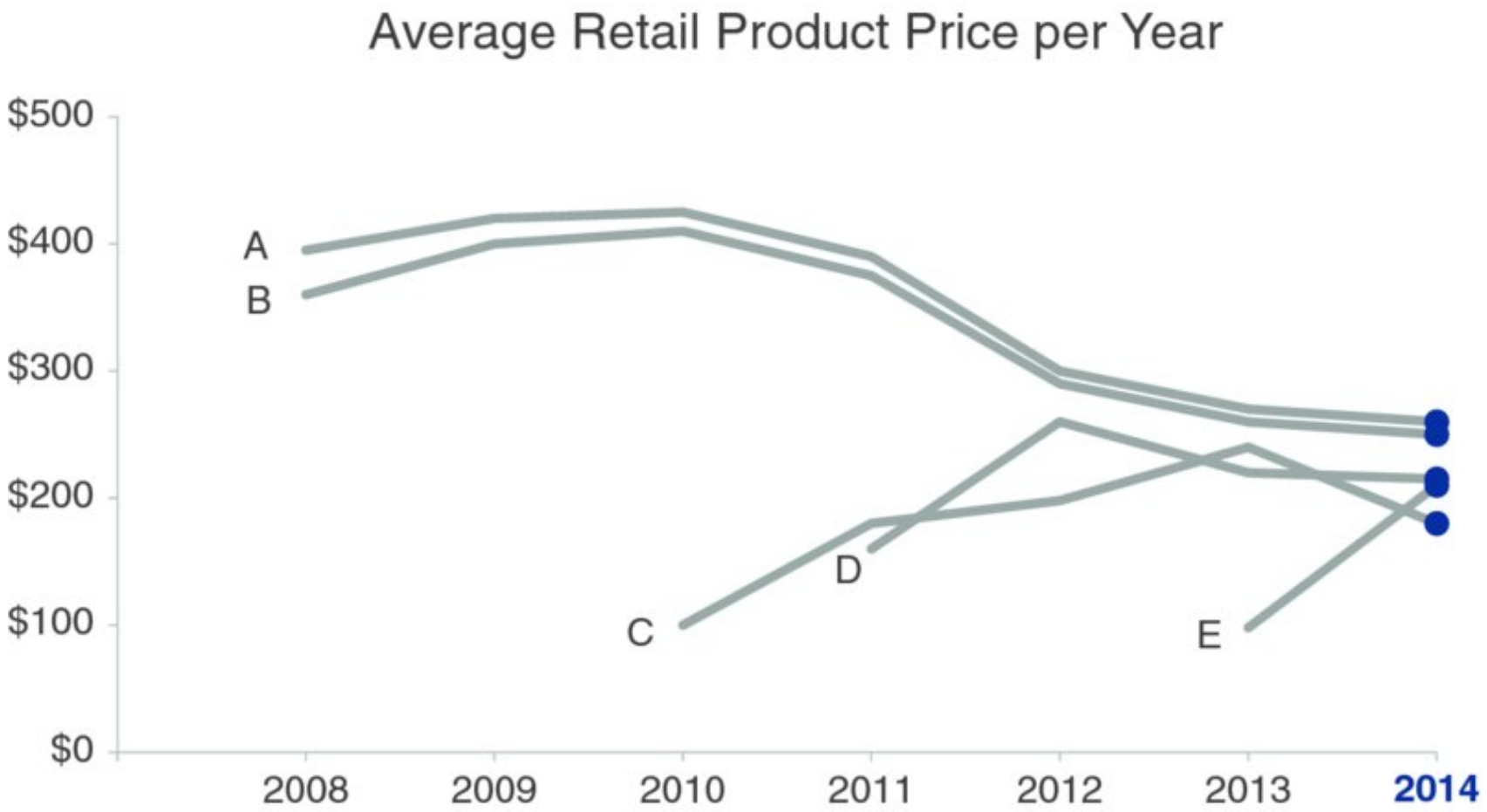
"With the launch of a new product in this space, it is typical to see an **initial average retail price increase**, followed by a **decline**."



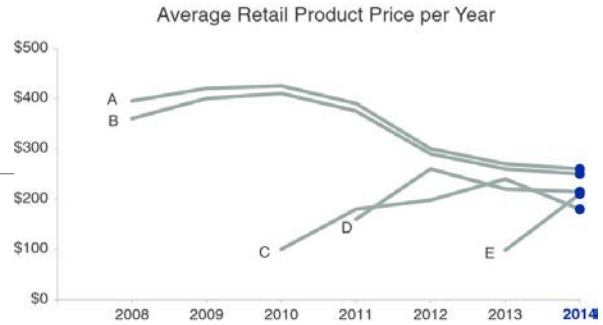
Refocus the audience's attention again

Another story:

"As of 2014, retail prices have converged across products, with an **average retail price of $223**, ranging from a low of $180 (Product C) to a high of $260 (Product A)."

