



Northwestern  
University

# Data Storytelling

## Week 8



# Data Storytelling



“

Don't just  
show the  
notes, play  
the music!







# TYPICAL STORY LINE

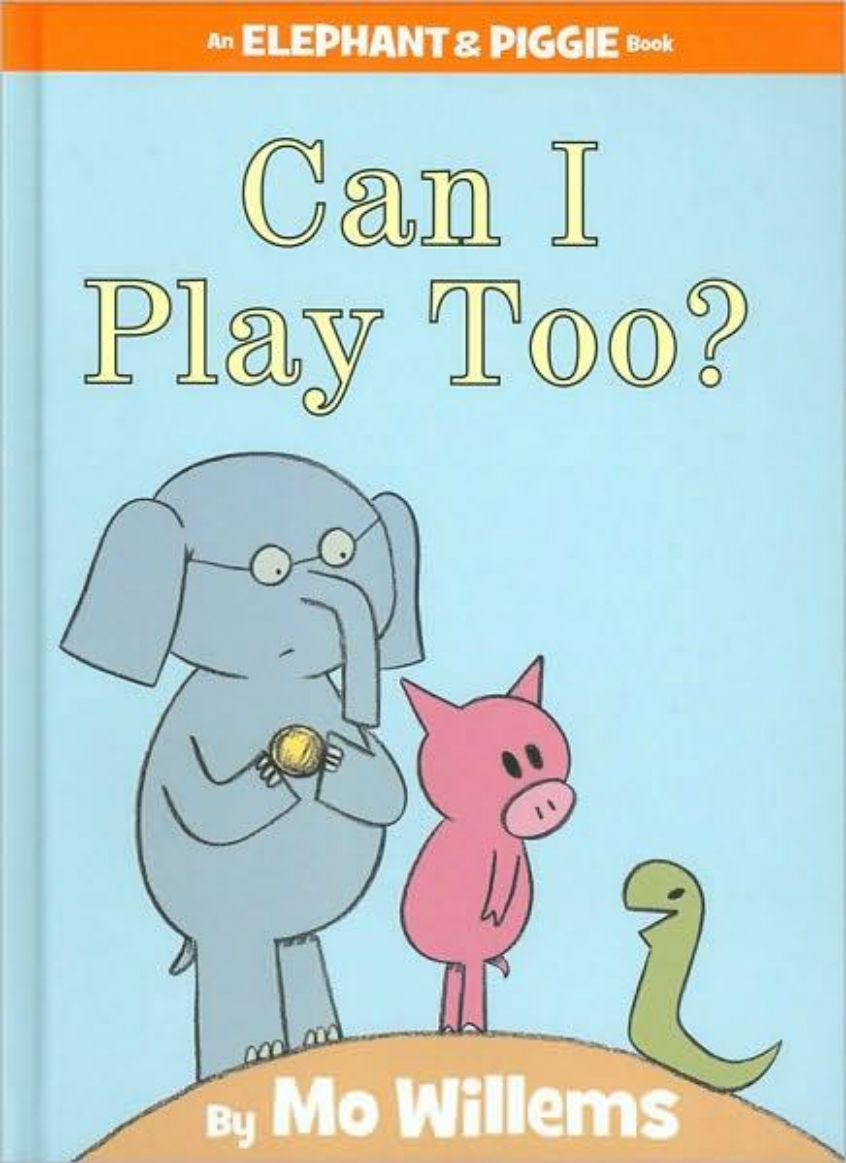
**Intro**  
(background &  
methodology)