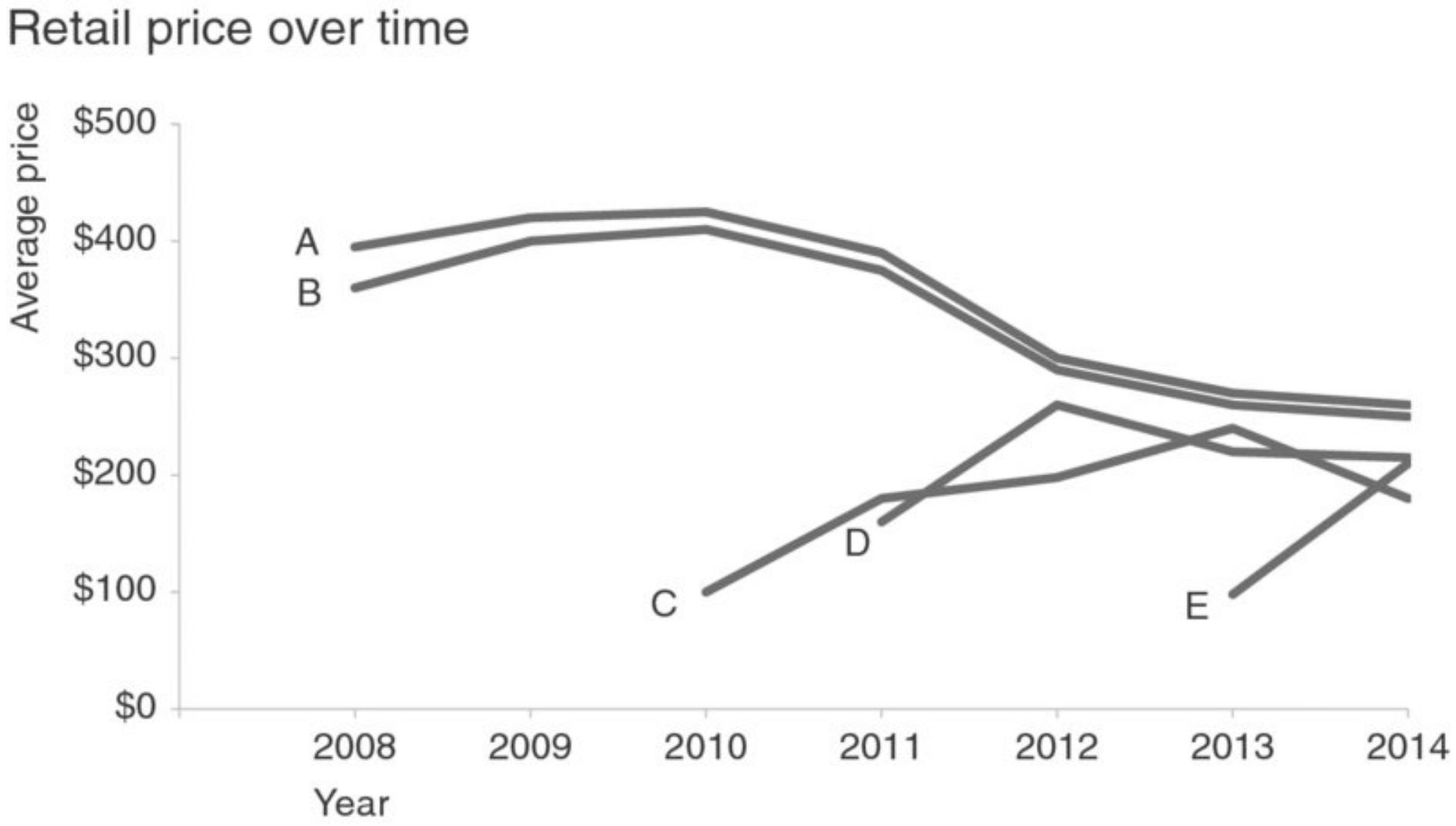


Lesson 5: think like a designer



- Already applied through this process.
  - Form follows function
    - Chose a visual display (form) that will allow our audience to do what we need them to do (function) with ease.
  - Visual affordances
    - Made it clear how our audience should interact with our visual. Cut clutter and de-emphasized some elements of the graph, while emphasizing and drawing attention to others.
- More to do with respect to accessibility and aesthetics:
  - **Make the visual accessible with text**.
    - Simpler text, capitalize only the first word, add axis titles
  - **Align elements to improve aesthetics.**
    - Upper-left-most align the graph title. Align the y-axis title vertically with the uppermost label and the x-axis title horizontally with the leftmost label.

Add text and align elements



Lesson 6: tell a story

- Imagine we have five minutes in a live presentation setting under the agenda topic:

  “Competitive Landscape—Pricing.”

- See the following sequence of slides

In the next **5 minutes**...

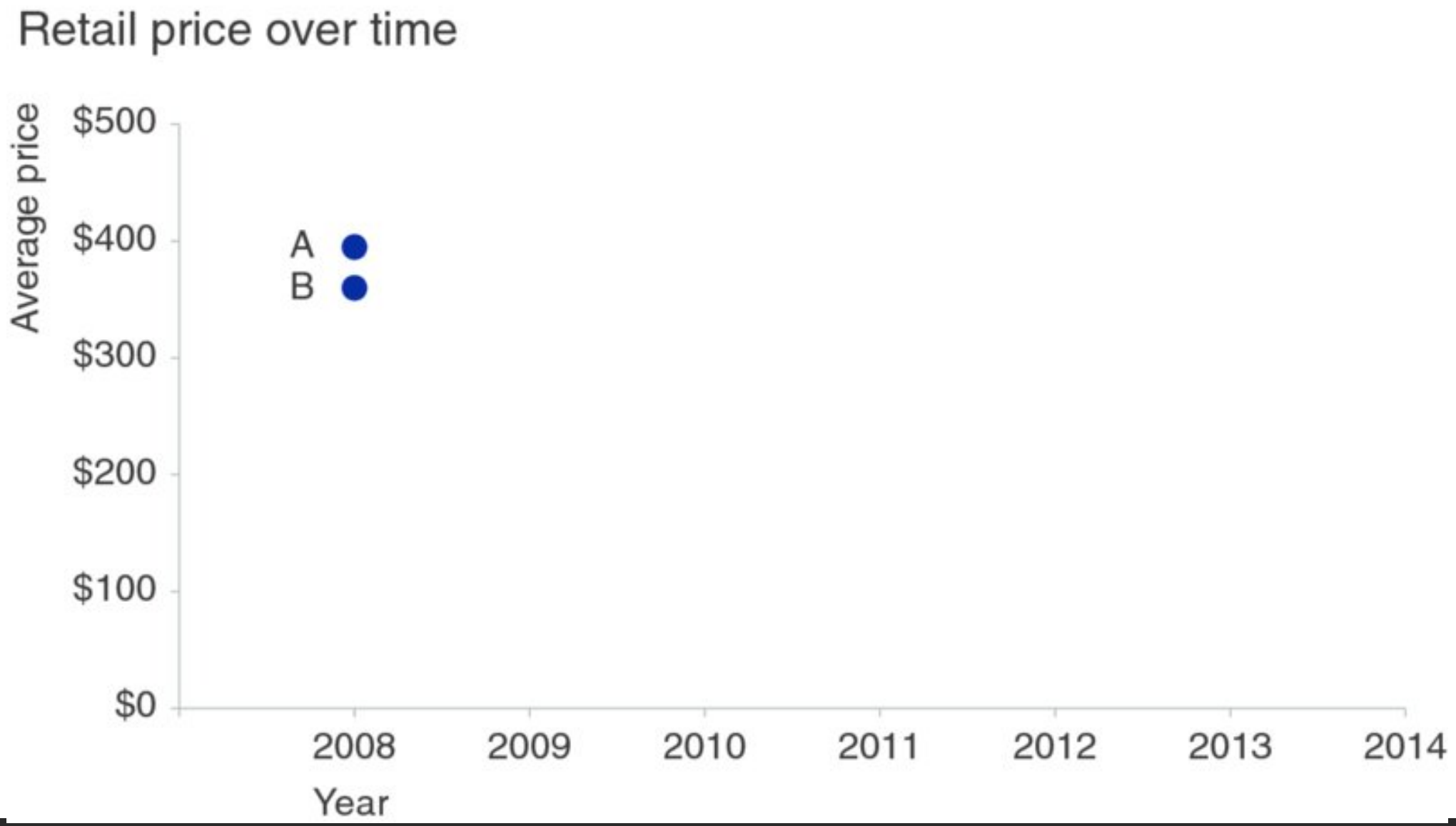
OUR GOAL:

1. Understand **how prices have changed over time** in the competitive landscape.

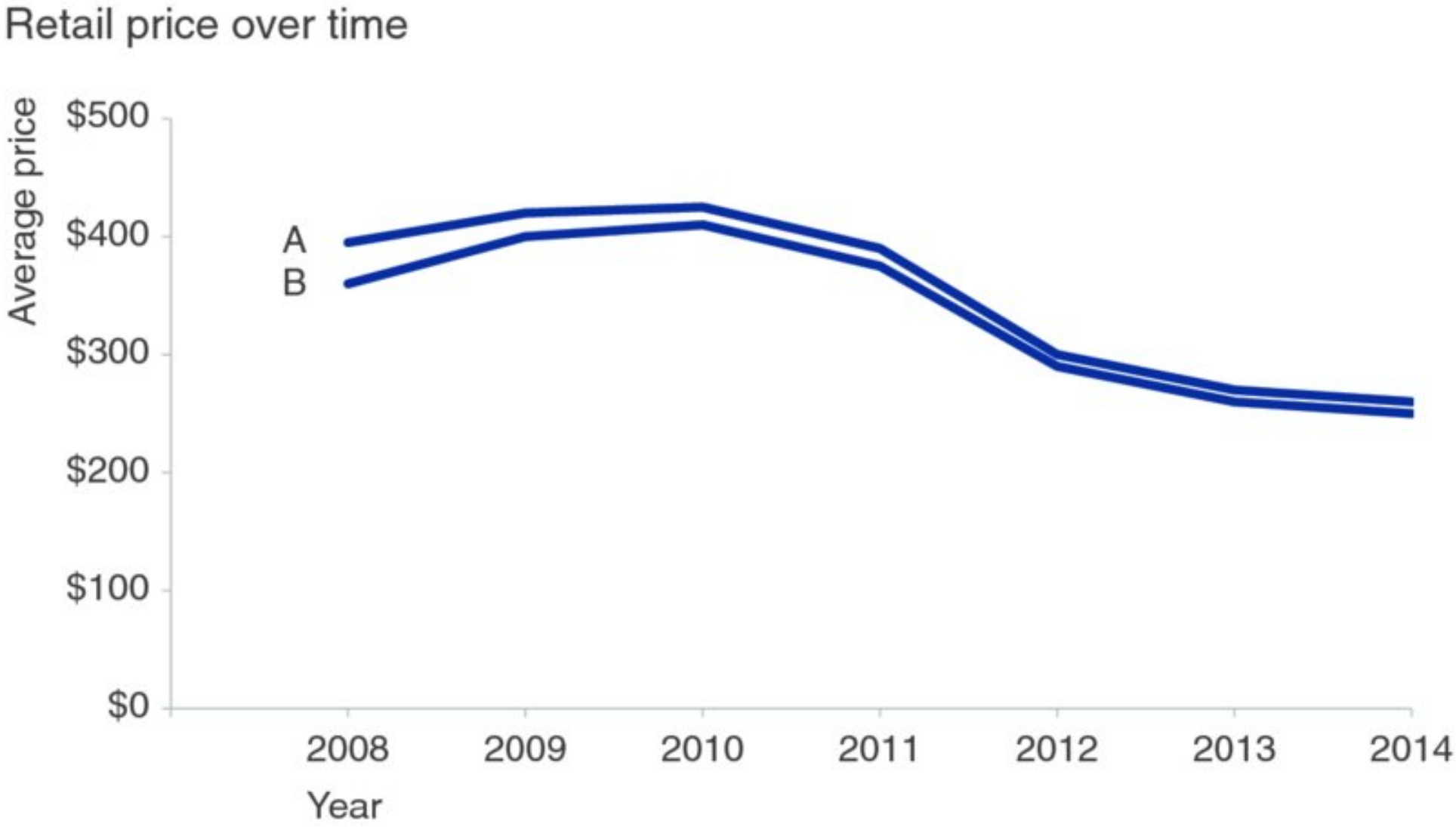
2. Use this knowledge to **inform the pricing of our product**.

We will end with a **specific recommendation**.