**Numbers**

**What the  
Numbers  
Mean**

**What's Next**









# Inspiration

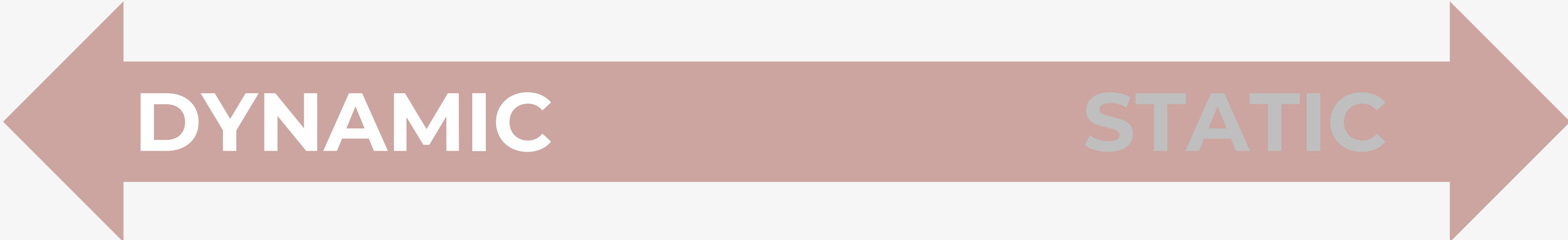


# THE ANATOMY OF DATA STORYTELLING





**Why women are paid less, explained**





# THE ANATOMY OF DATA STORYTELLING

## SYNCHRONY



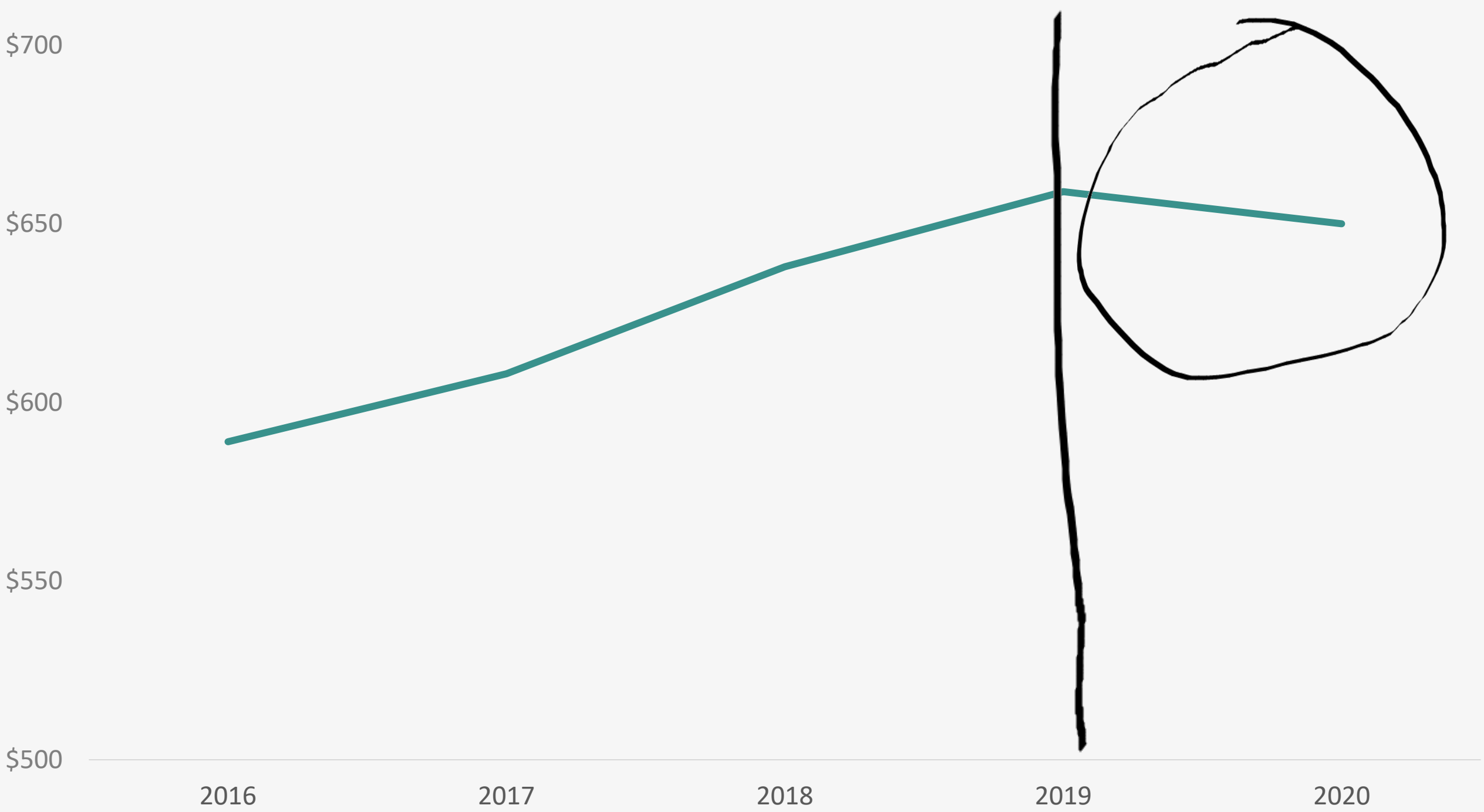


Example #1





# Holiday Plan Spending on Gifts

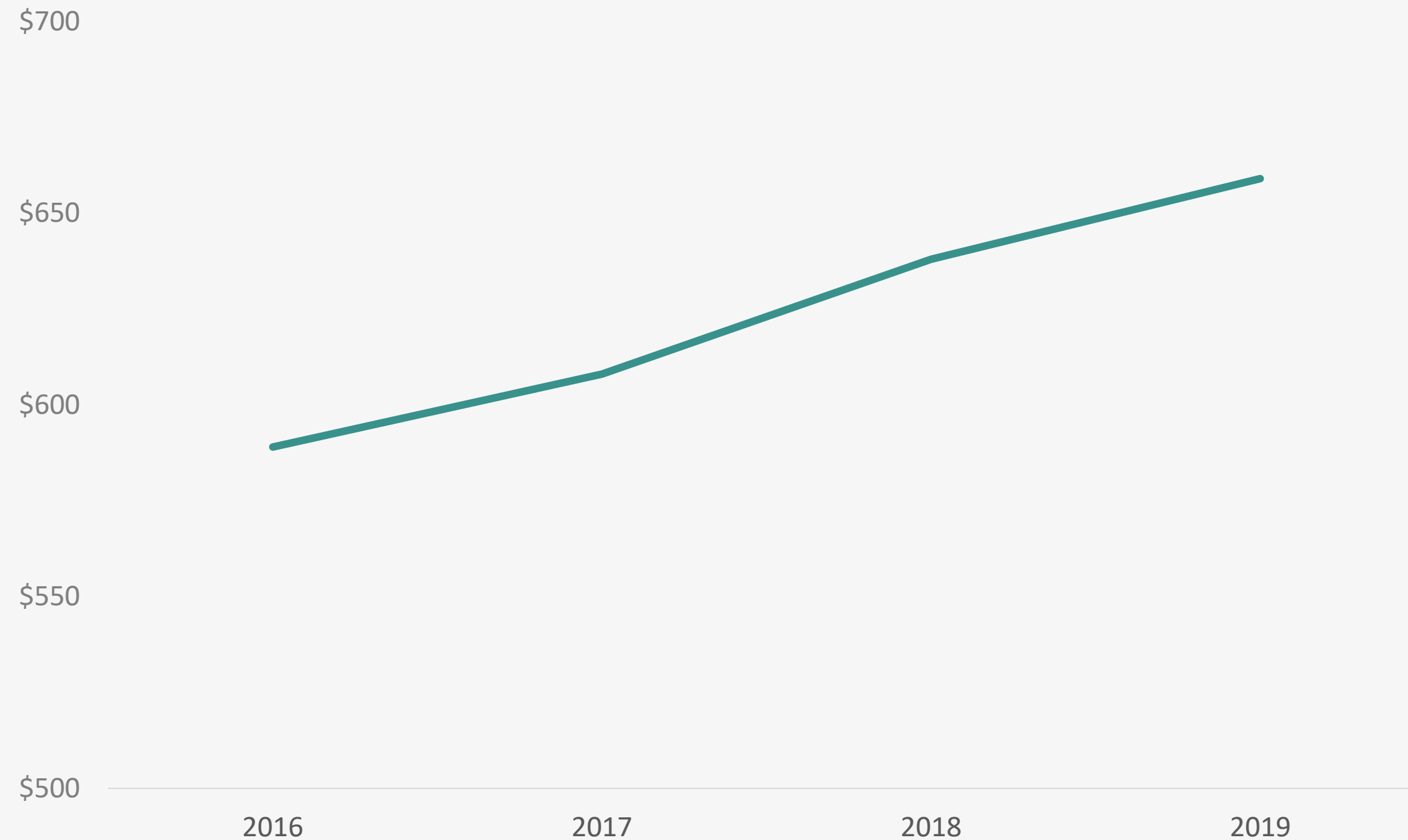


Source: NRF's Annual 2020 Holiday Survey, conducted by Prosper Insights & Analytic



# Planned spend on **gifts** for the holidays was consistently up between 2016 and 2019

Holiday Plan Spending on Gifts



Source: NRF's Annual 2020 Holiday Survey, conducted by Prosper Insights & Analytic