Products A and B were launched in 2008 at price points of **$360+**

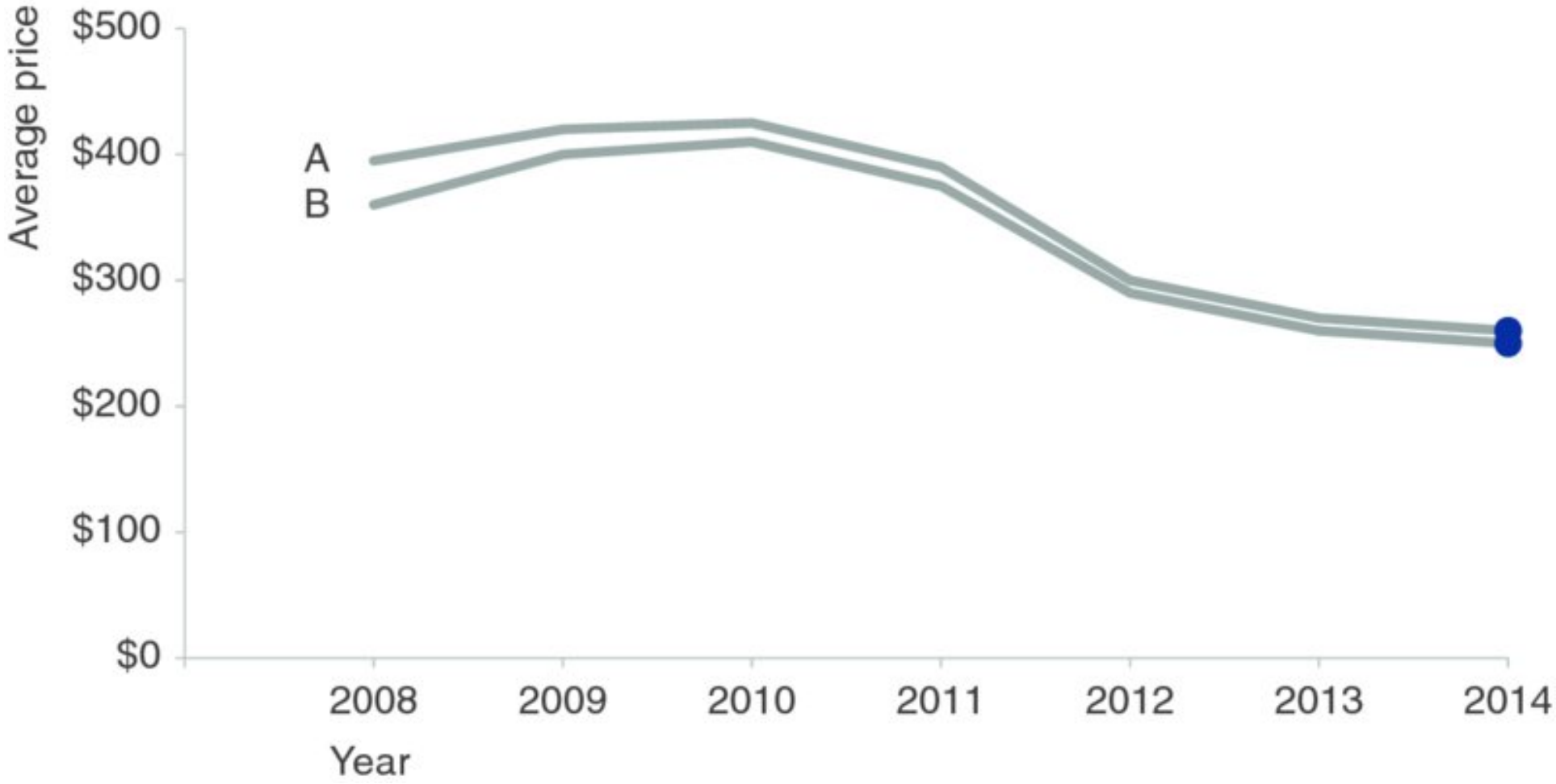


They have been priced similarly over time, with B consistently slightly lower than A



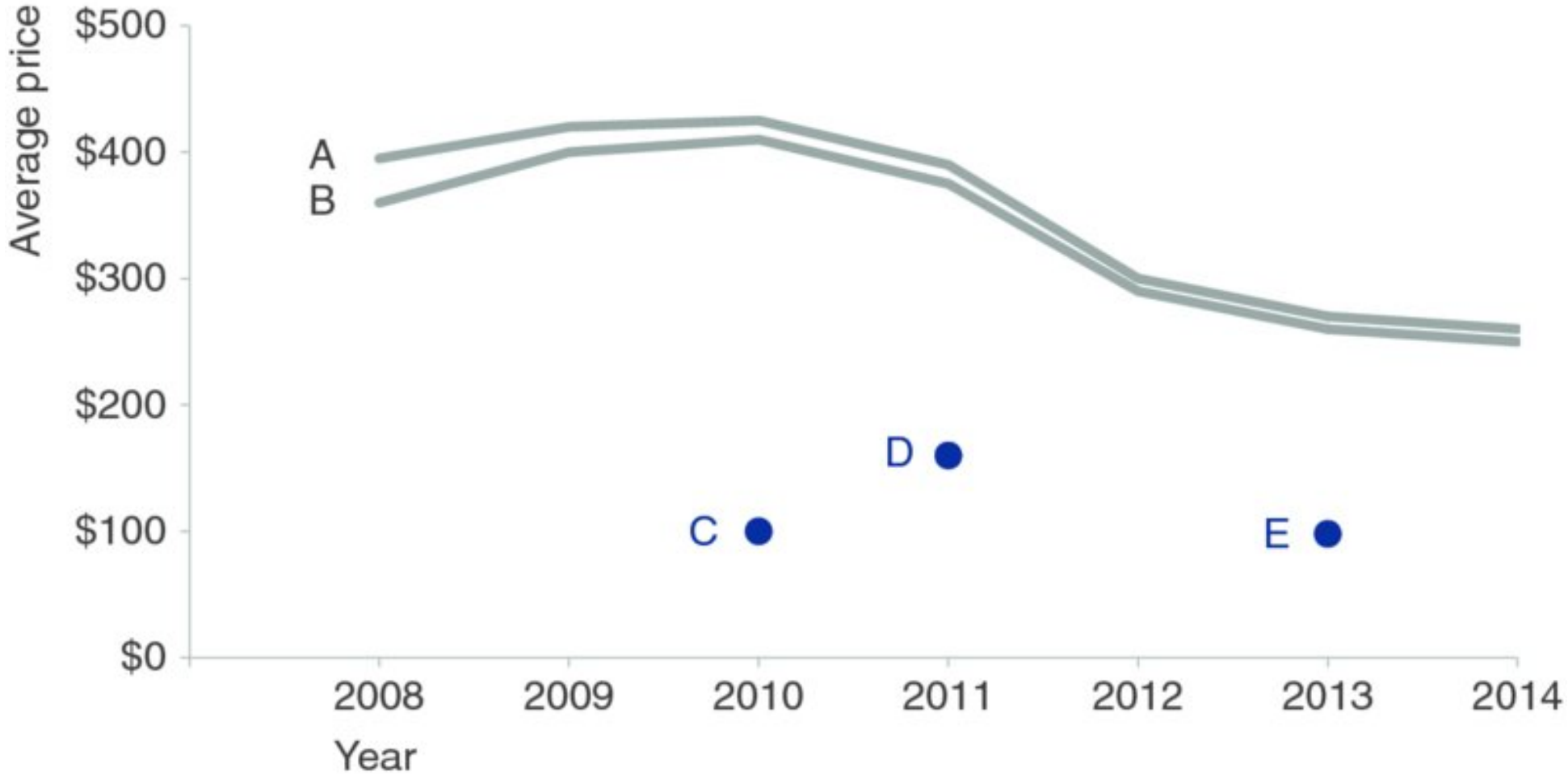
In 2014, Products A and B were priced at **$260** and **$250**, respectively

Retail price over time

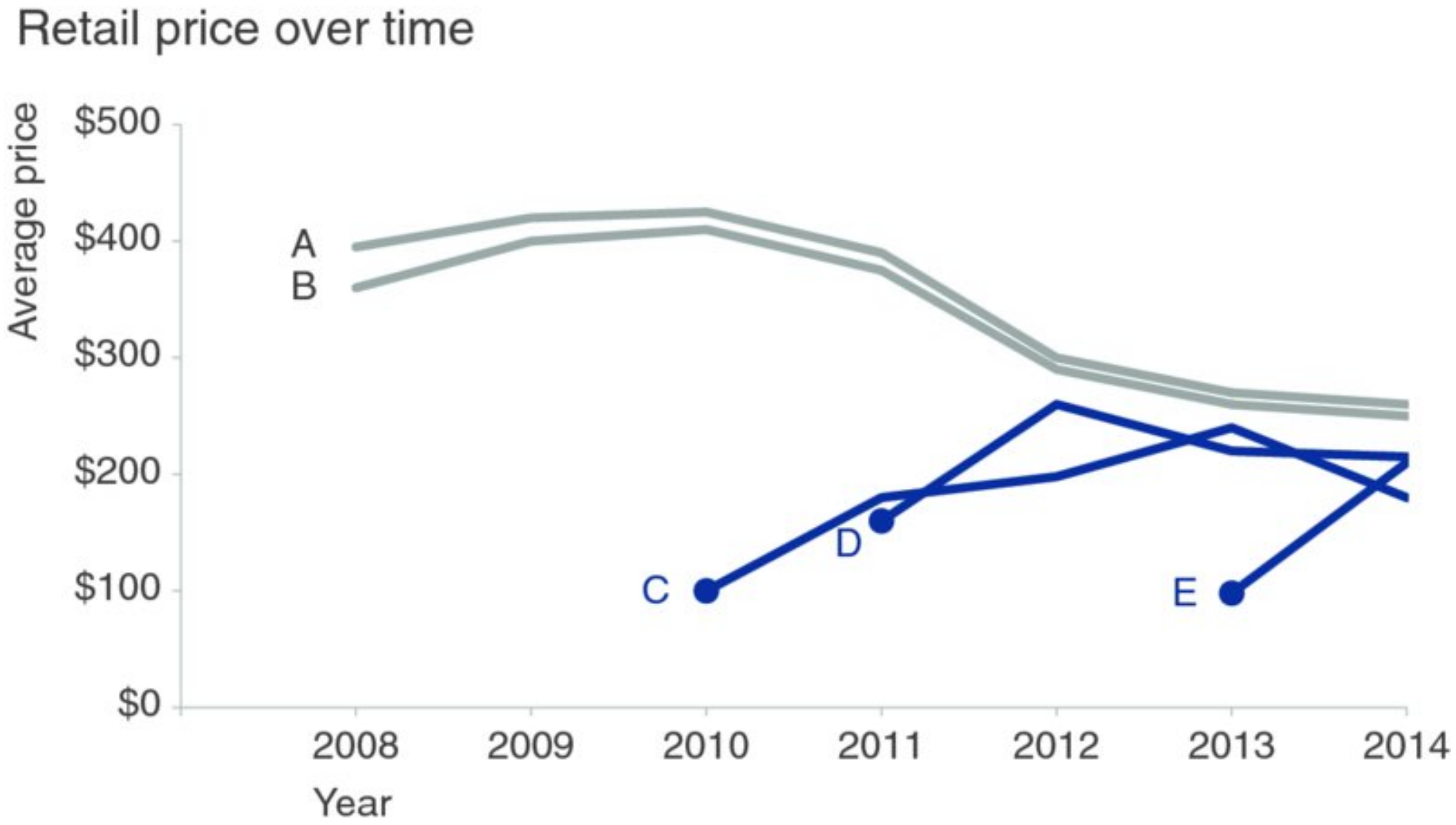


Products C, D, and E were each introduced later at **much lower price points**...