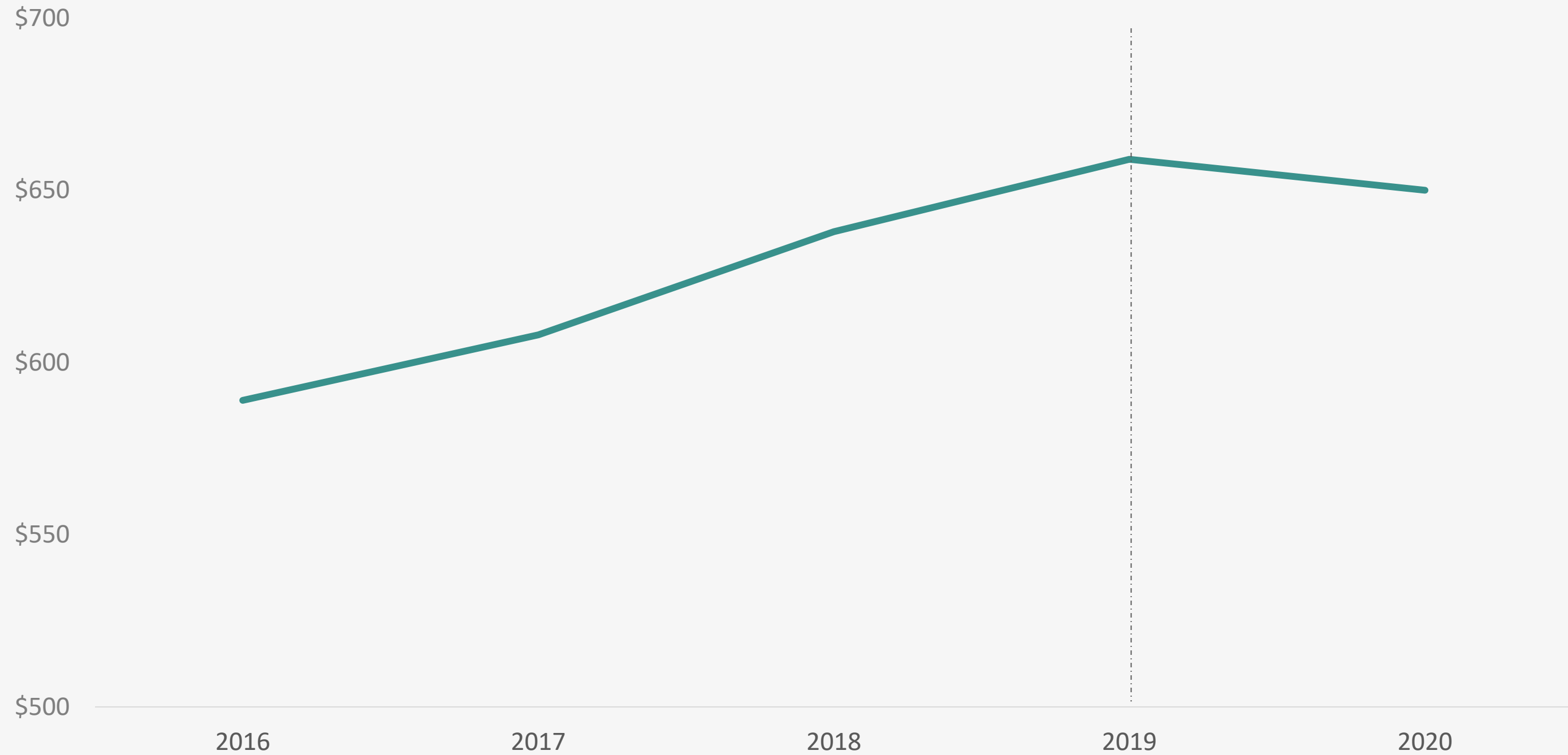






## 2020: For the first time YoY planned spend on gifts declined

Holiday Plan Spending on Gifts



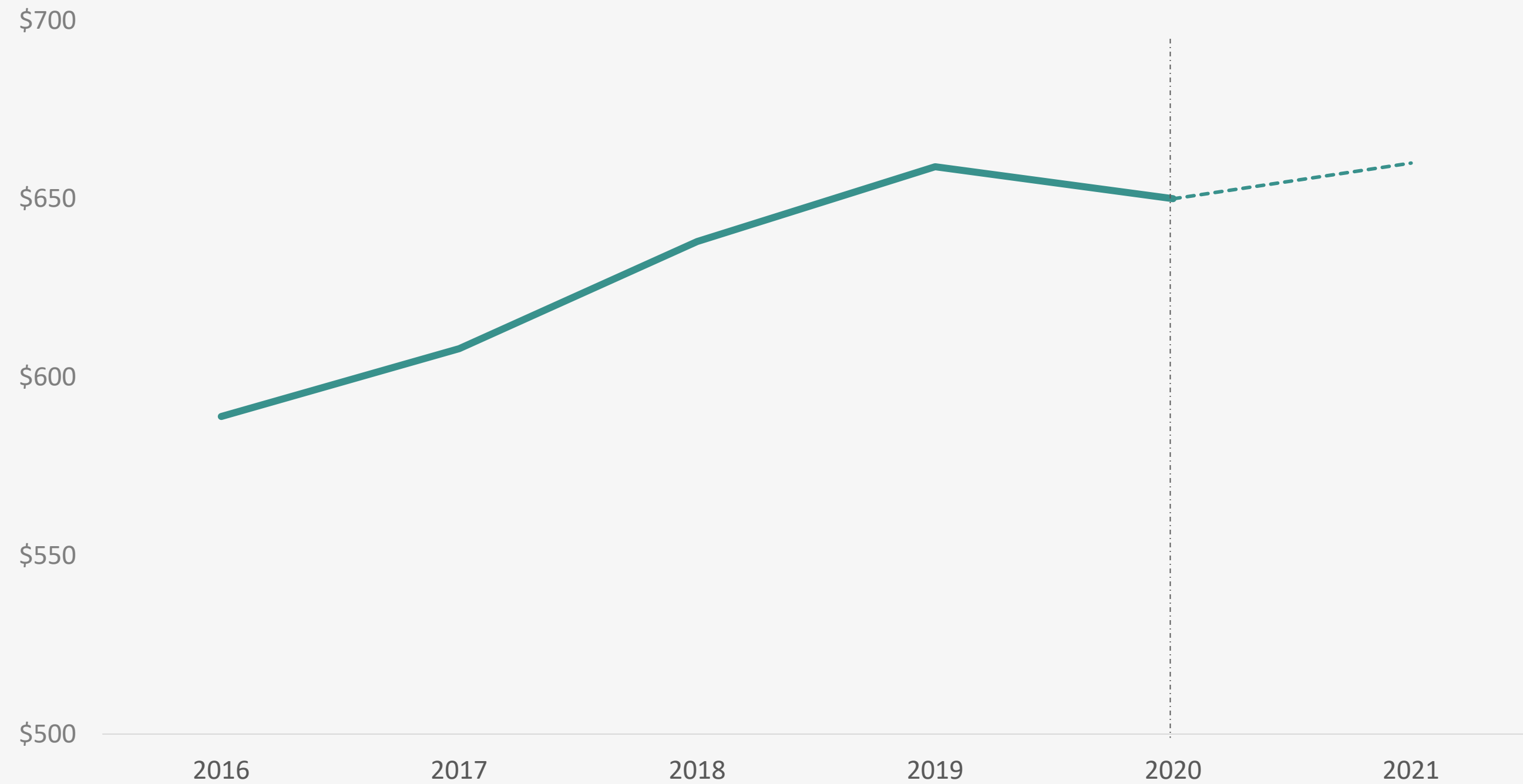
Source: NRF's Annual 2020 Holiday Survey, conducted by Prosper Insights & Analytic





## What's next? Likely, post-pandemic, people will go back to their **regular spending habits**

Holiday Plan Spending on Gifts



Source: NRF's Annual 2020 Holiday Survey, conducted by Prosper Insights & Analytic