Retail price over time

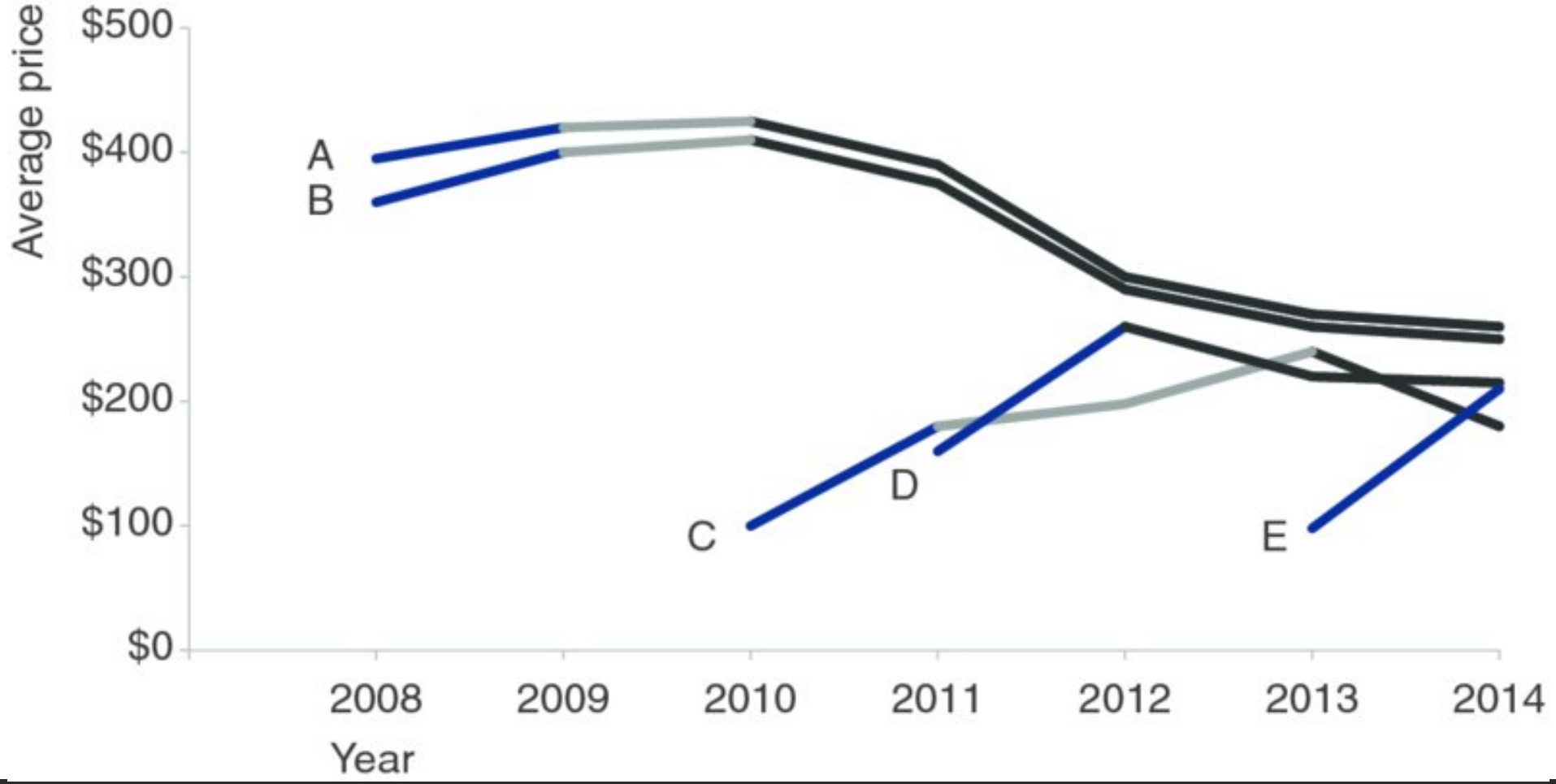


…but all have **increased in price** since their respective launches



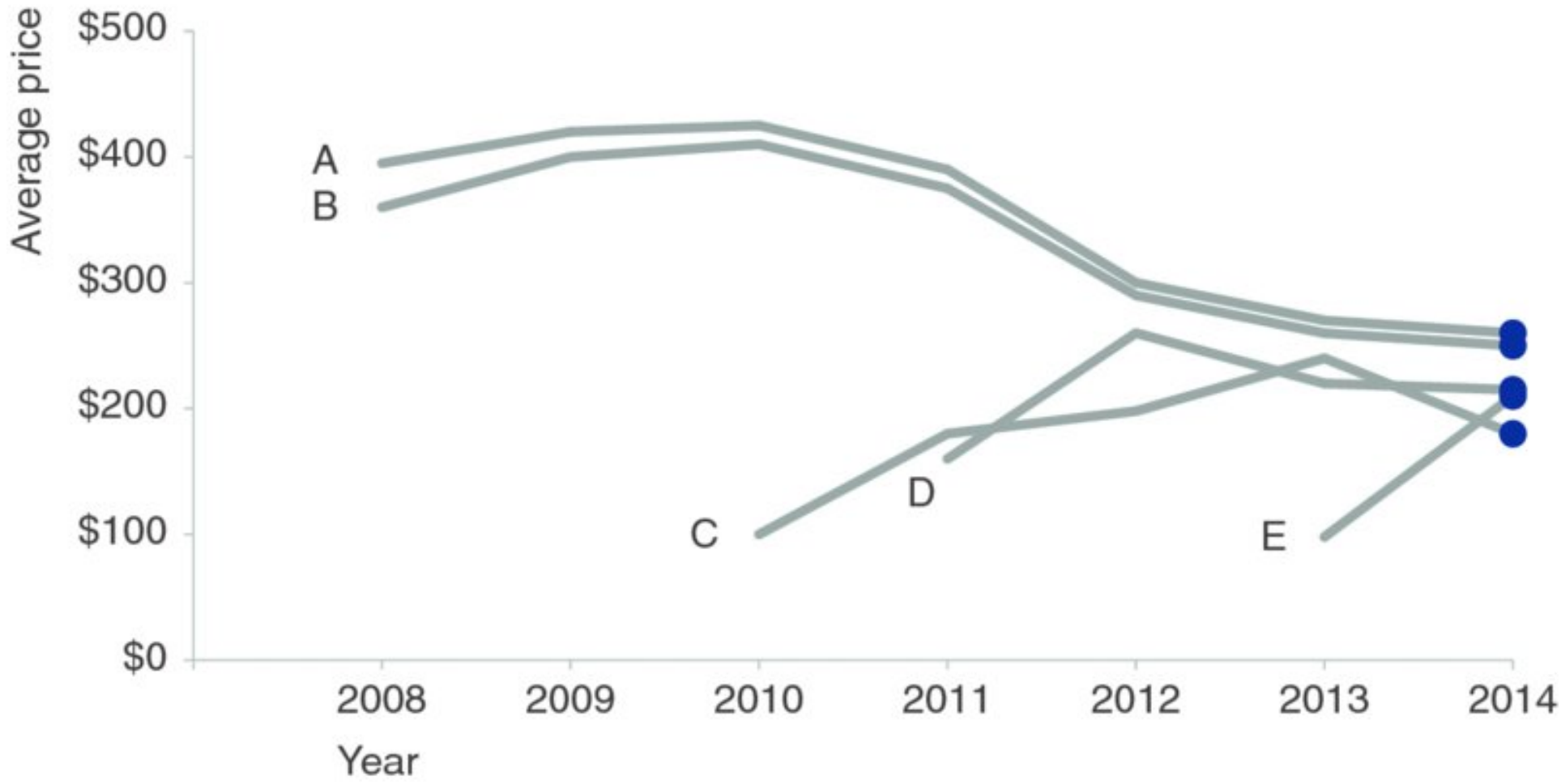
In fact, with the launch of a new product in this space, we tend to see an **initial price increase**, followed by a **decrease** over time

Retail price over time



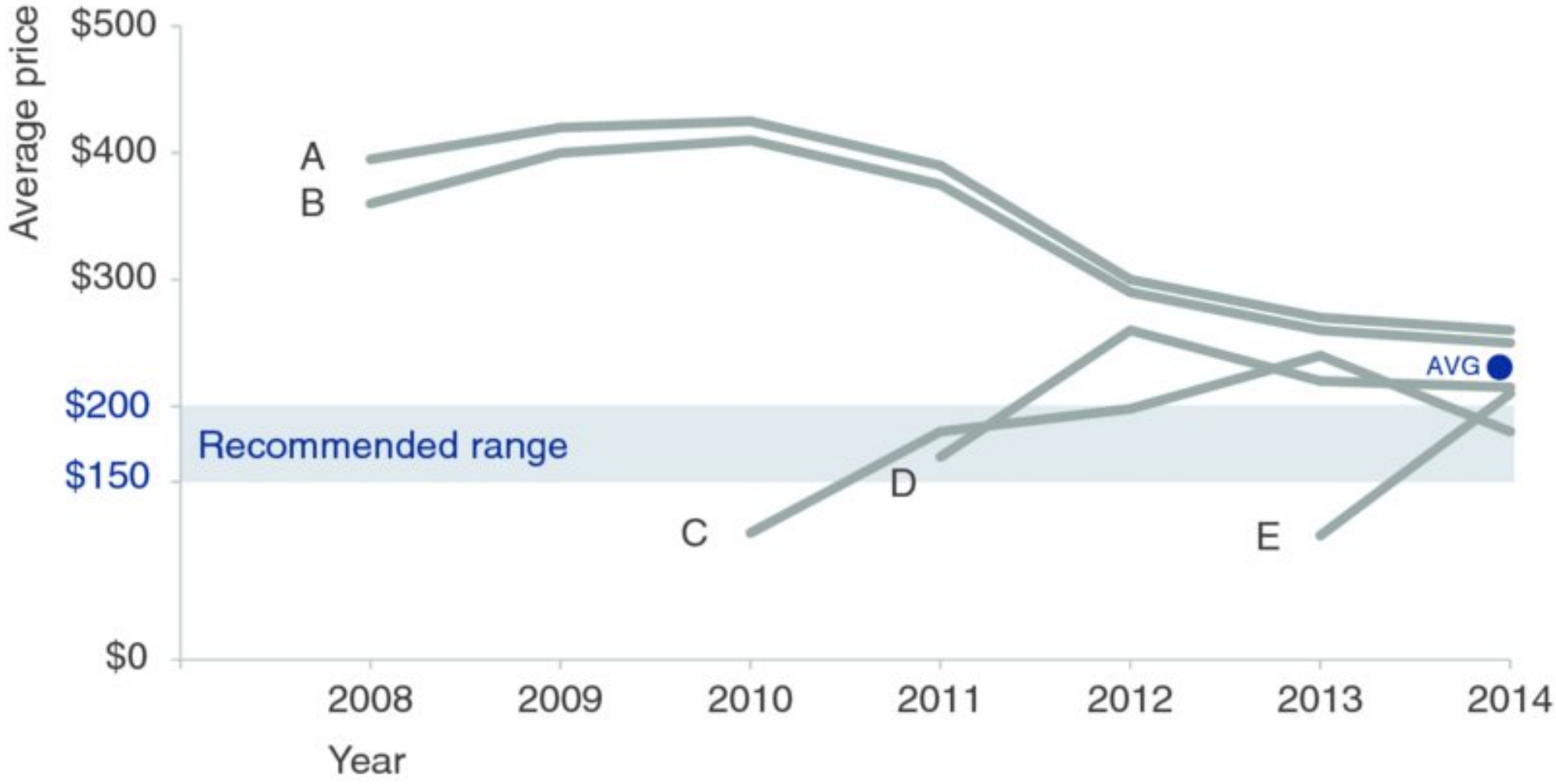
As of 2014, retail prices have converged, with an **average retail price of $223**, ranging from a low of $180 (C) to a high of $260 (A)

Retail price over time



To be competitive, we recommend introducing our product *below the $223 average* price point in the **$150–$200 range**

Retail price over time



Progression of the story

- **The beginning:**
  - We started off by telling our audience the structure we would follow.
  - Set the plot before moving to the next slide: "**As you all know, there are five products that will be our key competition in the marketplace**"
- **The middle:**
  - Build the chronological price path that those products followed.
  - Introduce tension in the competitive landscape when Products C, D, and E significantly undercut existing price points at their respective launches.
  - Restore a sense of balance as the prices converge.
- **The end:**
  - End with a clear call to action: the recommendation for pricing our product.

Storytelling

- Drawing audience's attention to the specific part of the story
  - By only showing the relevant points or
  - By pushing other things to the background and emphasizing only the relevant pieces and
  - By pairing this with a thoughtful narrative

- This same process when multiple visuals in a broader presentation or communication.