# THE ANATOMY OF DATA STORYTELLING

Synchrony

ANNOTATION



Narrative

**Intro**

**Conflict**

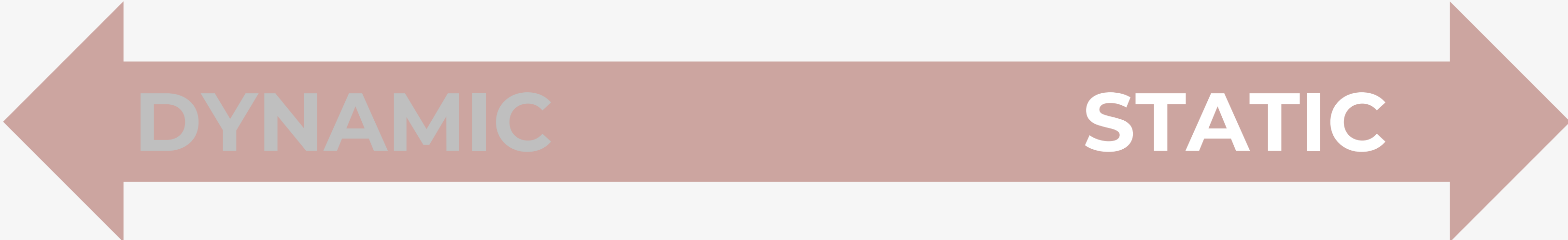
**Resolution**

Compare

Macro to  
micro

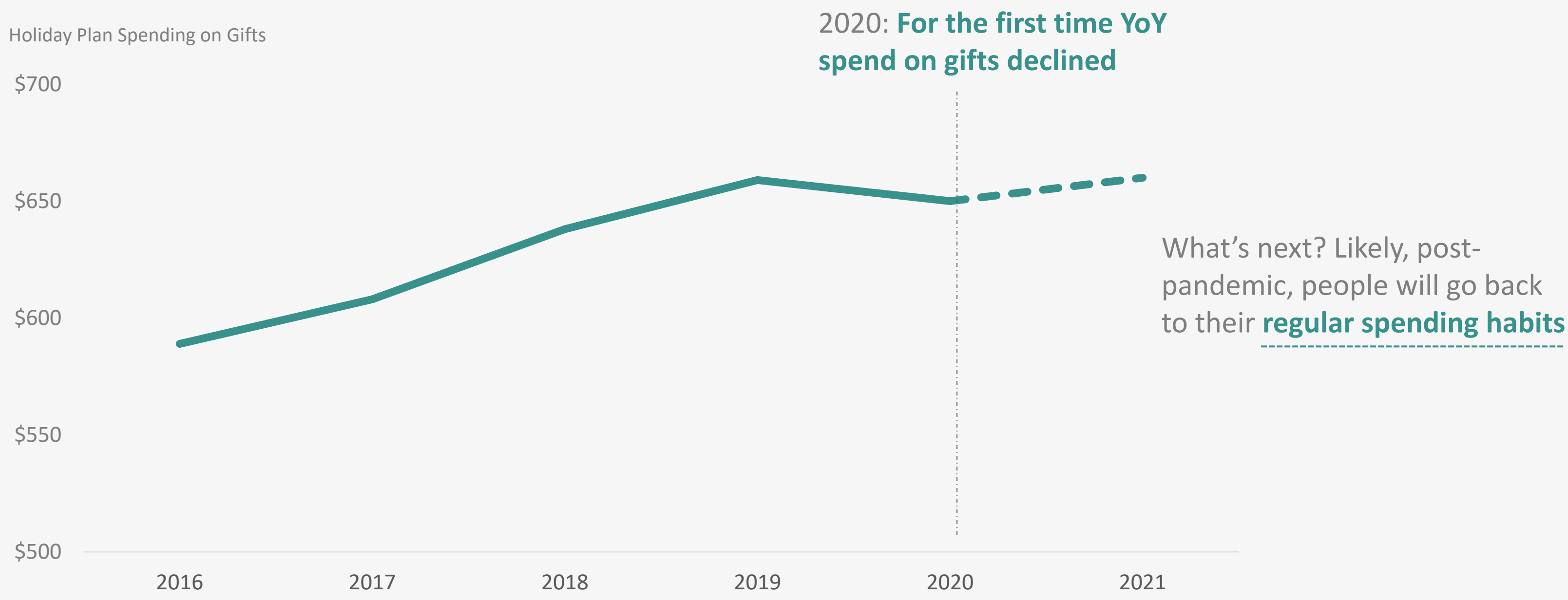
Example







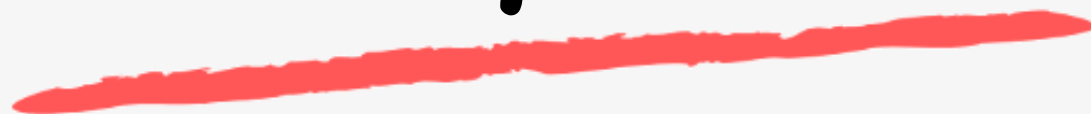
# Americans' Holiday Spending Habits **Look** **Different This Year**



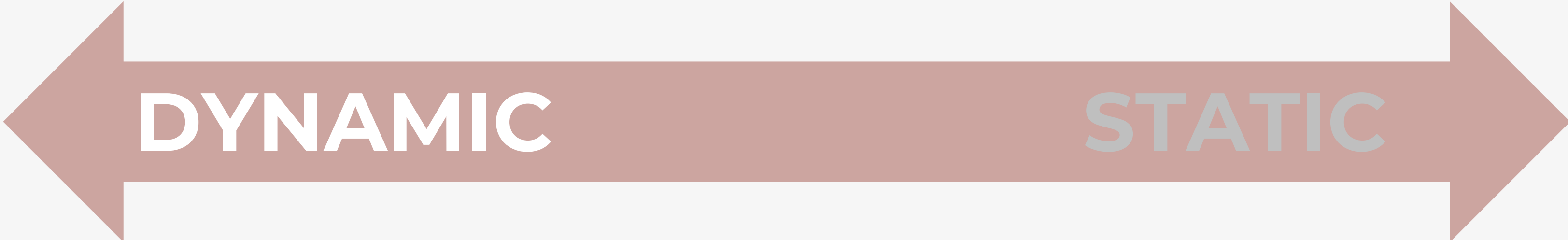
Source: NRF's Annual 2020 Holiday Survey, conducted by Prosper Insights & Analytic



*Example #2*







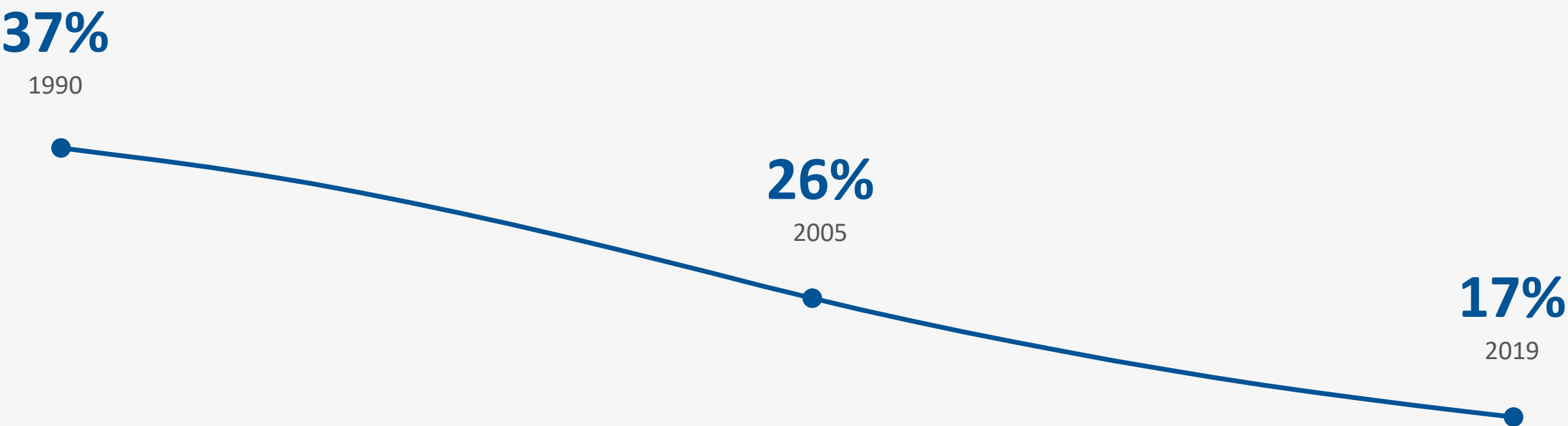


# Step 1: Intro



Neonatal mortality rate has **fallen significantly over time**

*Estimates generated by the UN Inter-agency Group for Neonatal Child Mortality Estimation (UN IGME) in 2020*



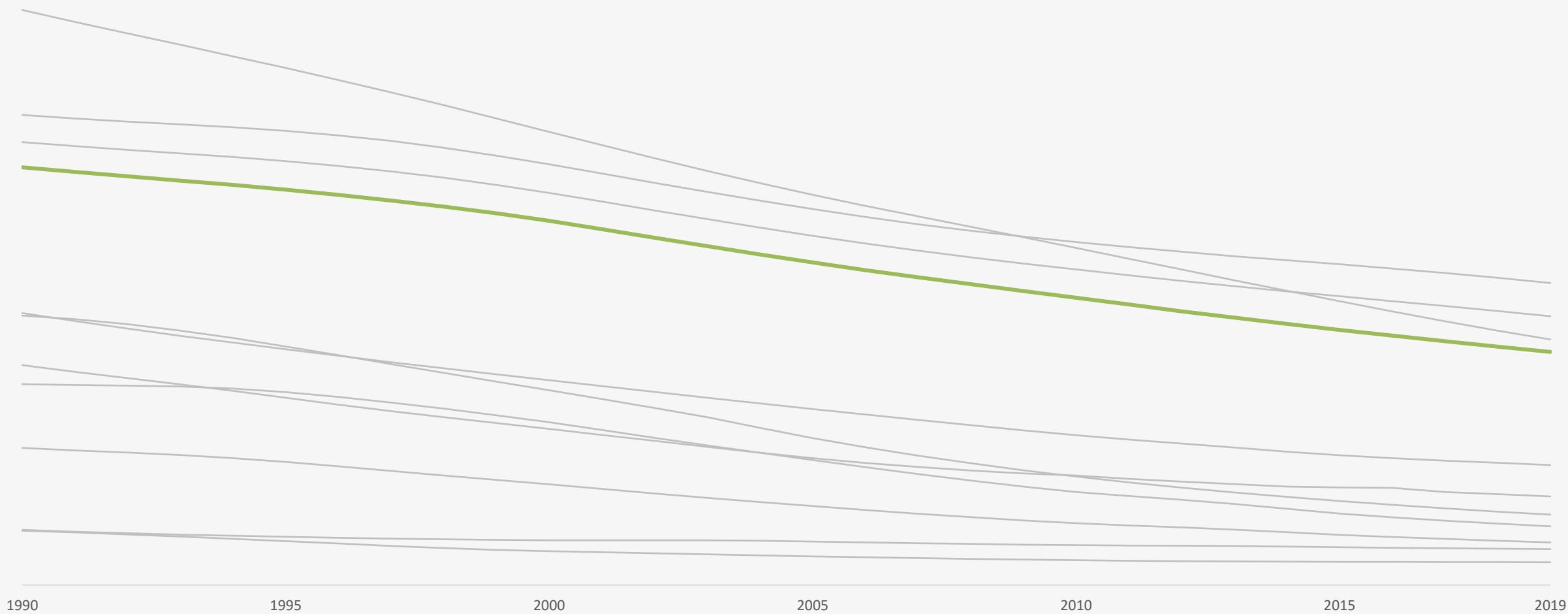


# Step 2: Conflict



But not all regions are the same. Some have improved faster than others.

*Estimates generated by the UN Inter-agency Group for Neonatal Child Mortality Estimation (UN IGME) in 2020*



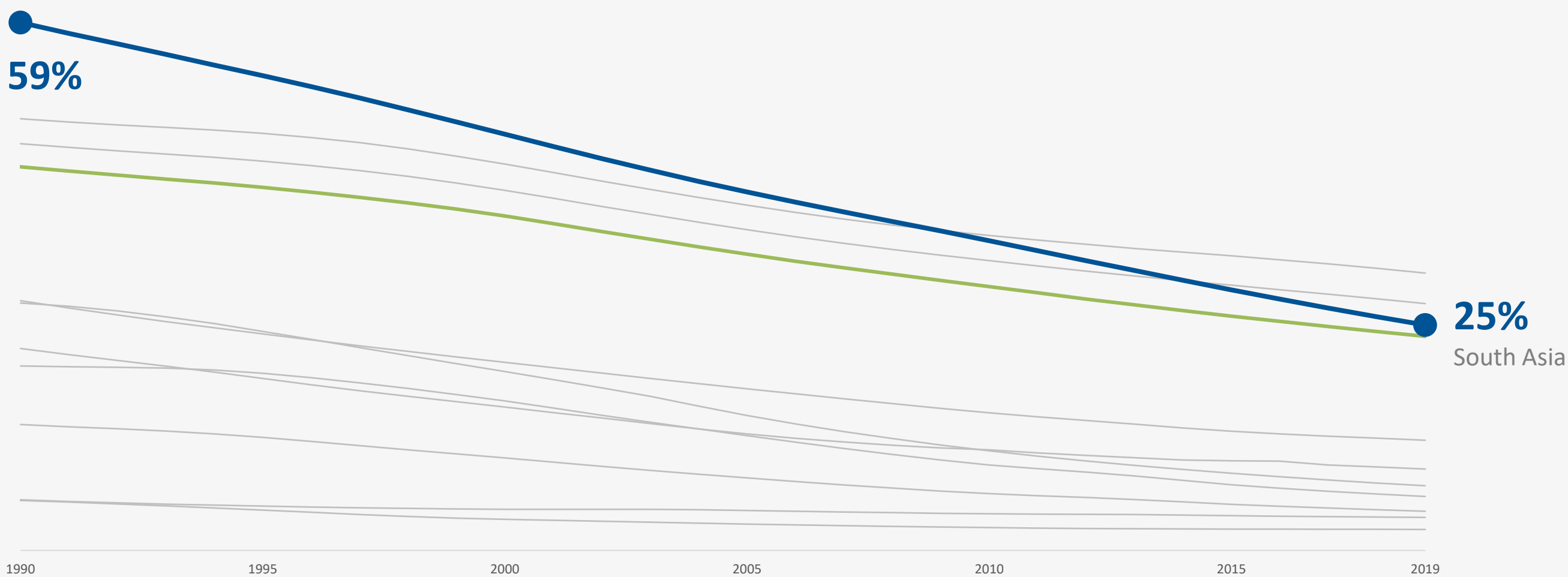


# Step 2: Conflict



**South Asia** registered the most remarkable improvement among all regions (34 p.p.)

*Estimates generated by the UN Inter-agency Group for Neonatal Child Mortality Estimation (UN IGME) in 2020*



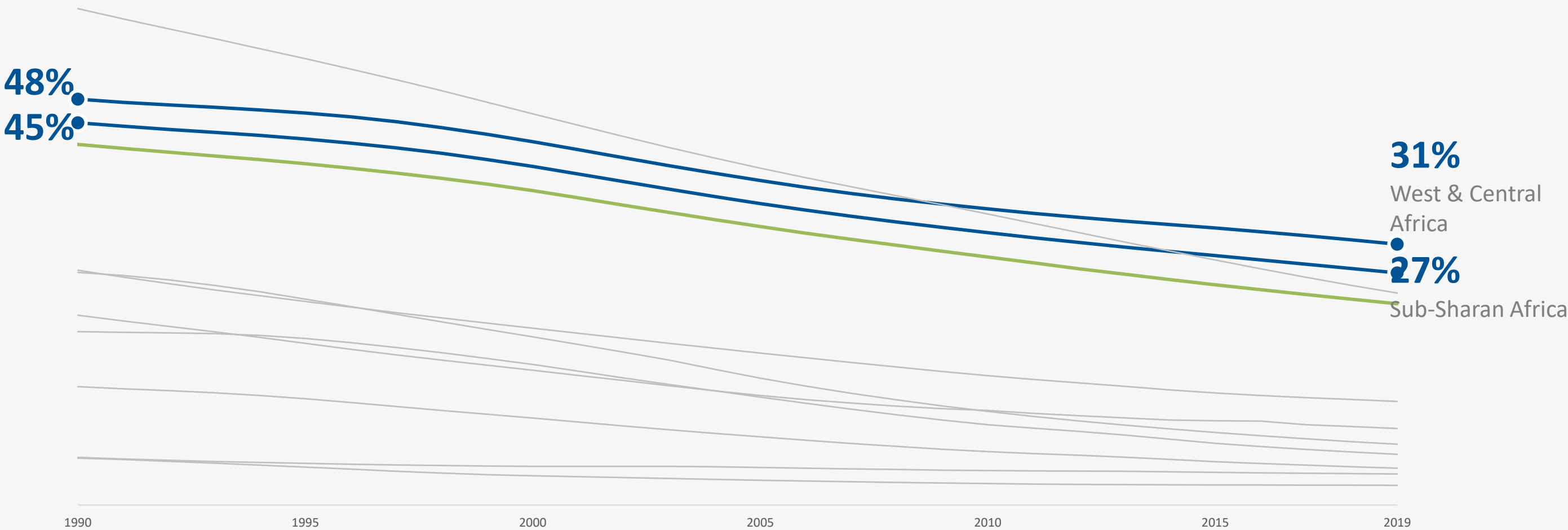


# Step 2: Conflict



Among countries that had above 40% child mortality rate in 1990, **West & Central Africa and Sub-Saharan Africa showed the least improvement**

*Estimates generated by the UN Inter-agency Group for Neonatal Child Mortality Estimation (UN IGME) in 2020*





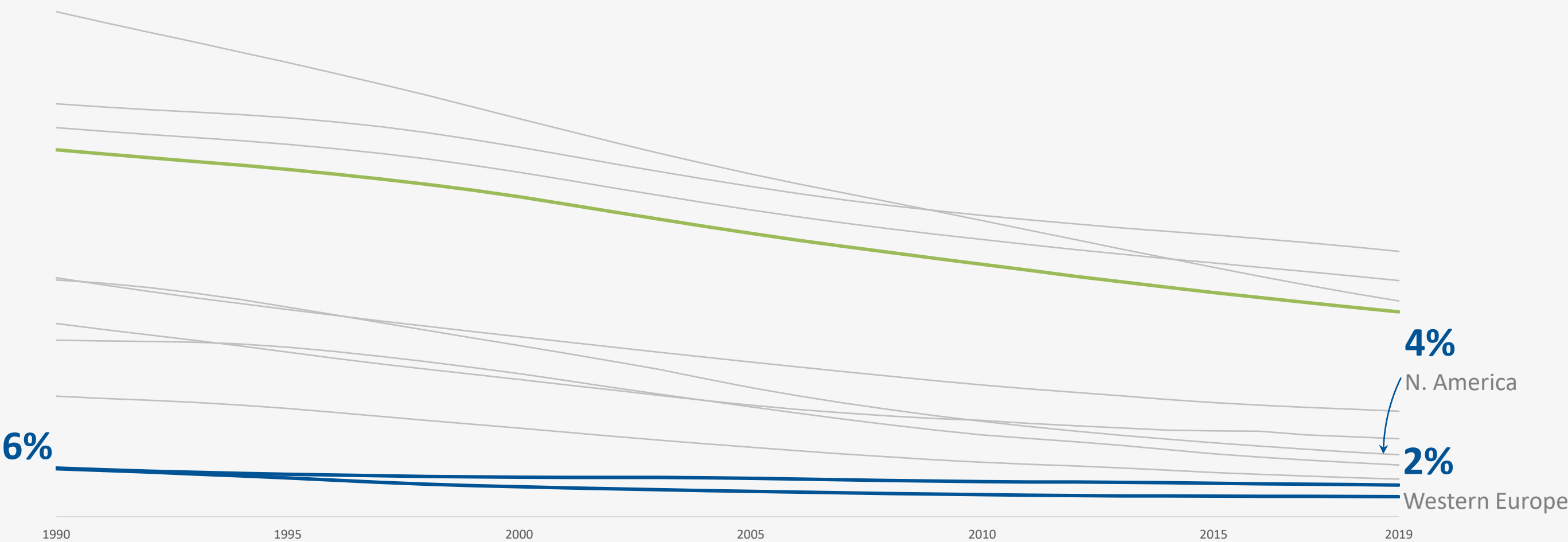


# Step 2: Conflict



Although **Western Europe and N. America** were already ahead in 1990, they continued to show improvement