Before and after

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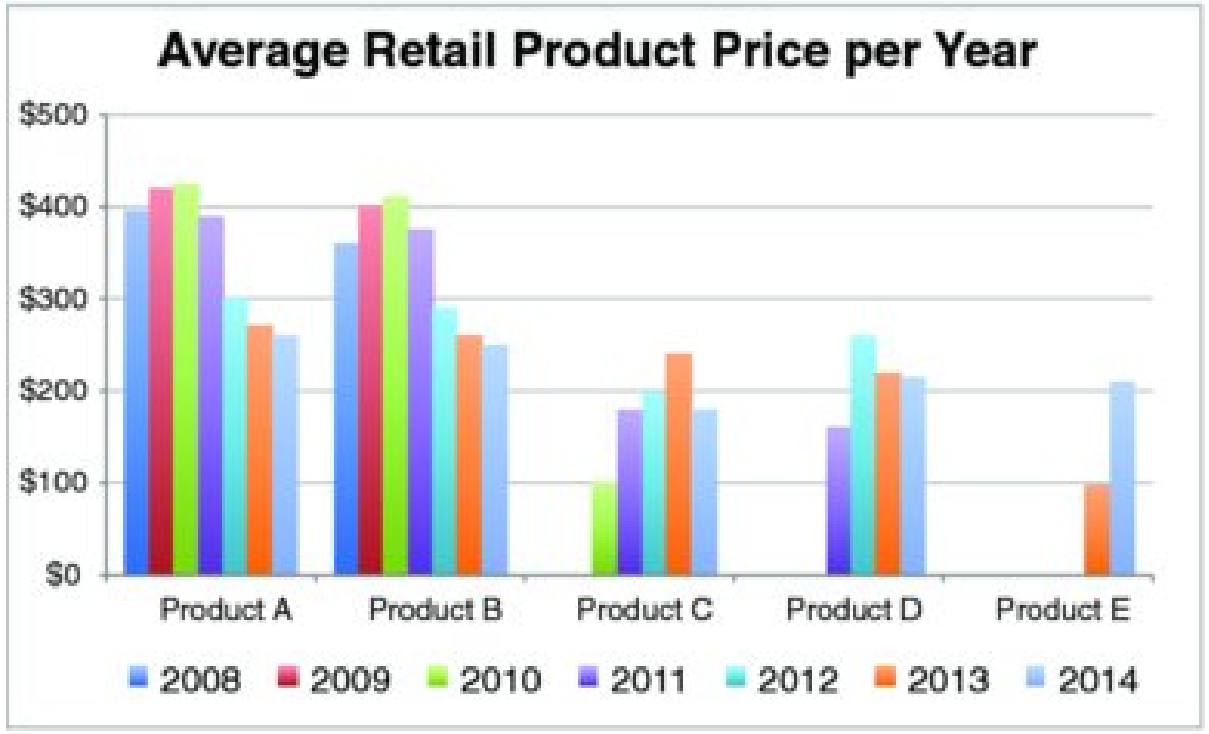

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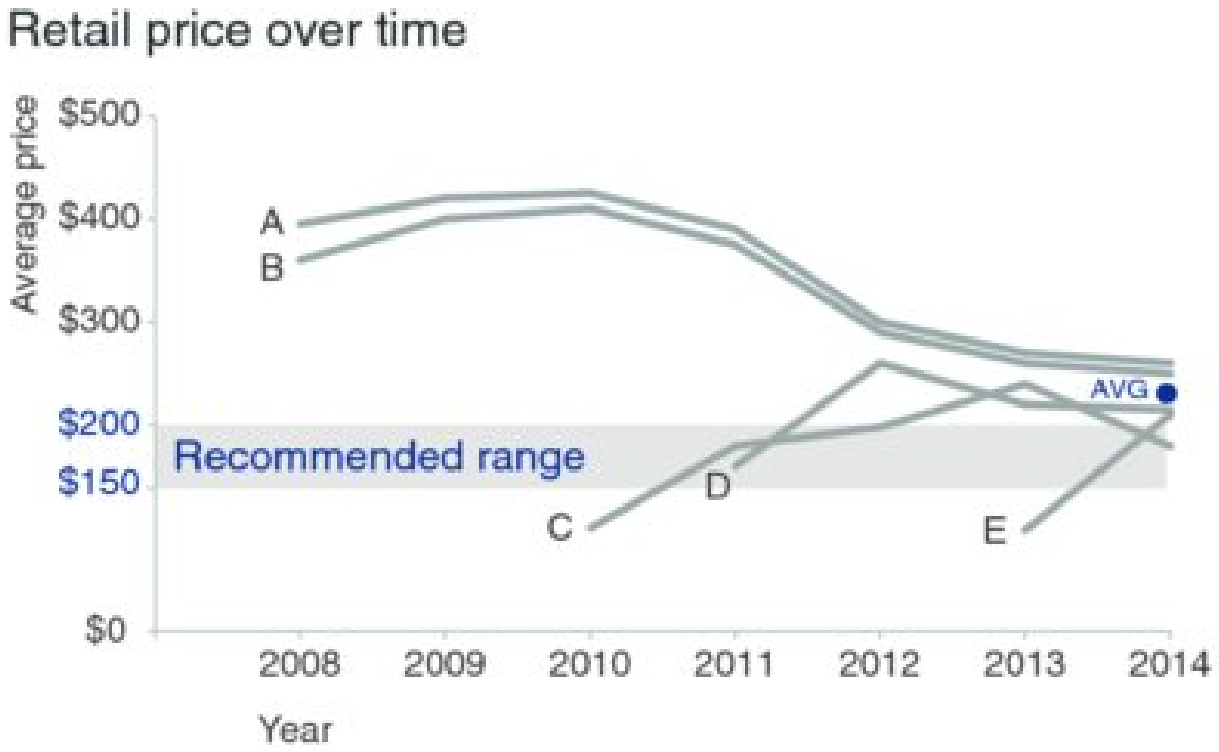

References and Resources

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  - Available online through Seneca Libraries: https://senecacollege-primo.hosted.exlibrisgroup.com/permalink/f/t3376v/01SENC_ALMA5146374280003226
- [Ryan] Lindy Ryan, **Visual Data Storytelling with Tableau**, Pearson Addison-Wesley, 2018
  - Available online through Seneca Libraries: https://senecacollege-primo.hosted.exlibrisgroup.com/permalink/f/t3376v/01SENC_ALMA5167006190003226
- [Healy] Kieran Healy, **Data Visualization: A Practical Introduction**, Princeton University Press, 2018.
  - Available (hardcopy) at Seneca Libraries: https://senecacollege-primo.hosted.exlibrisgroup.com/permalink/f/t3376v/01SENC_ALMA2172469250003226
- **A Reader on Data Visualization:** https://mschermann.github.io/data_viz_reader/
- **Data visualization:** https://en.wikipedia.org/wiki/Data_visualization
- **Section 5: Data concepts** https://www.statcan.gc.ca/eng/dli/guide/section5