*Estimates generated by the UN Inter-agency Group for Neonatal Child Mortality Estimation (UN IGME) in 2020*



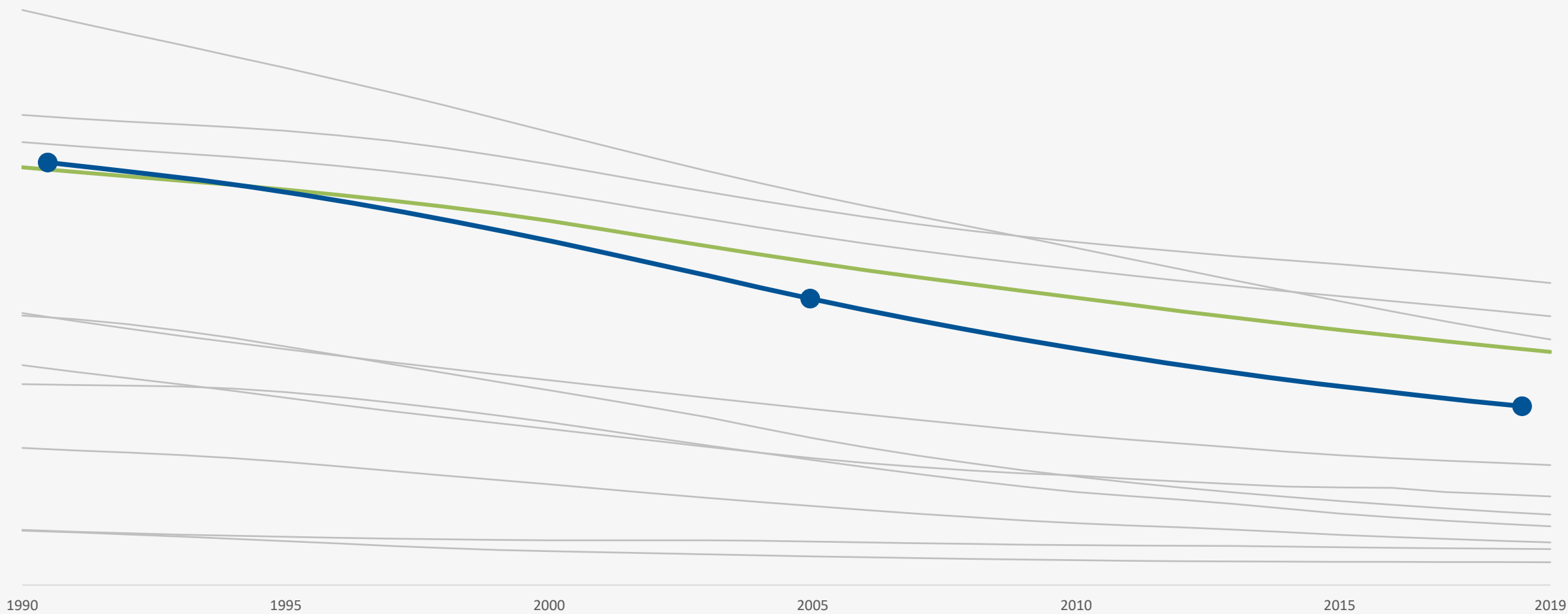


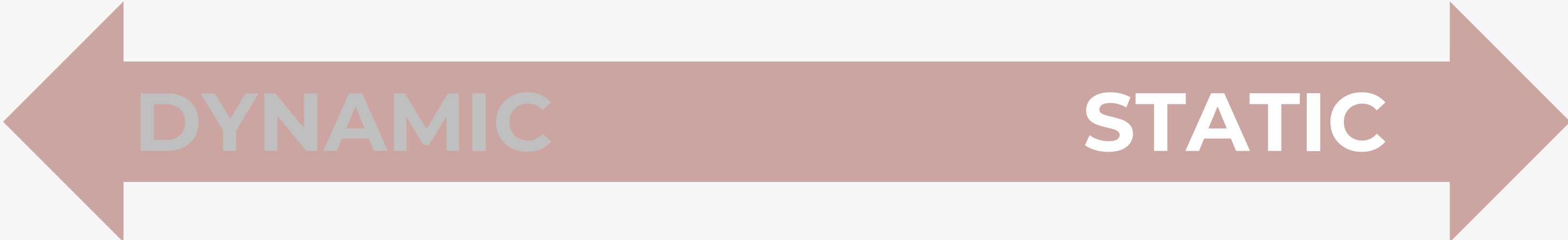
# Step 3: Resolution



**Remember: The global trend doesn't tell the whole story.**

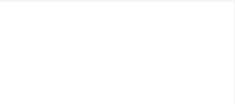
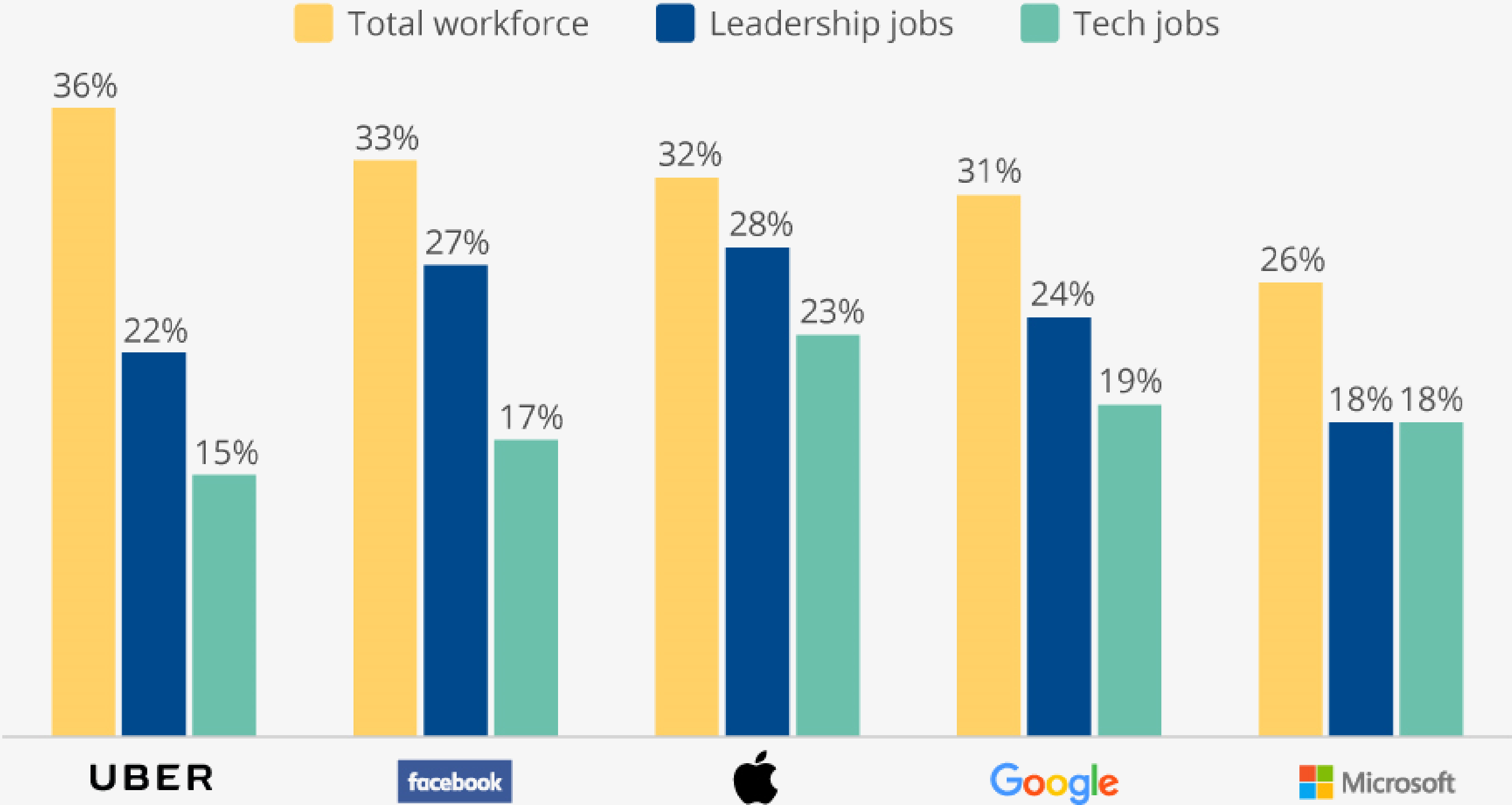
*Estimates generated by the UN Inter-agency Group for Neonatal Child Mortality Estimation (UN IGME) in 2020*







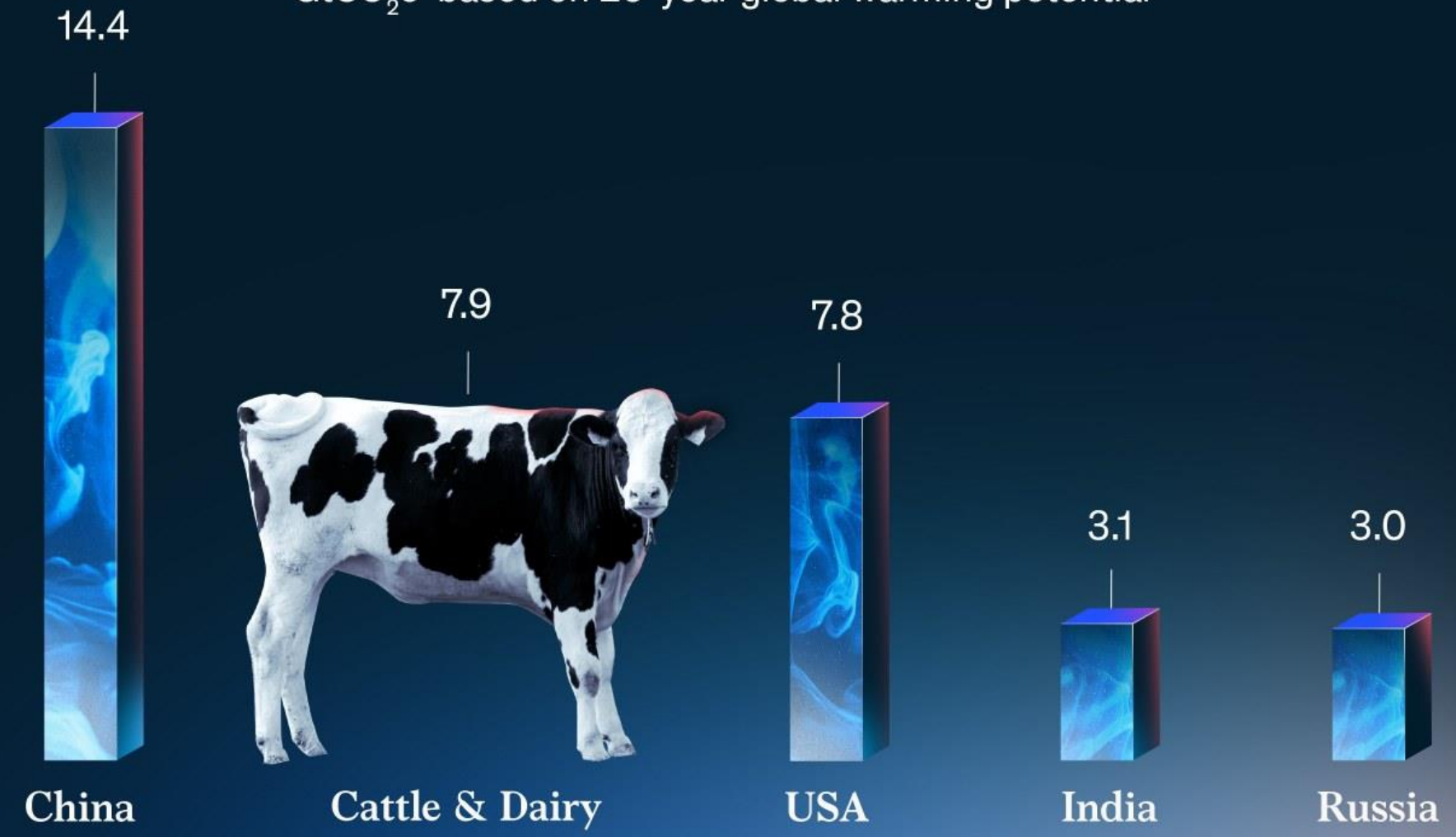
Percentage of female employees in the global workforce of major tech companies





# If cows were a country, they would be among the top greenhouse-gas emitters

GtCO<sub>2</sub>e<sup>1</sup> based on 20-year global warming potential<sup>2</sup>



<sup>1</sup>Billion metric tons of carbon dioxide equivalent.  
<sup>2</sup>2016 data or most recent available; 20-year global-warming-potential values from IPCC's Fifth Assessment Report (AR5).



*Focus & be creative*





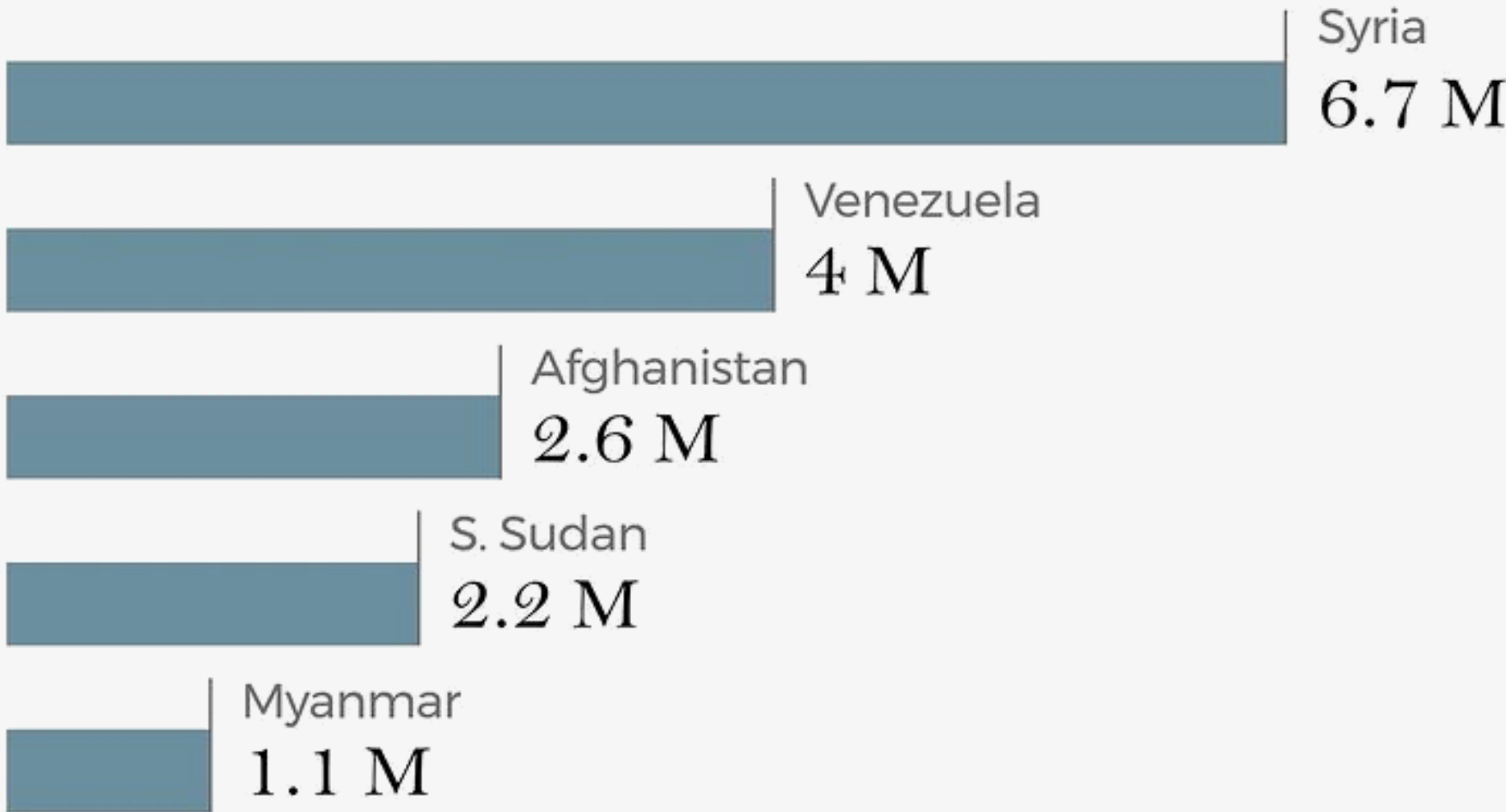
Their numbers have  
DOUBLED in a decade



Source: <https://www.instagram.com/p/CS185Yjrl dh>



# Most refugees come from just FIVE countries

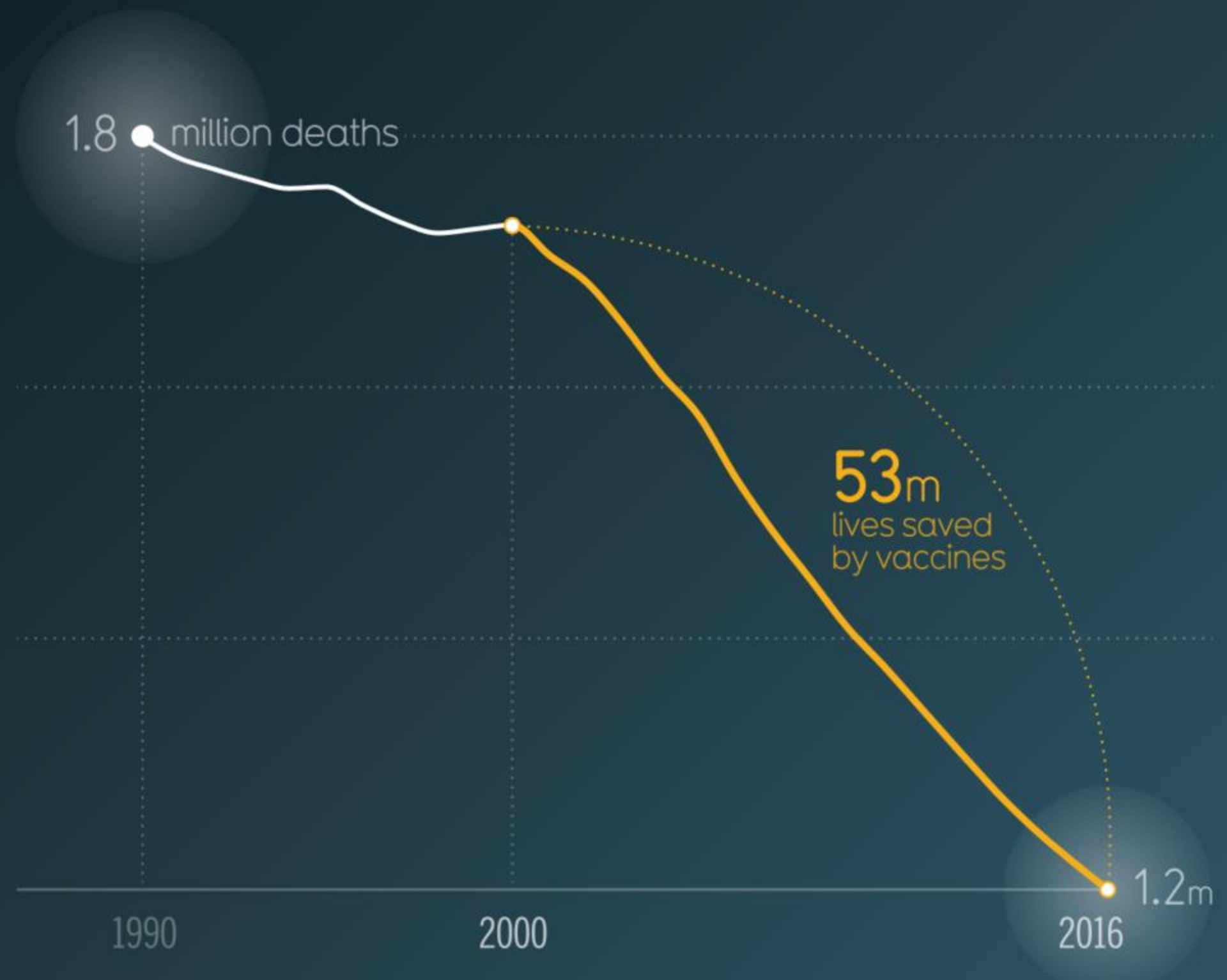


Author: Angelina Jolie (Instagram account)



# Tuberculosis Deaths Are **Falling Worldwide**

More than 90% of the world's children are now vaccinated



beautifulnews

source: Global Burden of Disease Collaborative Network

1

# PLAY THE MUSIC!

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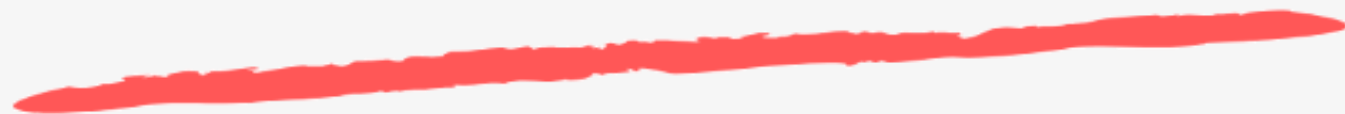
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# DON'T BE LIKE JIM!

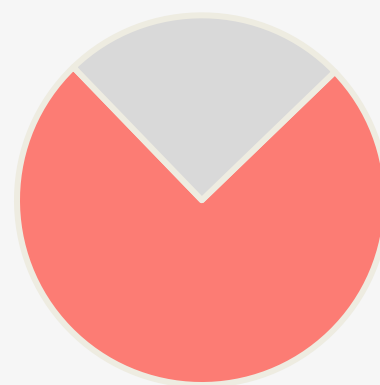
2



*Also consider...*







*75% of all presentations do not convince the audience*



# Audience

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- ▶ Size
- ▶ Data literacy
- ▶ Knowledge on the topic
- ▶ Level of seniority
- ▶ Specific needs/Objective
- ▶ Time available

*Simple can be harder than complex: You have to work hard to get your thinking clean to make it simple*

**Steve Jobs**, Co-Founder, Apple



# Title

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- ❑ Make only **one statement / message** per action title
- ❑ Every action title must contain a **call to action or an insight**
- ❑ Be **concise and on point**
- ❑ Use **active voice** (“We must act” instead of “Action must be taken”)
- ❑ **Avoid nominal constructions** (“the demarcation of responsibility for the settlement of the realization”)
- ❑ **Avoid gerunds** (“We have to reach the target group” instead of “Reaching the target group”)
- ❑ **Do not overcomplicate things**, use easy language and syntax (don’t sound smart, be effective)
- ❑ **Avoid abbreviations**, use the full word (“Call to action” instead of “CTA”)
- ❑ **Write units out** (“2 million dollars” instead of “\$2m”)



# EXERCISE

Use the data set “[What's the point of Valentine's Day](#)” to sketch two graphs, one for each audience:

- Audience 1: your classmate, who is trying to figure out what to plan for Valentine's Day
- Audience 2: a news website that's working on an article on the topic of “What's the point of Valentine's Day?” and focusing on differences by gender

For each graph, write a short explanation on how you incorporated the following: creativity, focusing attention, simplicity, effective headline, and each audience's needs.

Publish your two graphs and your written responses in Canvas.